



SOPs4RI

D6.2: Final report and recommendations International Research Integrity Survey (IRIS)

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(IRIS)

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Table of Contents

Executive summary	12
1. Introduction	14
1.1 Abbreviations	14
1.2 Terminology	14
1.3 About SOPs4RI	15
1.4 About this deliverable	15
2. Methodology.....	17
2.1 Sampling	17
2.1.1 Sampling frame.....	17
2.1.2 Sample design.....	17
2.2 Survey Development	18
2.3 Cognitive testing.....	19
2.4 Pilot testing	19
2.5 Field operations.....	19
2.6 Survey Response	20
2.7 Weighting.....	20
2.8 Data storage/ availability	21
2.9 Ethical considerations.....	21
3. Sample Composition.....	22
3.1 Country of employment	22
3.2 Main field of study	24
3.3 Career stage and education	29
3.4 Other characteristics	31
4. Questionable Research Practices.....	32

4.1	Introduction	32
4.2	The survey question	32
4.3	Results	33
4.3.1	Questionable research practices by field	34
4.3.2	Questionable Research Practices by Career Stage	36
4.3.3	Questionable Research Practices by Sex	36
4.3.4	Questionable Research Practices by Country	37
4.4	Conclusion.....	39
5.	<i>Perceptions of current organisational effectiveness in Research Integrity</i>	40
5.1	Introduction	40
5.2	The survey questions.....	40
5.3	Results	42
5.3.1	Organisational written statement on research integrity.....	42
5.3.2	Communication of organisational research integrity statements	44
5.3.3	Resemblance of working environment to research integrity ideals.....	45
5.3.4	Institutional adherence to high research integrity standards, by country group.....	45
5.3.5	Institutional adherence to high research integrity standards, by career stage.....	47
5.3.6	Awareness of organisational policies	49
5.3.7	Awareness of organisational policies by geo-political country groupings.....	49
5.3.8	Awareness of organisational policies by career stage	50
5.3.9	Perception of effectiveness of organizational policies	50
5.3.10	Importance of research integrity areas for ensuring high quality research	54
5.3.11	Confidence in organisations in ensuring a high level of RI.....	57
5.4	Conclusion.....	58
6.	<i>Researcher Attitudes to Research Integrity.....</i>	60
6.1	Introduction	60
6.2	The question	60
6.3	Results	61
6.3.1	Responsibility of research integrity	61
6.3.2	Research integrity as box-ticking exercise	63

6.3.3	Research integrity policies improve my research	64
6.3.4	Research Integrity training	66
6.4	Conclusion.....	67
7.	<i>Researchers' motivation to adhere to research integrity procedures</i>	<i>68</i>
7.1	Introduction	68
7.2	The question	68
7.3	Results	68
7.4	Conclusion.....	74
8.	<i>Researcher identity and reference group.....</i>	<i>76</i>
8.1	Introduction	76
8.2	The Question - Identity	76
8.3	Results - Identity	76
8.4	The Question - Valuing the opinion of one's research	79
8.5	Results	79
8.6	The question - Information flow	81
8.7	Information Flow - Results.....	81
8.8	Conclusion.....	85
9.	<i>Summary.....</i>	<i>86</i>
9.1	QRPs	86
9.2	RI policies	86
9.3	Identity, information and motivations	87
10.	<i>References.....</i>	<i>88</i>
11.	<i>Appendices</i>	<i>89</i>
11.1	Appendix I. List of countries where Census sampling occurred.....	89
11.2	Appendix II. Survey Development.....	91

11.2.1	Cognitive testing	91
11.2.2	Pilot testing	92
11.3	Appendix III. Survey content.....	94
11.3.1	Demographics	94
11.3.2	Science Values.....	94
11.3.3	Questionable Research Practices (QRPs)	95
11.3.4	Full Questionnaire.....	97
11.4	Appendix IV. Survey Distribution	98
11.4.1	Prenotification	98
11.4.2	Invitation	98
11.4.3	First reminder	98
11.4.4	Second reminder.....	99
11.4.5	Final reminder.....	99
11.5	Appendix V. Data tables	111

List of Figures



Figure 3.2 QRPs admitted by field.....	35
Figure 3.3 QRPs admitted by career stage	36
Figure 3.4 QRPs admitted by sex	37
Figure 4.1 Percentage aware of a written statement on RI by field, by career stage, and by country group.....	43
Figure 4.2 Percentage aware of organisational written statement on RI, by country.....	44
Figure 4.3 How organisational statement on research integrity is communicated, by geo-political unit.....	45
Figure 4.4 Perception of alignment of working environment to high RI standards, broken down by geo-political unit and by topic.	46
Figure 4.5 Perception of alignment of working environment to high RI standards, broken down by career stage and by topic.	48
Figure 4.6 Awareness of organisational policies by geo-political unit	49
Figure 4.7 Awareness of organisational policies by career stage.....	50
Figure 4.8 Perception of effectiveness of organisational policies, by geo-political unit.....	52
Figure 4.9 Perception of effectiveness of organisational policies, by career stage	53
Figure 4.10 Importance of research integrity area for ensuring high quality research, by geo-political unit.....	55
Figure 4.11 Importance of research integrity area for ensuring high quality research, by career stage.....	56
Figure 4.12 Confidence in organisation to ensure high level of research integrity, by field, by career stage and by geo-political unit	57
Figure 4.13 Confidence in organisation to ensure high level of research integrity by country	58
Figure 5.1 Frequencies of research integrity locus of responsibility, by field, by career stage and by geo-political unit	61
Figure 5.2 Frequencies of locus of responsibility for RI, by country	62
Figure 5.3 Frequencies of "research integrity as box-ticking exercises" by field, by career stage and by geo-political unit.....	63
Figure 5.4 Frequencies of "research integrity as box-ticking exercise", by country	64
Figure 5.5 Frequencies for "RI policies improve my research" by field, by career stage, and by geo-political unit	65

Figure 5.6 Frequencies for "RI policies improve my research" by country.....	66
Figure 5.7 Positivity towards RI training according to form of training.....	66
Figure 6.1 Motivational pull of different outcomes of research integrity procedures: full sample, mean scores	69
Figure 6.2 Motivational pull of different outcomes of research integrity procedures, by field	70
Figure 6.3 Motivational pull of different outcomes of research integrity procedures, by career stage.....	71
Figure 6.4 Motivational pull of different outcomes of research integrity procedures, by contract.....	72
Figure 6.5 Motivational pull of different outcomes of research integrity procedures, by sex	73
Figure 6.6 Motivational pull of different outcomes of research integrity procedures, by geo-political group.....	74
Figure 7.1: The extent to which respondents identify with diverse collectives as a researcher, by disciplinary fields.....	77
Figure 7.2 The extent to which researchers identify with each item, by career stage	78
Figure 7.3 The extent to which researchers identify with each item, by geo-political unit	79
Figure 7.4 The percentage of respondents valuing the opinion of different actors by disciplinary fields.	80
Figure 7.5 The percentage of respondents valuing the opinion of different actors about their own research by career stage.....	81
Figure 7.6 The proportion of respondents indicating to receive at least some information regarding research integrity from a specific source by disciplinary fields.....	83
Figure 7.7 The proportion of respondents indicating to receive at least some information regarding research integrity from a specific source by career stage.	84

List of Tables

Table 1 Country of Employment	22
Table 2 Main field of study	24
Table 3 Field of study in phd	26
Table 4 Current field of study by main field of study in which doctoral training occurred (grouped).....	28
Table 5 Time since doctoral training	29
Table 6 Employment conditions	30
Table 7 Career stage	30
Table 8 Respondent sex.....	31
Table 9 Level of fluency in English	31
Table 10 Percentage of respondents admitting each QRP, by country.....	37

Executive summary

This report presents the main results from the International Research Integrity Survey (IRIS), which was carried out in the context of Work Package 6 of the Standard Operating Procedures for Research Integrity (SOPs4RI) project.

The main objective of IRIS was to examine the perceived need for organizational research integrity policies and procedures among researchers. The SOPs4RI project is collating a broad range of tools and resources that research performing and funding organisations may use when developing and implementing research integrity promotion plans, and IRIS contributes to assessing the relevance of these tools as well as the overall perceptions related to mechanisms for promoting research integrity. The survey study covers researchers from 34 countries (EU, EFTA, and selected OECD countries) and all main areas of science. Following exclusion criteria specified in the chapter on methodology, 65,764 researchers out of the 73,757 who responded to the survey were retained for the analyses presented in this report.

To set the context, IRIS provides an overview of researchers' reported engagement in research practices that may be considered questionable or detrimental to the quality of research across countries and research areas, in order to establish a sense of the scope of the problem, and in turn the need for organisational efforts to actively mitigate. Results show non-trivial levels of self-reported participation in questionable research practices with some variation across countries and research areas.

Next, IRIS explores researchers' perception of existing organisational policies and mechanisms to support research integrity. In earlier phases of the SOPs4RI project, interviews, Delphi surveys, and focus group studies found firm consensus on nine important topical areas that research performing organisations should deal with to promote research integrity: research environment, supervision and mentoring, research integrity training, data management, ethics structures, breaches to research integrity, collaboration, declaration of interests, and publication and communication. For each area, IRIS examines the extent to which researchers across countries, fields, and career stages consider these areas adequately handled within their own organisations. Results demonstrate that

a significant proportion of researchers are not aware of an overall research integrity statement within their organisations and shows considerable differences across countries. Awareness of organisational policies across the specific topical areas differs significantly. Researchers from EU countries were generally less aware of specific policies than researchers from the non-EU countries covered by the study. Overall, three out of four researchers have at least some confidence in the ability of their organisations to ensure research integrity.

In terms of attitudes to research integrity policies, about two-thirds of researchers feel that organisations have a valid role in overseeing the integrity of their research. Results also show significant differences across research areas and career levels, with early career researchers and researchers from the medical sciences being most in favour of organisational oversight. A majority of researchers believe that research integrity policies can at least sometimes improve research; however, a majority also finds that such policies may at least sometimes be box-ticking exercises.

IRIS shows that researchers receive information about research integrity from multiple sources, and that they tend to identify most closely with the collectives of researchers that they are epistemically or institutionally close to. These results can be taken into account when deciding on efficient ways of sharing knowledge and information about research integrity issues and when implementing policies and procedures to promote research integrity. Finally, IRIS demonstrates that the intrinsic values attached to more reliable science, greater trust of colleagues and personal reputation, are core to understanding researchers' commitment to research integrity procedures, while prospects of, e.g., higher salary or promotion are of less importance in relation to fostering responsible conduct of research.

1. Introduction

1.1 Abbreviations

Below we present a list of abbreviations that will be used in this report:

RI – Research Integrity

SOP – Standard operating procedure

RPO – Research performing organisation

RFO – Research funding organisation

RIPP – Research Integrity Promotion Plan

ECoC – European Code of Conduct

CBA – Cost Benefit Analysis

DPO – Data Protection Officer

WP – Work Package

QRP – Questionable Research Practice

AAPOR – American Association for Public Opinion Research

1.2 Terminology

Below we present a glossary of the terms that are going to be utilized in this report:

Code: a document guiding the members of an organisation on ethical standards and how to achieve them. Ethics/integrity codes are formal documents sending a message about moral standards guiding professional behaviour by providing principles, values, standards, or rules of behaviour.

Guideline: a statement of principles or issues to consider when performing a task, aimed to guide courses of action. Guidelines give direction and help users make decisions. They are often created based on the consensus of experts after detailed evaluation and assessment of available evidence. They may include checklists.

Standard Operating Procedure (SOP): a detailed, written instruction, aimed to achieve uniform action step-by-step. SOPs prescribe specific actions; they liberate users from decision-taking by ensuring that the procedure is followed. They may come in the shape of a 'decision-tree'/flow-diagram, similar to what is referred to as an algorithm in clinical contexts.

Toolbox: a structured collection of easy-to-use SOPs and guidelines that RPOs and RFOs can use when developing their own Research Integrity Promotion Plans.

Research Integrity Promotion Plan (RIPP): a document describing how a specific institution will ensure, foster and promote responsible research practices, avoid detrimental practices, and handle misconduct. It is the intention that RPOs and RFOs should form their own RIPPs in order for them to take disciplinary, organisational and national differences into account.

1.3 About SOPs4RI

SOPs4RI (Standard Operating Procedures for Research Integrity) is a four-year (2019-2022), multi-partner transdisciplinary project funded by the European Commission (H2020-SwafS-03-2018, Grant Agreement no. 824481). The project has 13 partners in 10 European countries, and is coordinated by Aarhus University (AU). The project's homepage can be found here: <https://www.sops4ri.eu/>. SOPs4RI has also been preregistered on the Open Science Framework: <https://osf.io/49fbk/>

Objectives

The Standard Operating Procedures for Research Integrity (SOPs4RI) project aims to contribute to the promotion of excellent research and a strong research integrity culture aligned with the principles and norms of the European Code of Conduct for Research Integrity. The overall objective is to create a toolbox to support and guide research performing organisations (RPOs) and research funding organisations (RFOs) in fostering research integrity and consequently preventing, detecting and handling research misconduct and questionable research practices (QRPs). The project focuses on providing Standard Operating Procedures (SOPs) and guidelines that enable RPOs and RFOs to create and implement Research Integrity Promotion Plans (RIPPs). SOPs4RI will thus stimulate European organisations involved in performing and funding research to foster responsible conduct of research through organizational measures and policies. SOPs4RI takes a mixed-method, co-creative approach to the identification, development and empirical validation of SOPs and guidelines. The expected end-users of the tools provided by SOPs4RI are decision makers within RPOs and RFOs, e.g. university senior management (vice chancellors, deans, heads of administration), university academic councils, boards and directors of funding agencies, and their extended administrations. The identification, modification and development of SOPs and guidelines will take national, disciplinary, and organisational differences into account, and the final toolbox will enable RFOs and RPOs to create RIPPs in accordance with the needs of their organisation.

1.4 About this deliverable

Deliverable 6.2 reports the most important findings from the International Research Integrity Survey (IRIS), conducted as part of the SOPs4RI project. The goal of IRIS is to examine across countries, research areas, and career stages the perceived need for organisational research integrity policies and procedures among researchers. Like previous surveys on research integrity, IRIS does look into patterns of self-reported participation in questionable research practices, but the core ambition of

IRIS is to examine researchers' perceptions of and attitudes towards organisational mechanisms promoting research integrity. Are researchers aware of existing policies and procedures? In what areas would organisational mechanisms be considered useful and relevant? How could policy measures for research integrity be communicated and implemented, and what would motivate researchers to act in accordance with principles and policies for research integrity? Such questions are important to explore as a context for designing, developing, implementing, and maintaining research integrity promotion plans within universities and other research performing organisations.

The protocol for this survey was developed and reported as Deliverable 6.1 of the SOPs4RI project. It can be accessed at the project website and on the Open Science Framework. Here, we report the main findings of IRIS. Chapters 1 and 2 present the methodology and the sample composition. Chapter 3 provides an overview of levels of self-reported participation in questionable research practices, and Chapter 4 outlines researcher perceptions of the effectiveness of current research integrity policies. Against this backdrop, the need for research integrity policies is examined in the following chapters. Chapter 5 reports findings on researcher attitudes to research integrity. Chapter 6 deals with researchers' identification with various collectives in the context of communication and information flow about research integrity. And Chapter 7 finally presents results on researcher motivations to adhere to research integrity principles and policies.

The scope and coverage of IRIS allow for comparisons across countries, research areas, and career levels, and several of the findings in this report are broken down according to these dimensions. Knowledge about differences and similarities across countries, research areas, and career levels can hopefully enable organisations to better tailor research integrity promotion plans that fit the needs.

2. Methodology

2.1 Sampling

The study population of interest was originally planned to be active researchers in the humanities, social sciences, natural sciences (including technical science), and medical sciences (including biomedicine), who hold a doctoral level degree and produce research for commercial or academic institutions within the EU, U.K., Canada, Australia and the US. We decided additionally to include Norway, Iceland, Lichtenstein and Switzerland as European Free Trade Area (EFTA) members and to include researchers who held at least a master's level degree.

2.1.1 Sampling frame

Our sampling frame was the Clarivate Web of Science bibliographic database, which contains details of publications produced by researchers in 21,894 scientific journals, books and conference proceedings (Matthews 2021).

The sample was constructed from a background population of academics, identified in the bibliographic database, Web of Science (WoS). WoS contains article metadata for more than a million research articles annually. From these records we extracted information on author names, affiliations and e-mail addresses, for all articles published in the period 2016-2020, where at least one author had an affiliation to an institution in one of the sample countries. We downloaded 8,159,772 metadata records and retrieved 3,929,283 e-mail addresses. Of these 3,072,372 were from our countries of interest.

E-mail addresses and author names are not directly linked in Web of Science metadata records. We therefore calculated i) the frequency of co-occurring name and e-mail pairs and ii) the resemblance between author names and the part of the e-mail address before the '@', taking into account initials and abbreviated names (e.g. 'js' for 'Jane Smith'). We further corrected the sample for frequent spelling mistakes or text-recognition errors (for example, '.com' was recognized as '.corn'). Finally, we searched the e-mail addresses for near-duplicates, which we manually checked to identify clear cases of errors. Using this approach, we created 3,759,814 author profiles with e-mail address.

The resemblance between author names and the e-mail address was also used to provide a likelihood measure of the correctness of name-email pairs.

2.1.2 Sample design

Our objective was to obtain a sample that was both representative of the WoS population and contained sufficient numbers of observations within all countries and fields to enable robust comparisons to be made. To accomplish this, we generated a systematic sample with unequal selection probabilities with explicit and implicit stratification. We aimed to increase the precision of comparisons across 4 scientific fields by each country combinations through aiming for a similar effective

sample size within each such combination. This naturally led to an unequal selection probability sample design with lower selection probabilities in those field-country combinations that have larger number of publications in WoS. The explicit stratification categories include fully crossed country by scientific field (natural, medical, social sciences and humanities) combinations. Within each such stratum a systematic sample was drawn additionally using implicit stratification by a more granular indicator of scientific field and an indicator of the number of papers published by each author.

The exceptions to this procedure include those countries, or fields within some countries, where the total number of authors was smaller than that required to achieve the planned effective sample size. In such situations all authors were included in the sample. (Full list of countries in Appendix I)

2.2 Survey Development

The survey rationale was developed and agreed in consultation with project partners as detailed in protocol document D6.1, submitted in November 2020. The survey was to include sections covering: structural or demographic variables; values, beliefs and attitudes in relation to science practices, research integrity policies and the role of organisations in implementing them; the current research integrity landscape, including awareness of and satisfaction with current research integrity arrangements; personal efficacy and behaviour; and receptivity towards research integrity policies including specific examples of standard operating procedures.

Survey questions to meet the agreed rationale were developed between November 2020 and April 2021 by the team at University of Essex (UoE), guided by topic experts within the group of project partners. Most questions were written by the team but in two sections of the survey covering science values and questionable research practices, questions were modified from other surveys (details in APPENDIX).

The survey included two randomised experiments. The first was to test whether there was any difference in reported willingness to attend training when using the word “training” or “masterclass” to describe the training session, and to test whether or not being invited or required to attend the training would affect hypothetical willingness to attend it. Participants were randomly assigned to one of four groups, mandatory training, mandatory masterclass, voluntary training and voluntary masterclass.

The second experiment randomly assigned respondents from 10 countries to receive the response options for the questions relating to questionable research practices in either English or their assumed native language as identified from the question about where they had spent their childhood. This experiment was designed to test whether there was any difference in responses when given in English or in native language.

2.3 Cognitive testing

Eight cognitive interviews were carried out during the two-week period from 22/2/21-5/3/21. These interviews were intended to serve as a sense check, confirming the usability of the survey and ensuring that key terms were understood. The interviews were conducted by project partners using Microsoft Teams due to covid restrictions. Participants were from the social, natural and medical sciences and humanities. Participants were French Canadian, Portuguese, Greek, Italian, Belgian and Dutch and currently working in Portugal, United Kingdom, Belgium, Denmark and Greece. The interviews, which were conducted both in English and in non-English where that was the mother tongue of both interviewer and interviewee, included junior and senior researchers.

2.4 Pilot testing

Following the cognitive testing, a simple random sample of 5000 email addresses were selected from the sampling frame of 3.2 million email addresses for a pilot study which ran from 21st April to 12th May 2021. 300 responses were generated from 5000 emails, at a rate of 6 percent although approximately 14 percent of emails were not delivered. Of those who had a chance to receive the email, 7 percent responded.

Several experiments to test the impact of using different communication methods on survey participation were included at the pilot stage.

The final version of the questionnaire can be found in Appendix III.

2.5 Field operations

The survey was conducted entirely online, in English, using the Qualtrics platform, both to design and distribute the survey using its mailing options. In total 4,325,827 emails were sent to our selected sample of 908,870 email addresses, in 46 batches, across 5 stages, 12.8 percent of which bounced (555,778) according to the survey software, during the period 22nd June – 28th July 2021.

All communication was individually addressed as far as possible due to the increased response rate using personal invitation during the pilot study. Those with a more reliable prediction of first and last names in the dataset were addressed by both in the prenotification and invitation stages. Those with only a last name were addressed as Dear Dr. Lastname. Those with a no name, were addressed Dear Colleague.

A prenotification email was sent to the full sample of 908,870 researcher email addresses in 10 batches between 22nd and 29th June 21 informing recipients that they would be receiving an invitation to take part in the study. It included links to information about the project, the funding organisation, and a contact for the study.

The invitation to the survey was sent using the Qualtrics survey platform mailing facility between 29th June and 5th July. The invitation included information about the project and funder, with links

to the survey and to opt out from further communication. In addition, it included information about how the individual had been selected, the scope and purpose of the research for which personal data about them would be collected, how their personal data would be used, who would have access to it, the benefits of participation, and their right to withdraw at any time, including instructions on how to do so.

We sent a further 3 reminders about the survey between 9th and 28th July to researchers who had not yet taken the survey or opted out. Additional responses were not encouraged beyond the final reminder on 28th July. The survey remained open for a further month and was officially closed on 14th September.

Further details about the survey development and distribution can be found in Appendix IV.

2.6 Survey Response

73,757 people responded to the survey. Of these 1,602 were ineligible due to their country of employment being outside our specified countries. A further 6,391 were excluded as they completed less than 25 percent of the survey which gave no information beyond demographics. Lastly, those who did not state they were trained to at least master's level were removed. A remaining 64,074 cases were retained for the analysis. The overall response rate, computed using the American Association for Public Opinion Research's standard definitions, was 7.2 percent (Response Rate 2) (AAPOR 2016).

2.7 Weighting

We computed weights that we apply in our analyses to correct for the unequal selection probabilities of cases inherent in the sample design and for biases caused by differential non-response. Not all the authors in WoS had the same initial probability of selection, depending on the sizes of the WoS sub-populations used in the stratified design. We aimed to gather 500 responses in each scientific field in each country. Hence those authors in smaller countries that had few authors in WoS had a higher probability of selection than those in countries that had much greater representation. The weighting reflects these relative selection probabilities.

Certain subgroups in a population may be more likely to respond to a survey than others. These groups can end up over represented in the sample, which can bias the survey estimates. We used the information about our WoS authors that we included in the sample design to estimate the overall probability of responding. We modelled this using logistic regression. A binary variable that indicated whether a sample member provided a usable response to the survey (ie answered more than 25 percent of the questions) was specified as the dependent variable. The independent variables were country, field, country x field, number of papers and granular subfield. The model therefore takes into account simultaneously the unequal selection probabilities and the differential non-response propensity. The weight variable we derive from estimating this model this was computed

as the inverse of the predicted response probability for each respondent, normalised so that the final weighted sample size matched the unweighted sample size.

2.8 Data storage/ availability

Data was downloaded from Qualtrics on closing the survey 14.09.21. Identifying information (such as names and email addresses) has been removed from this master version of the data. A separate dataset containing the sampling ID, the ID generated when taking the survey and email address can be used with the de-identified dataset to identify respondents. Both datasets are held securely and accessible only to WP6. Following redactions of identifying variables, including collapsing certain categories and considering combinations of potentially identifying variables, an open access version of this data will be available on OSF and through the UK Data Archive. A safeguarded deidentified version of the data which has retained individual country and granular field data will be archived and managed by UK Data Archive.

2.9 Ethical considerations

Ethical approval for conducting the survey was obtained from the University of Essex Faculty of Social Sciences Ethics Committee (ETH2021-0441). The approval document can be found on OSF: <https://osf.io/xb9rk/>.

3. Sample Composition

3.1 Country of employment

Our sample design aimed at recruiting 500 researchers in each of the four main fields in each of the target countries, where possible. This would yield a total of 2000 respondents per country. In some cases, as mentioned previously, this was never going to be possible as there were too few author records in WoS associated with some of the smaller countries.

Table 1 Country of Employment

country	n	p_raw	p_weighted
Australia	2228	3.48	3.82
Austria	1830	2.86	1.13
Belgium	1987	3.10	1.31
Bulgaria	755	1.18	0.33
Canada	2800	4.37	4.80
Croatia	1526	2.38	0.54
Cyprus	321	0.50	0.12
Czechia	1867	2.91	1.22
Denmark	2224	3.47	1.13
Estonia	394	0.61	0.18
Finland	1951	3.04	1.05
France	2516	3.93	5.93
Germany	3085	4.81	8.71
Greece	2269	3.54	1.11
Hungary	1248	1.95	0.64
Iceland	104	0.16	0.11
Ireland	1248	1.95	0.62
Italy	4303	6.72	6.11

country	n	p_raw	p_weighted
Latvia	351	0.55	0.15
Lithuania	605	0.94	0.29
Luxembourg	183	0.29	0.10
Malta	141	0.22	0.04
Netherlands	2729	4.26	2.65
Norway	1342	2.09	0.57
Poland	2206	3.44	3.10
Portugal	4397	6.86	1.47
Romania	2645	4.13	1.20
Slovakia	819	1.28	0.51
Slovenia	713	1.11	0.30
Spain	4053	6.33	5.58
Sweden	2773	4.33	1.75
Switzerland	1851	2.89	1.11
UK	3701	5.78	8.30
USA	2909	4.54	34.02
Total	64074	100	100

notes: Unweighted n, both weighted and unweighted percentages

Table 1 shows the unweighted number of respondents from each in-scope country, the unweighted percentage of the whole sample and the weighted percentages. The latter calibrates the percentages to match the proportions in WoS, which we can consider as the population from which our sample was drawn. Thus respondents from some countries are under-represented in the sample with respect to the population while others are over-represented. This can be seen by comparing the unweighted with the weighted percentages in the table, in which the countries are presented in order from highest to lowest unweighted n. Portugal has the highest numbers of sample members, at 4448, while Iceland has the least, with only 104.

The difference between weighted and unweighted percentages offers a measure of the degree of under or over-representation in the sample relative to the WoS population. Recall that the sample was purposely not designed with probability of selection proportional to size of country or field, but to provide sufficient cases within those categories to be able to make meaningful comparisons

between. It is not surprising, therefore, to see quite large differences between percentages calibrated to population totals and the unweighted percentages. For example, the weighted percentage for US respondents is 34 while the unweighted percentage is just over 4.5. This reflects the fact that one third of WoS records are contributed by authors based in the US. Portugal, by contrast, makes up almost 7 percent of our sample but only about 1.5 percent of the WoS population, so is down-weighted when we present results later in this report. Ten countries have fewer than 1000 researchers in our sample, while thirteen have more than 2000.

3.2 Main field of study

Table 2 shows the same information for respondents' main field in which they carry out their research.

Table 2 Main field of study

group	field	n	p_raw	p_weighted
Humanities	-	9081	14.86	5.35
	Arts (arts, history of arts, performing arts, music)	947	1.55	0.70
	History and archaeology	2638	4.32	1.49
	Languages and literature	3145	5.15	1.60
	Other humanities	1496	2.45	1.04
	Politics, ethics and religion	855	1.40	0.52
Medical	-	9554	15.63	20.04
	Basic medicine	766	1.25	1.46
	Clinical medicine	4029	6.59	8.18
	Health sciences	3537	5.79	7.67
	Medical biotechnology	282	0.46	0.81
	Other medical science	940	1.54	1.93
Natural	-	24414	39.94	55.29
	Agricultural biotechnology	152	0.25	0.39
	Agriculture, forestry, and fisheries	575	0.94	0.86

group	field	n	p_raw	p_weighted
	Animal and dairy science	191	0.31	0.28
	Biological sciences	5432	8.89	13.31
	Chemical engineering	393	0.64	0.68
	Chemical sciences	1673	2.74	3.37
	Civil engineering	786	1.29	1.53
	Computer and information sciences	2378	3.89	6.08
	Earth and related environmental sciences	2331	3.81	5.10
	Electrical engineering, electronic engineering, information engineering	1864	3.05	4.66
	Environmental biotechnology	59	0.10	0.07
	Environmental engineering	439	0.72	0.68
	Industrial biotechnology	73	0.12	0.16
	Materials engineering	660	1.08	1.48
	Mathematics	1505	2.46	3.22
	Mechanical engineering	798	1.31	1.94
	Medical engineering	265	0.43	0.55
	Nano-technology	192	0.31	0.34
	Other agricultural sciences	308	0.50	0.51
	Other engineering and technologies	864	1.41	1.61
	Other natural sciences	418	0.68	0.81
	Physical sciences	2674	4.37	6.95
	Veterinary science	384	0.63	0.70
Social	-	18074	29.57	19.32
	Economics and business	5195	8.50	4.77
	Education	2157	3.53	2.18
	Law	876	1.43	0.61
	Media and communications	778	1.27	0.62

group	field	n	p_raw	p_weighted
	Other social sciences	2113	3.46	2.87
	Political Science	1435	2.35	1.09
	Psychology and cognitive sciences	3071	5.02	4.80
	Social and economic geography	581	0.95	0.61
	Sociology	1868	3.06	1.75
Total	-	61123	100	100

notes: Unweighted n, both weighted and unweighted percentages

Natural and medical sciences are under-represented in our sample compared to WoS, while researchers from social sciences and humanities are over-represented.

Table 3 Field of study in phd

fieldgrp	phdfield	n	p_raw	p_weighted
Humanities	-	8601	16.03	5.71
	Arts (arts, history of arts, performing arts, music)	819	1.53	0.67
	History and archaeology	2401	4.47	1.59
	Languages and literature	3091	5.76	1.79
	Other humanities	1493	2.78	1.10
	Politics, ethics and religion	797	1.49	0.56
Medical	-	7145	13.32	16.57
	Basic medicine	752	1.40	1.52
	Clinical medicine	2810	5.24	6.52
	Health sciences	2632	4.90	6.44
	Medical biotechnology	195	0.36	0.45
	Other medical science	756	1.41	1.65
Natural	-	22050	41.09	57.59

fieldgrp	phdfield	n	p_raw	p_weighted
	Agricultural biotechnology	108	0.20	0.24
	Agriculture, forestry, and fisheries	467	0.87	0.73
	Animal and dairy science	168	0.31	0.29
	Biological sciences	5153	9.60	14.43
	Chemical engineering	346	0.64	0.59
	Chemical sciences	1781	3.32	4.56
	Civil engineering	681	1.27	1.56
	Computer and information sciences	1740	3.24	4.95
	Earth and related environmental sciences	2016	3.76	5.16
	Electrical engineering, electronic engineering, information engineering	1490	2.78	4.23
	Environmental biotechnology	34	0.06	0.03
	Environmental engineering	309	0.58	0.56
	Industrial biotechnology	58	0.11	0.06
	Materials engineering	516	0.96	1.26
	Mathematics	1596	2.97	3.85
	Mechanical engineering	706	1.32	2.12
	Medical engineering	175	0.33	0.44
	Nano-technology	124	0.23	0.24
	Other agricultural sciences	267	0.50	0.47
	Other engineering and technologies	761	1.42	1.50
	Other natural sciences	419	0.78	0.92
	Physical sciences	2797	5.21	8.71
	Veterinary science	338	0.63	0.68
Social	-	15865	29.57	20.13
	Economics and business	4763	8.88	4.83

fieldgrp	phdfield	n	p_raw	p_weighted
	Education	1632	3.04	2.02
	Law	758	1.41	0.64
	Media and communications	579	1.08	0.56
	Other social sciences	1856	3.46	2.97
	Political Science	1315	2.45	1.23
	Psychology and cognitive sciences	2809	5.23	5.34
	Social and economic geography	493	0.92	0.62
	Sociology	1660	3.09	1.91
Total	-	53661	100	100

notes: Unweighted n, both weighted and unweighted percentages

A similar pattern pertains in Table 4 which presents the composition of the sample in relation to the fields in which respondents' doctoral training occurred.

Table 4 Current field of study by main field of study in which doctoral training occurred (grouped)

	Humanities	Medical sciences	Natural sciences	Social sciences
Phd: Humanities	96.6	0.4	0.2	2.7
Phd: Medical sciences	0.1	88.9	0.4	0.6
Phd: Natural sciences	1.3	7.2	98.7	2.6
Phd: Social sciences	1.9	3.5	0.6	94.0
All	100	100	100	100

notes: Unweighted, column percentages

Table 4 shows the concordance between researchers' training and their main field of study now. The overwhelming majority of our sample report working now in the scientific field in which they

trained. Exemplifying this are natural scientists, 98.7 of whom trained as natural scientists. Those working in medical science now are most likely to have trained in a different field, with 7.2 percent having trained in natural science and 3.5 in a social science subject. This still leaves almost 90 percent having trained in medical science.

It is useful to see how these superordinate categories break down into subfields. We have used the typology of subfields included in the OECD Frascati Manual. Table 2 shows how each of the main four fields breaks down into subfields, along with the unweighted n, unweighted and weighted percentages. It should be noted that we made an error in the questionnaire where we inadvertently offered as one of our available subfields “politics, ethics and religion”. This should have read “philosophy, ethics and religion”, as it is listed in the Frascati Manual. It is not possible to know exactly the consequences of this for our sample composition. Certainly it may have discouraged some philosophers from participating. It may have drawn some political scientists into this category. In the remainder of this report, we restrict field comparisons to the four major categories, which reduces considerably any damage to our interpretations that this error may have introduced.

3.3 Career stage and education

Table 5 Time since doctoral training

phdyeargp	n	p_raw	p_weighted
Less than 5 years	10401	18.66	18.10
5-9 years	11112	19.94	17.42
10-14 years	9657	17.33	13.72
15-19 years	7569	13.58	11.58
20 or more years	16988	30.48	39.18
Total	55727	100	100

notes: Unweighted n, both weighted and unweighted percentages

Table 5 shows the time elapsed since researchers in our sample obtained their doctorate or equivalent qualification. There is reasonable coverage across a wide range of years. Not all sample members have a PhD or equivalent, hence the total number is 56,130. There are just under 9,000 researchers without PhDs, of which 8130 (12 percent of the total) have master's level qualifications.

Moving on to current employment conditions, a substantial majority (66 percent) are in permanent contracts with less than half that number employed on temporary contracts. Less than one in ten are self-employed or otherwise independent from an employer (Table 6).

Table 6 Employment conditions

contract	N	Percent
Permanent	42233	66.10
Temporary	17199	26.92
No employment contract (e.g. self-employed)	4456	6.97
All	63888	100

notes: Unweighted

Table 7 Career stage

stage	N	Percent
Early-career (e.g. postdoc, assistant professor, junior researcher)	22879	35.80
Mid-career (e.g. associate professor, senior researcher)	23054	36.07
Later-career (e.g. full professor, dean, director of research)	14270	22.33
Retired	3713	5.81
All	63916	100

notes: Unweighted

Table 7 shows that the sample is split evenly between early career and mid-career researchers, with 36 percent falling into each of these two categories. Later career researchers form the next highest group and respondents stating that they are now retired making up just less than 6 percent of the sample.

3.4 Other characteristics

63 percent of respondents report having supervisory duties as part of their role while 37 percent do not (not shown in a table). A relatively low number of respondents answered this question (just under 52,000) so there are over 10,000 remaining for whose supervisory status we do not know.

Around 43 percent reported being female and 56 percent male, with the remaining 1.7 percent not wishing to say.

Table 8 Respondent sex

sex	N	Percent
Female	27365	42.75
Male	35601	55.62
Prefer not to say	1045	1.63
All	64011	100

notes: Unweighted

Finally, we asked respondents to say what their level of English was. 82 percent said that they were fluent in English, with 17 percent reporting that they had intermediate levels. Those saying that they had only basic English made up less than 2 percent of our sample.

Table 9 Level of fluency in English

fluent	N	Percent
Fluent	52341	81.73
Intermediate	10665	16.65
Basic	1038	1.62
All	64044	100

notes: Unweighted

4. Questionable Research Practices

4.1 Introduction

A key aim of the SOPs4RI project is to support organisations in facilitating good research practices without causing unnecessary burden or alienation of researchers themselves. In the next chapters we report on the perceived needs of researchers, their beliefs about research integrity and policies for ensuring it, as well as organisational measures that are reported as being currently in place across countries and four key fields of study, with a view to highlighting areas of need and any potential obstacles for organisations in implementing policy.

The integrity and credibility of research in the public domain has been hampered by various well-publicised scandals within the research environment over recent years. Behind what are classed as more serious misdemeanours within academic research, fabrication, falsification and plagiarism, various perverse motivations and pressures on researchers within unsupportive working environments amongst other possible reasons have enabled or encouraged less than ideal research practices. These less than ideal research practices which do not constitute actual misconduct are problematic in that they reduce the quality of research and weaken the epistemic integrity of results while increasing research waste. Before investigating where organisations may need to provide resources to create environments conducive to high quality research, and how receptive researchers might be to research integrity requirements being addressed through organisational policy, we wanted to assess current researcher behaviours. We asked researchers to tell us how often they had engaged in 8 different research practices widely considered as questionable or detrimental in their publications over the last 3 years.

4.2 The survey question

We asked researchers:

The next few questions are about questionable research practices (QRPs). These are less than ideal research practices which might happen unintentionally. They are not research misconduct (ie fabrication, falsification, or plagiarism).

We will present you with a set of research practices and ask you to what extent you have engaged in them when working towards producing your publications over the last three years.

The eight questionable research practices (hereafter QRPs) were:

1. Wilfully failing to cite relevant publications that contradict your own beliefs, theories, hypotheses, methods or findings.
2. When reviewing a manuscript, not investing the effort necessary to conduct a thorough review.
3. Choosing not to report your findings if they could weaken or contradict your theories or hypotheses.
4. Deliberately using another researcher's unpublished idea without giving credit. For example, publishing an idea voiced by a colleague at an informal meeting without giving them credit.
5. In a publication, failing to disclose relevant personal, financial, political or intellectual conflicts of interests.
6. Including authors on a paper who had not contributed sufficiently to the work to merit authorship.
7. Inadequately supervising or mentoring junior co-workers.
8. Carrying out research without getting the required ethical approval.

Researchers could choose one of the following responses:

- Often
- Sometimes
- Rarely
- Never
- Does Not Apply

4.3 Results

We should remember when looking at the results that when asking people to admit to less than ideal behaviours we cannot be certain that we are gaining an accurate picture. Lower reporting may be due to lower frequency, greater awareness that these are less than ideal behaviours not to be admitted to, and/or less willingness to admit to them.

Figure 4.1 shows the overall percentage of occurrence for each QRP item for all survey respondents. It excludes those who reported that the particular item did not apply to their situation. On the left-hand side, you can see the percentages of those who reported they had engaged at least once (rarely, sometimes, or often) in the behaviour while producing publications over the last three years. This can be compared with the percentages on the right-hand side of those who report never having engaged in the behaviour.

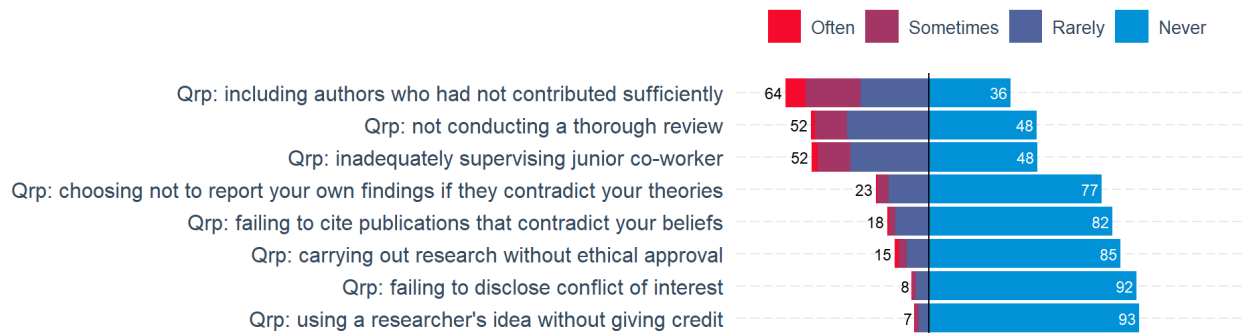


Figure 4.1 Frequency of QRPs within the last three years, all respondents excluding "does not apply"

The most frequent QRP from our list concerns publishing. Two in three respondents acknowledged that they had included authors on a paper who had not contributed sufficiently to the work to merit authorship.

More researchers admit to engaging in behaviours that perhaps seem more forgivable, more than half of researchers for example acknowledged not conducting a thorough peer review and inadequately supervising junior co-workers.

Less than one in ten said they failed to disclose a conflict of interest or used a researcher's idea without giving credit. Just over one in ten said they had carried out research without ethical approval or failed to cite publications that contradict their beliefs. Just over 1 in 5 chose not to report their own findings if they contradicted their theories.

4.3.1 Questionable research practices by field

Having looked at the frequency of admitted QRPs for all respondents, we now consider whether there are any noticeable differences between engagement in these behaviours by field. In the following graphs we just look at the percentages of those engaging at all, or not engaging, in each behaviour, where the behaviour applies.

Figure 4.2 shows the percentage of those acknowledging engaging in each questionable research practice for the four different fields of study, humanities, medical sciences, natural sciences and social sciences.

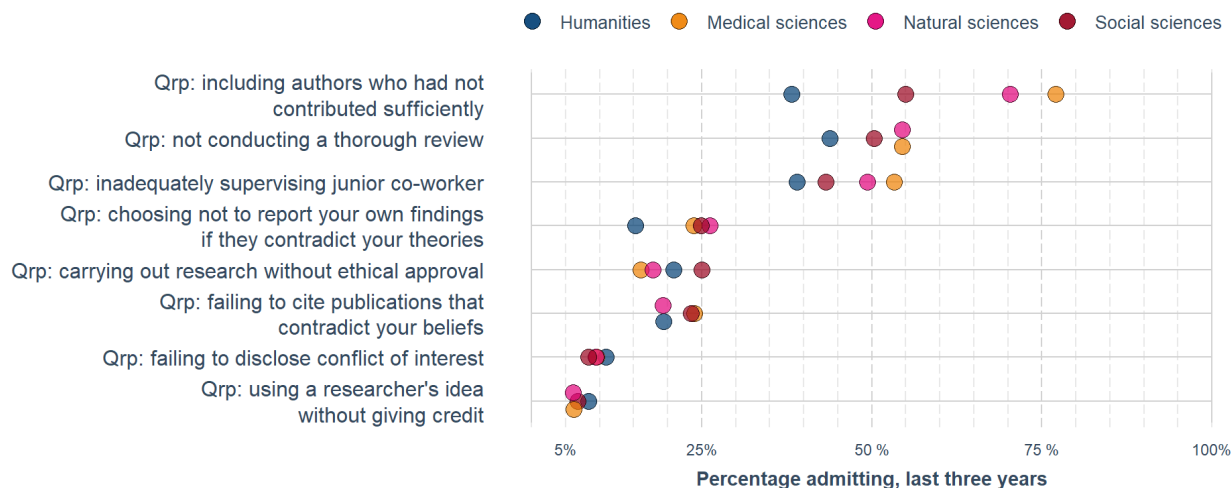


Figure 4.2 QRPs admitted by field

We can see that there is no appreciable difference between the fields of study for the QRPs that appear to be less frequent (Using a researcher's idea without giving credit and Failing to disclose conflict of interest). By contrast the most frequent QRPs (Including authors, Less than thorough review, and Inadequate supervision) show substantial variation. It is most evident for Including authors who had not contributed sufficiently, acknowledged by almost eight in ten in the medical sciences, seven in ten in the natural sciences and just under four in ten in the humanities. These figures possibly reflect disciplinary traditions governing authorship where, for example, research group leaders are included as authors on the basis of running the laboratory and securing funding without a contribution to specific research projects. In addition, the average number of authors tends to be higher, allowing for greater opportunity for those who have not contributed significantly to be included.

Another striking finding is that one in two active researchers in the natural, medical and social sciences admit to not conducting thorough reviews of manuscripts. To put this into context, journal editors often rely on three reviews of submitted article. If, on occasions, between one and two of these reviews are superficial the integrity of the body of knowledge is open to question. Finally, one in two respondents in the medical and natural sciences admit to inadequate supervision of junior co-workers.

4.3.2 Questionable Research Practices by Career Stage

In Figure 4.3 we present the percentages of researchers acknowledging that they have engaged in questionable research practices over the last three years, by career stage.

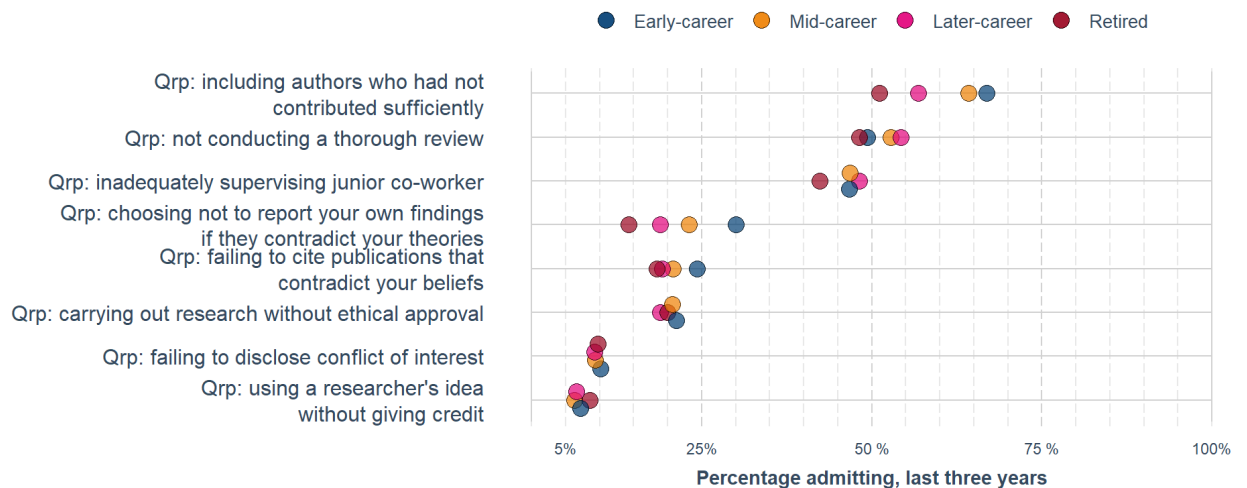


Figure 4.3 QRPs admitted by career stage

While there are not great differences for most of the QRPs, two stand out as having greater variability across the career stages. Early and mid-career respondents are more likely to report that researchers who have not contributed sufficiently to their publications have been included as authors. Those in their early career are more likely to not report their research findings if they contradict their theories.

4.3.3 Questionable Research Practices by Sex

Next, we consider any difference in the prevalence of engagement in QRPs by sex. While responses show similar frequency of admission across QRPS for both sexes and those who preferred not to say, men report slightly more often that they did not conduct a thorough peer review and carried out research without ethical approval than women.

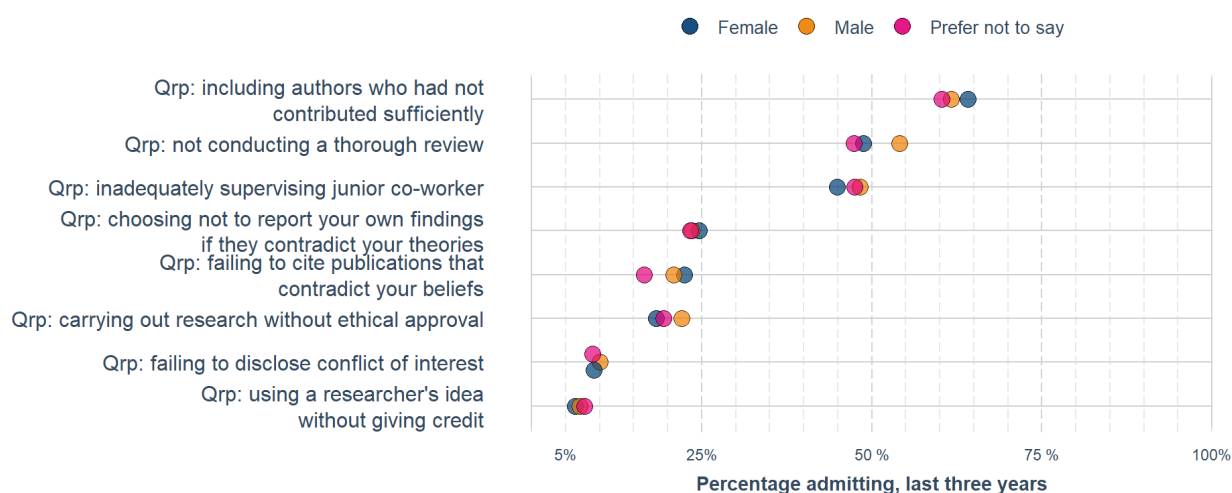


Figure 4.4 QRPs admitted by sex

4.3.4 Questionable Research Practices by Country

Table 10 Percentage of respondents admitting each QRP, by country

	Including authors who had not contributed sufficiently	Not conducting a thorough review	Inadequately supervising junior co-worker	Choosing not to report your own findings if they contradict your theories	Failing to cite publications that contradict your beliefs	Carrying out research without ethical approval	Failing to disclose conflict of interest	Using a researcher's idea without giving credit	Mean QRP
Greece	76	57	53	31	28	26	18	8	2.74
Cyprus	66	58	51	29	28	22	15	8	2.5
Spain	67	57	44	25	27	26	16	8	2.48
Slovakia	63	51	54	30	28	29	18	13	2.46
Italy	66	58	47	28	24	26	11	6	2.42
Belgium	74	52	53	27	20	22	8	7	2.41
Lithuania	63	53	52	34	30	28	14	11	2.39
Czechia	62	53	54	32	22	18	12	10	2.38
Estonia	63	54	50	28	23	25	13	7	2.37
Luxembourg	74	59	43	26	20	22	6	8	2.36
Croatia	65	52	46	27	25	23	16	8	2.36

	Including authors who had not contributed sufficiently	Not conducting a thorough review	Inadequately supervising junior co-worker	Choosing not to report your own findings if they contradict your theories	Failing to cite publications that contradict your beliefs	Carrying out research without ethical approval	Failing to disclose conflict of interest	Using a researcher's idea without giving credit	Mean QRP
Latvia	64	54	53	31	31	18	16	7	2.36
Finland	61	58	57	25	23	14	10	10	2.35
Switzerland	70	57	47	27	20	16	7	6	2.34
Portugal	70	53	41	23	24	25	10	4	2.33
Bulgaria	66	48	44	28	30	26	22	9	2.32
Austria	68	53	47	29	17	20	10	5	2.28
Germany	62	53	49	29	21	24	9	8	2.28
Slovenia	70	51	45	19	18	22	13	10	2.24
Romania	65	47	48	25	26	26	15	7	2.21
Norway	66	57	51	18	16	15	5	6	2.18
Denmark	64	55	49	18	18	16	7	4	2.14
France	64	46	38	23	22	28	8	7	2.13
Hungary	64	47	43	25	21	22	11	6	2.11
Netherlands	60	48	45	23	18	24	7	6	2.11
Malta	61	55	38	22	17	23	10	6	2.1
Poland	51	50	45	25	22	19	9	8	2.03
Australia	59	48	46	19	20	13	6	6	1.99
Sweden	57	52	43	19	19	15	6	5	1.96
Iceland	61	48	54	13	12	15	3	4	1.91
Ireland	57	49	42	18	16	13	4	5	1.88
Canada	51	45	47	20	18	13	6	6	1.82
USA	49	46	53	20	18	13	6	7	1.79
UK	53	48	43	19	16	15	5	7	1.78

notes: weighted percentages, "does not apply" dropped

Table 10 shows the percentages of respondents in each country acknowledging the eight QRPs. The countries are ranked by the mean number of QRPs admitted per respondent in each country. These means are shown in the right-most column of the table. . A consistent ‘virtuous’ pattern of responses is seen in the UK, USA, Canada, Ireland, Sweden and Australia. Respondents in these countries report fewer QRPs than others. Countries reporting more QRPs include Greece, Cyprus, Spain, Slovakia, Belgium and Lithuania. Between these two groupings are countries from Northern, Eastern, Southern and Western Europe. Explaining why conducting research without ethical approval is reported by one in four respondents from Greece, Spain, Slovakia, Italy, Lithuania, Estonia, Portugal, Bulgaria and France is beyond the scope of this research. It is, however, a signal to the competent authorities in those countries to press the case for effective research ethics procedures. The same logic applies to the other QRPs. It should be noted, however, that the rank ordering of most to least commonly reported QRPs is very similar in each country. This implies that there are substantial commonalities in the way in which researchers’ behaviour is structured across all countries surveyed.

4.4 Conclusion

85 percent of researchers acknowledged engaging in at least one questionable research practice during their publications over the last 3 years.

Of our 8 example items, most frequent were:

- Including authors on a paper who had not contributed sufficiently to the work to merit authorship
- When reviewing a manuscript, not investing the effort necessary to conduct a thorough review.
- Inadequately supervising or mentoring junior co-workers.

Least frequent were:

- In a publication, failing to disclose relevant personal, financial, political or intellectual conflicts of interests.
- Deliberately using another researcher’s unpublished idea without giving credit. For example, publishing an idea voiced by a colleague at an informal meeting without giving them credit.

There were few differences in engagement in QRPs between the sexes, disciplines, or career stage although early-career researchers were more likely to admit to not reporting their findings if they did not support their theories. There is some difference in the reported prevalence of engagement with QRPs across different countries with lower reported engagement in English-speaking countries.

5. Perceptions of current organisational effectiveness in Research Integrity

5.1 Introduction

Having now sketched a selection of questionable researcher behaviours and how they are distributed across countries and other demographics, in order to see where changes can be made, and where researchers might be most receptive to policy implementation, we wanted to first understand what measures are already in place to support research integrity across organisations. This will help us to assess potential demand for new or more policies, and to understand researcher receptivity to such policies, as well as degrees of confidence researchers have in the institution to manage these procedures. (Note that in a survey of researchers our understanding can only be about what researchers perceive to be in place rather than what actually is in place, although lack of awareness is a possible sign of the ineffectiveness of policies.)

5.2 The survey questions

The first thing we wanted to find out was whether or not a researcher's organisation has a written statement on research integrity, as a basic commitment to research integrity, and if so, how it was communicated to researchers.

We then expanded our inquiry to look more broadly at different elements of a research environment that might impact on the ability to produce high quality research. Previous research carried out by our project uncovered 9 key areas considered most important for ensuring research integrity and the highest standards of research. We drew on this research to define nine descriptions of what could be considered the ideal standards in place for each topic as detailed in the panel below:

Working environment

Collegial, and without harmful publication pressure, detrimental power imbalances or conflict.

Supervision and mentoring

Supervisors encourage responsible research practices and are selected if they meet specified criteria. Guidelines are in place for the supervision and mentoring of researchers at different career stages.

RI training

Training in research integrity is provided to all researchers, at all career stages, by qualified trainers.

Ethics structures

Dedicated and adequately trained research ethics committees are in place. Ethics reviews are relevant to various research areas and disciplines within the organisation.

Integrity breaches

Researchers can consult a qualified person in confidence with any research integrity concerns. Breaches are detected and sanctioned in a fair and standardized way, protecting both whistleblowers and those accused of misconduct.

Data management

Infrastructure is in place for storing and sharing data securely and complies with national and international regulations. Guidance on secure data management is provided.

Publication and Communication

Open access and clarity in public engagement are encouraged. Researchers are supported with publication matters such as preregistration, reproducibility, handling authorship disputes, responsible peer review practices.

Research Collaboration

Support is offered for ensuring responsible research collaboration can occur across disciplines, sectors or countries where guidelines and legislation may differ.

Declaration of interests

There is transparency and guidance in how to declare conflicts of interests in: research conduct; funding; peer review; promotion; and collaboration across sectors.

To gain a sense of the current research landscape across our countries of interest, we asked respondents to tell us how closely their working environment resembled each of the nine descriptions given above. We then wanted to understand whether researchers were aware of policies in these 9 research integrity areas which would provide a sense of where there is a greater need for policy and whether additional policies might therefore be welcome or unwelcome.

Recognising that the existence of a policy does not mean the policy is adequate, respondents who stated that they were aware of organisational policies on specific RI topics were asked how effective those policies were in achieving their objectives. We also checked that the areas our previous research had identified as being important for conducting high quality research were considered important more widely by our current respondents.

Lastly, to gain a sense of researchers' trust in their organisations, we asked researchers to tell us how much confidence they have that the management in their organisation is effective in ensuring a high level of research integrity.

5.3 Results

The following sections show the results of these seven questions about the current research environment and organisational arrangements for ensuring research integrity, considering any differences reported by field of study, career stage or country.

5.3.1 Organisational written statement on research integrity

We asked researchers if their research institution had a written statement on research integrity. Just over half of respondents (53 percent) confirmed that their organisation had a written statement on research integrity, with one in ten being certain that their organisation did not have one and the remaining respondents (37 percent) not knowing if there was a written statement or not.

Figure 5.1 shows this information for all respondents as well as by field of study, career stage and country group.

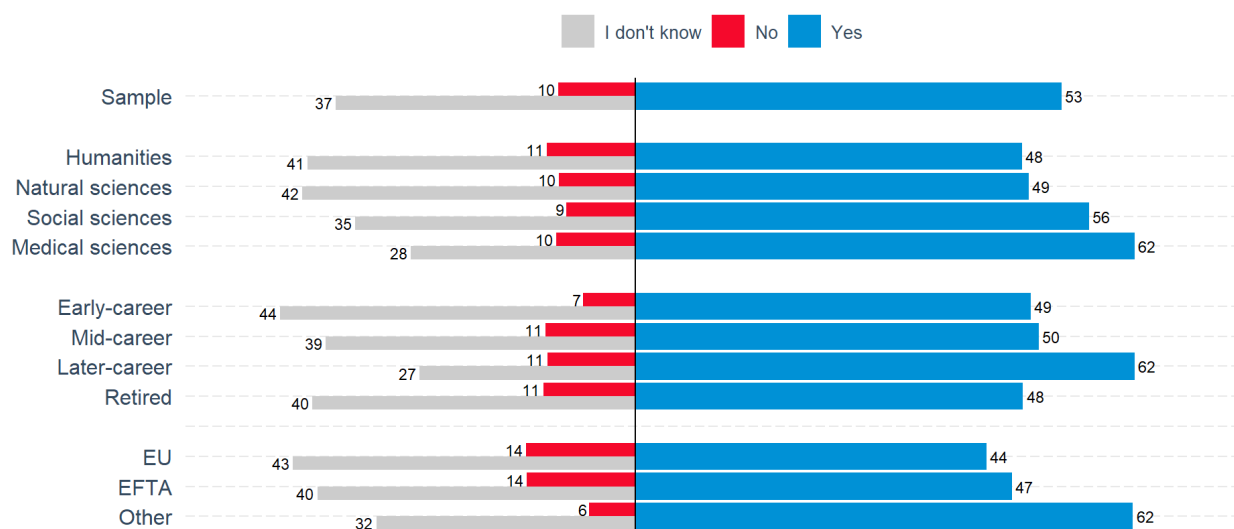


Figure 5.1 Percentage aware of a written statement on RI by field, by career stage, and by country group

Later-career researchers are more aware of the existence of an organisational statement on research integrity (62 percent compared with approximately half of researchers at other stages of their career), as are researchers in the medical and social sciences (62 and 56 percent respectively, compared with just under half of researchers in the two other field groups).

For both career stage and field of study we see similar percentages of researchers declaring that there is no integrity statement. The difference in the frequency of positive answers is thus produced by the differences in the percentage of respondents who do not know whether a statement exists or not (slightly higher for early-career researchers). Consequently, the results might reflect a lack of awareness in these groups rather than a real lack of written statements which might suggest a sub-optimal communication strategy from organisations in these cases.

It is evident that a substantially lower percentage of researchers working in EU or EFTA countries are aware of the existence of a written statement on RI, compared to researchers working in Non-EU countries of interest (including the UK). Specifically, according to our respondents, a little less than half of organisations in EU and EFTA countries provide a written statement on RI, while nearly two thirds of non-EU countries of interest provide a statement.

Figure 5.2 provides a more detailed picture by individual country, including an average for EU countries.

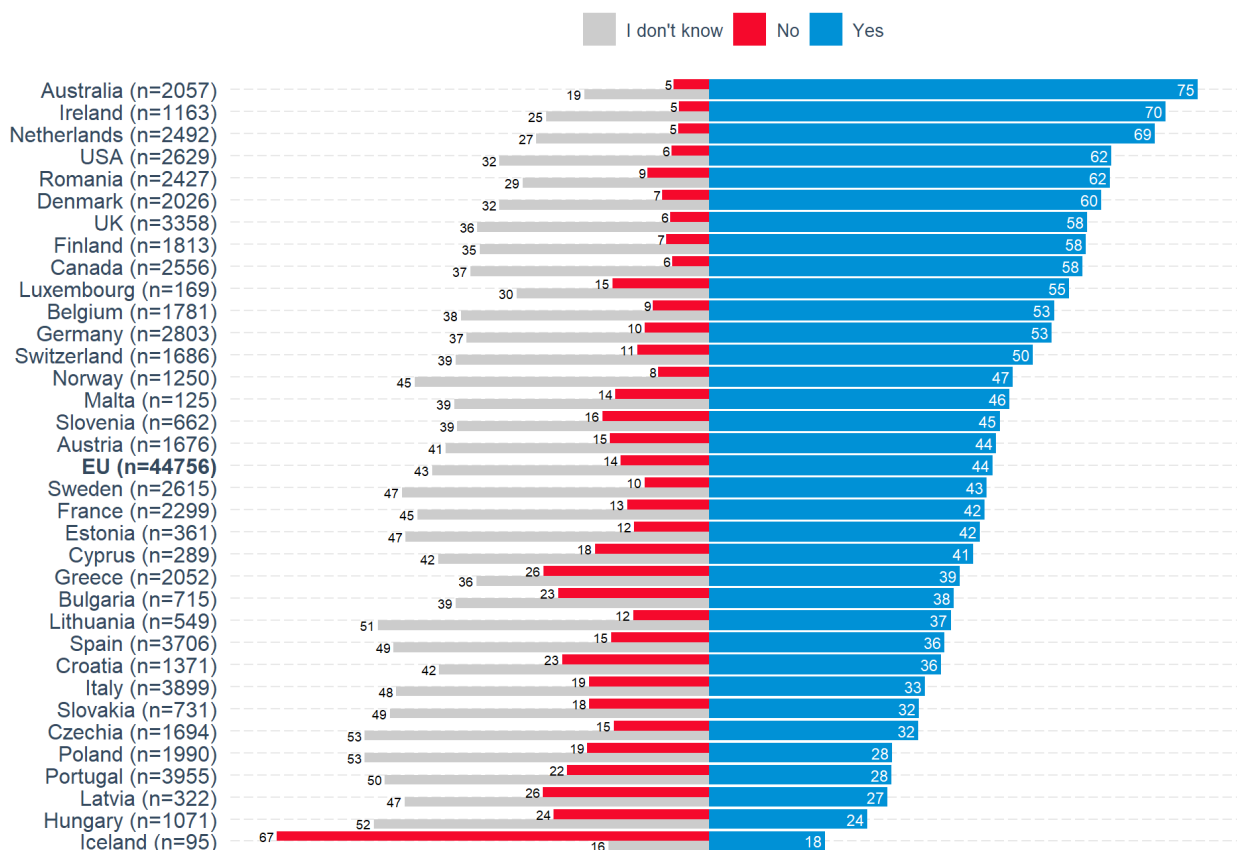


Figure 5.2 Percentage aware of organisational written statement on RI, by country

The results indicate that English-speaking and North European countries provide written statements on RI more frequently compared to Eastern and Southern European countries, which largely occupy the lower half of the graph.

5.3.2 Communication of organisational research integrity statements

We then asked researchers whose organisation does have a statement, how this was communicated to them, selecting all options that applied. Written statements on research integrity, where they exist, have been communicated predominantly via formal communication channels (approximately two-thirds of respondents). One in five researchers looked for it themselves. We also looked at whether the proportions in each communication channel varied by geo-political region. We find no substantial differences.

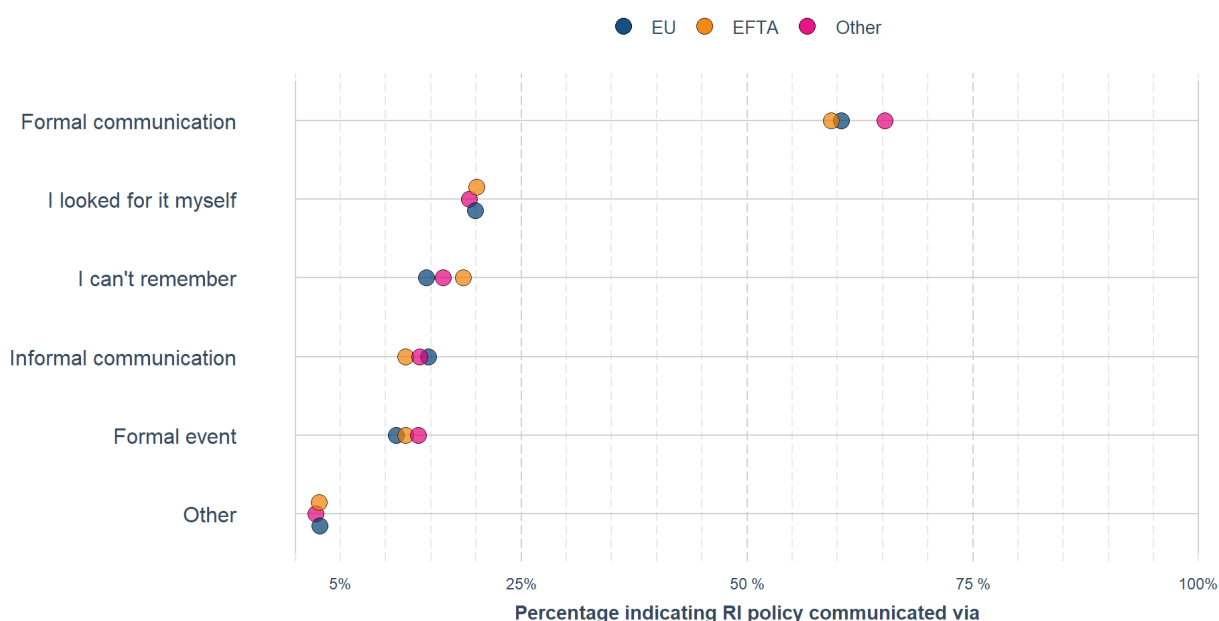


Figure 5.3 How organisational statement on research integrity is communicated, by geo-political unit

5.3.3 Resemblance of working environment to research integrity ideals

We asked researchers to tell us, for each of the nine areas such as data management, or ethics structures as detailed above, how closely their working environment resembles the descriptions set out earlier in this chapter. These describe organisational environments and policies that are close to ‘ideal-types’ for promoting responsible research practices. Reported resemblance to these ideal types show how researchers perceive their organisations. They do not necessarily imply that there are no policies or procedures in place. Nevertheless, it is important to understand how those responsible for carrying out research regard the contexts in which they are working. In the following sections we examine these perceptions broken down by country group and career stage.

5.3.4 Institutional adherence to high research integrity standards, by country group.

Figure 5.4 shows researchers’ perception of how closely their organisation resembles the 9 ideal descriptions laid out above, by country group (European Union, European Free Trade Association, and other countries of interest US, UK, Canada and Australia).

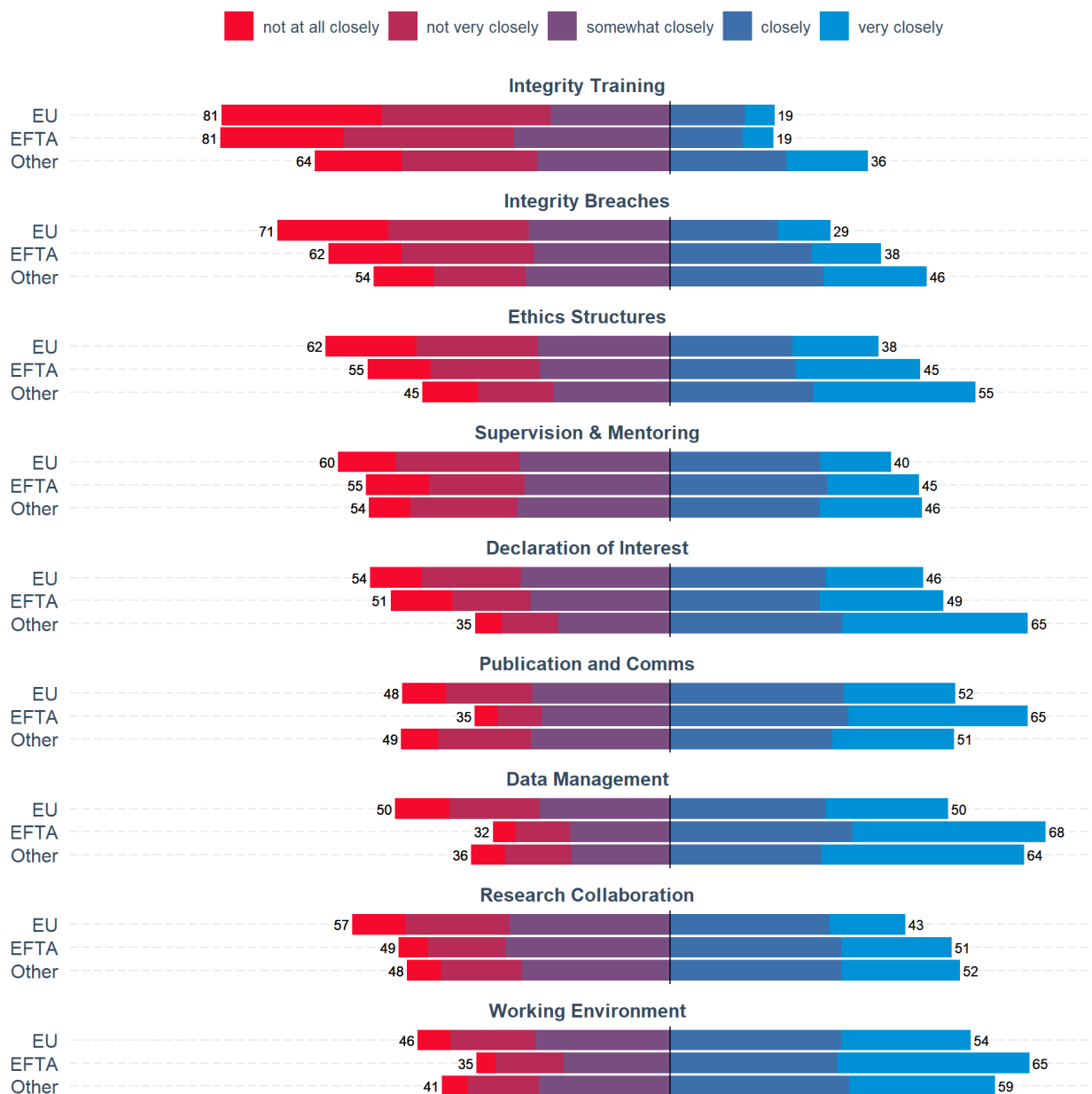


Figure 5.4 Perception of alignment of working environment to high RI standards, broken down by geo-political unit and by topic.

The black vertical line on the bars connotes what we regard as the key distinction between responses. Respondents selecting the blue categories of ‘very closely’ and ‘closely’ arguably see their organisations as relatively well-aligned with the ideal type description, whereas those choosing the red categories seem to indicate some misalignment. The majority of respondents perceived their working environment as having at least some resemblance to the high RI standards as described in

the survey for most of the topics but many of the areas are not seen by a majority as being closely or very closely resembling the ideal. For all areas there are substantial percentages of researchers who see their environments as not very or not at all closely resembling the ideal types. This is particularly the case for integrity training and integrity Breaches, where fewer respondents think that their working environment resembles the ideal even somewhat closely. This is most noticeable for researchers in the EU and EFTA. We see the greatest discrepancy/variation in cross-country group responses regarding organisational arrangements for integrity breaches, which might suggest that there are relatively large differences in how RI is safeguarded in different geo-political areas, for example how whistleblowing channels, allegation procedures, and sanctions are orchestrated or how visibly integrity safeguards were communicated within organisations.

Researchers across all three geo-political areas report a similar picture regarding their overall working environment and the arrangements in place for supervision and mentoring. Generally however, respondents from non-EU countries of interest report their organisations as living up to research integrity ideals more than the two other groups do, or at similar levels to those from EFTA countries, with two exceptions. Arrangements for adhering to high RI standards in Data Management and in Publication and Communication are reportedly strongest in EFTA countries. In almost all areas, respondents from EU countries perceived that their working environment was less close to high RI standards compared to the respondents in the other geo-political groups.

5.3.5 Institutional adherence to high research integrity standards, by career stage

Figure 5.5 shows researchers' perception of how closely their organisation resembles the 9 ideal descriptions laid out above, by career stage (early-career, mid-career, later-career or retired). Not much difference can be seen across the four different career stages in how closely researchers think their research environment matches the ideal for standards of high research integrity in five of the nine research integrity areas. We see greater variation in responses when considering availability of integrity training; procedures for handling integrity breaches; ethics structures and arrangements for supervision and mentoring. In all cases, mid-career and retired researchers have a lower opinion of the measures in place in these areas. (Or conversely, early-career and later-career researchers report more favourable comparisons between their research environment and the research integrity ideal).

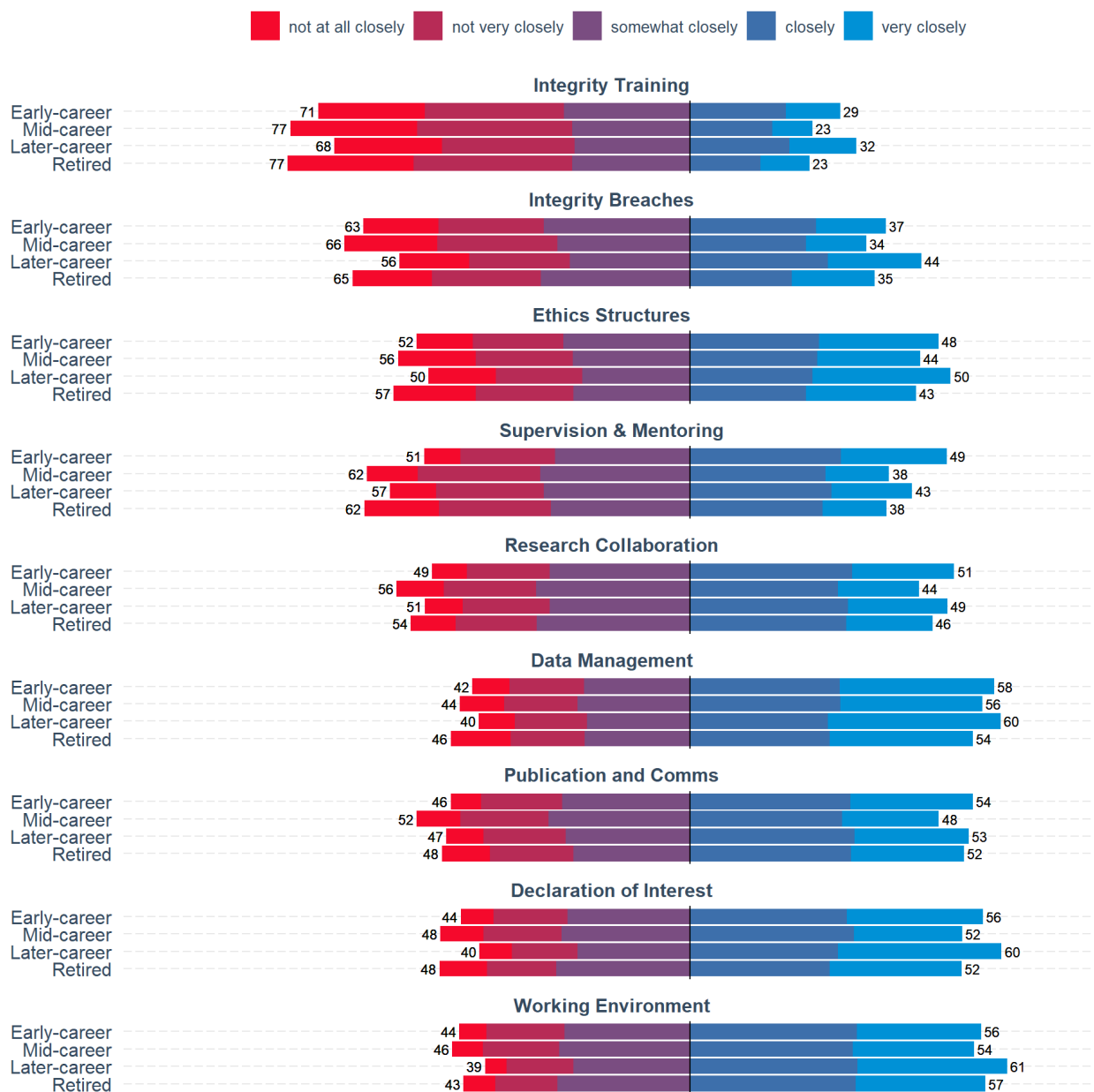


Figure 5.5 Perception of alignment of working environment to high RI standards, broken down by career stage and by topic.

5.3.6 Awareness of organisational policies

We asked researchers whether they are aware of any policies that exist within their organisation which address the 9 research integrity areas we had identified as being important for ensuring high quality research. We should note here that lack of awareness of organisational RI policies might either indicate their non-existence, or a failure of effective communication of existing policies to an organisation's members.

5.3.7 Awareness of organisational policies by geo-political country groupings

The picture painted by our respondents is that many organisations have policies in place that researchers are aware of for data management, for ethical review, and for publication and communication, but fewer have known policies for integrity training, breaches of integrity or for managing research collaboration. Awareness of organisational policies differs substantially across different topics and across different geo-political country groupings, as shown in Figure 5.6.

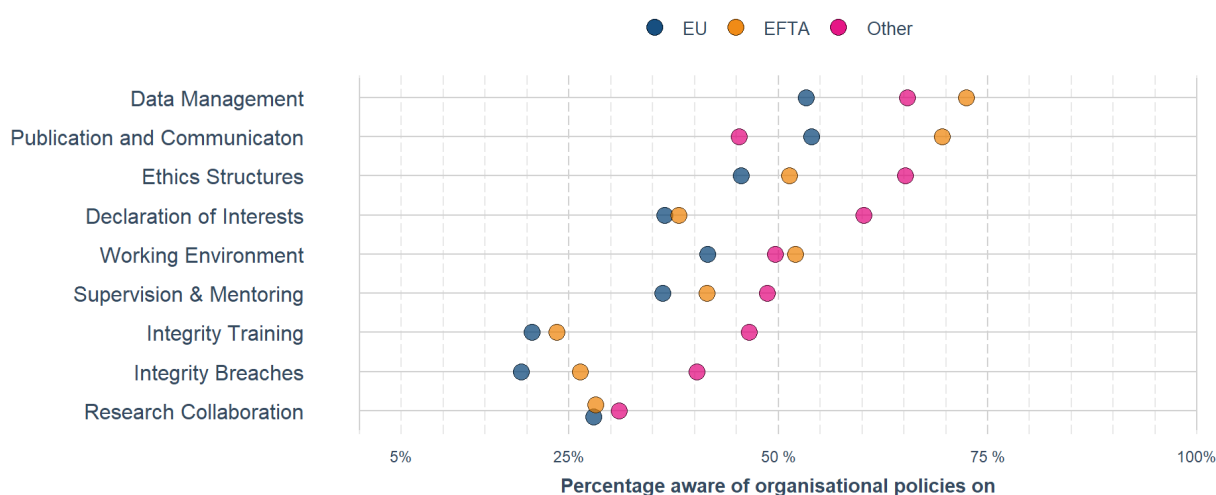


Figure 5.6 Awareness of organisational policies by geo-political unit

Overall, the results show that for almost all the topics, researchers from EU countries were less aware of the existence of policies than their counterparts in EFTA and non-EU countries of interest. For example less than 20 percent in the EU are aware of policies for integrity training or integrity breaches while the corresponding percentages in the other OECD countries are between 40 and 50 percent.

The results suggest that researchers working outside Europe (or in the UK) were more aware of organisational policies on RI related topics than researchers working in Europe (EU countries and European Free Trade Association (Non EU), not including the UK). Non-European countries stand out as having significantly more researchers aware of organisational policies for declaring interests, for integrity training and for handling breaches of integrity compared with researchers in Europe.

5.3.8 Awareness of organisational policies by career stage

The level of awareness of policies per topic across career level is more similar than seen across country groupings as seen in Figure 5.7. Later-career researchers seem more aware of organisational policies, specifically, they represent the career stage which most frequently said that they were aware of relevant policies for eight out of the nine RI topics. As we might expect, retired researchers were least aware of the existence of policies in general although more aware of policies relating to publication and communication than those at other stages of their career. Perhaps surprisingly, mid-career researchers were least aware of organisational policies relating to supervision and mentoring.

Excepting retired researchers who may reasonably be less familiar with organisational policies, we see that in general, awareness of policies increases with career longevity. This suggests that there need to be increased efforts at communicating policies to early career researchers.

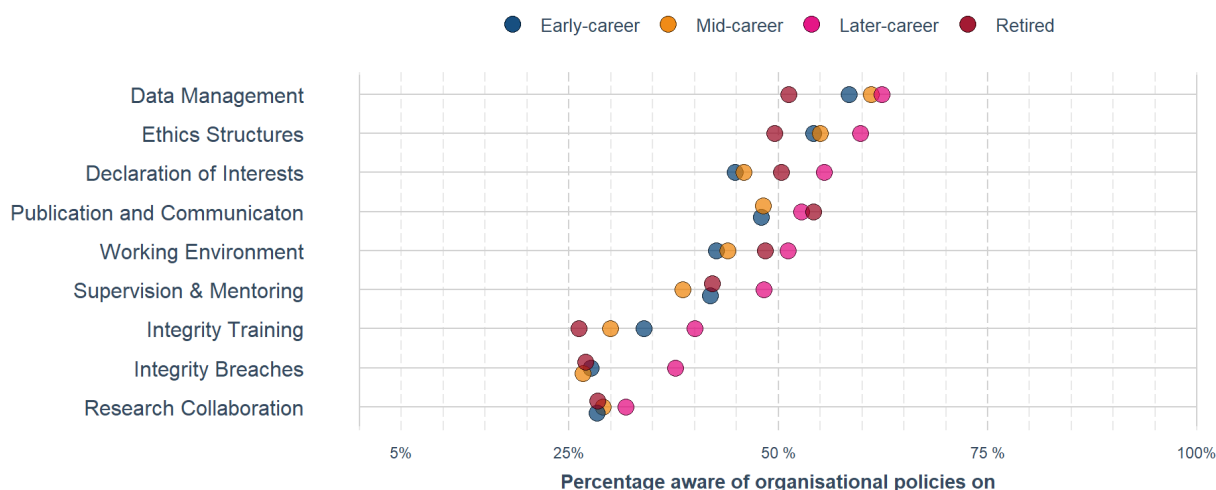


Figure 5.7 Awareness of organisational policies by career stage

5.3.9 Perception of effectiveness of organizational policies

Where researchers had told us that policies exist, we wanted to get a sense of how effective those policies are and asked researchers to make a judgement as to whether they are effective or not.

In both Figure 5.8 and Figure 5.9 we include the percentages of those who said they did not know how effective policies are alongside those who told us they do not think that the policies in place are effective. There is a difference between thinking a policy is not effective, and not knowing how effective it is, but in this context

both are considered in contrast with the response “yes”, which we consider to be a positive endorsement of existing policies.

Figure 5.8 shows the perception of effectiveness of policies by researchers across country groups. Overall, those who are aware of their organisation’s RI policies are likely to think them to be effective. For most areas the percentage endorsing is between 60 and 80 percent. That said, researchers in EU countries have less trust in the effectiveness of their organisational policies than their counterparts in EFTA and other countries. This is most noticeable with regards policies for integrity training.

Figure 5.9 shows the perception of effectiveness of policies by researchers across career stages. Researchers have increasing trust in the effectiveness of their organisational policies the more senior they become. Conversely early and mid-career researchers experience their organisation’s policies as being less effective than later-career or retired researchers do.

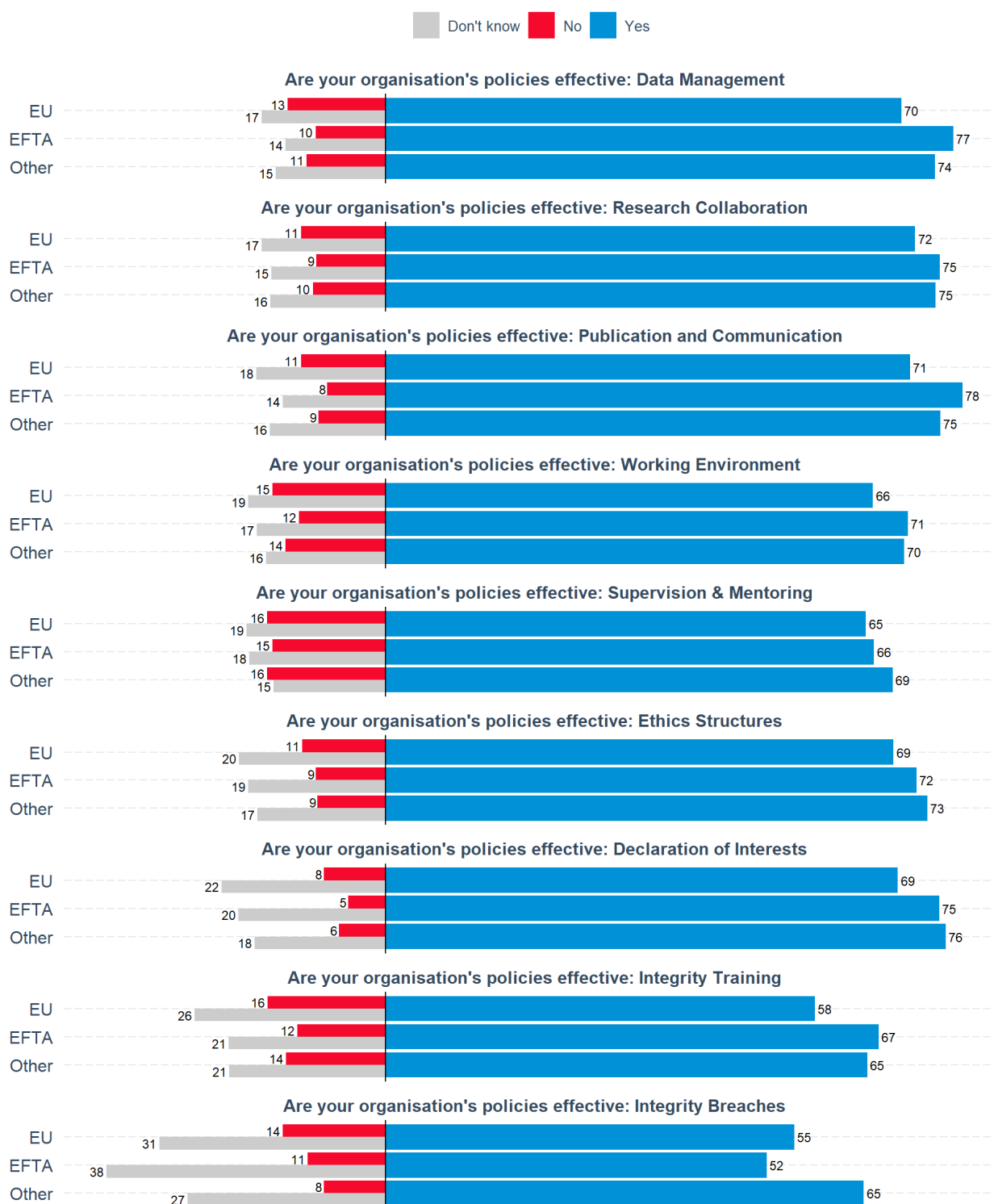


Figure 5.8 Perception of effectiveness of organisational policies, by geo-political unit

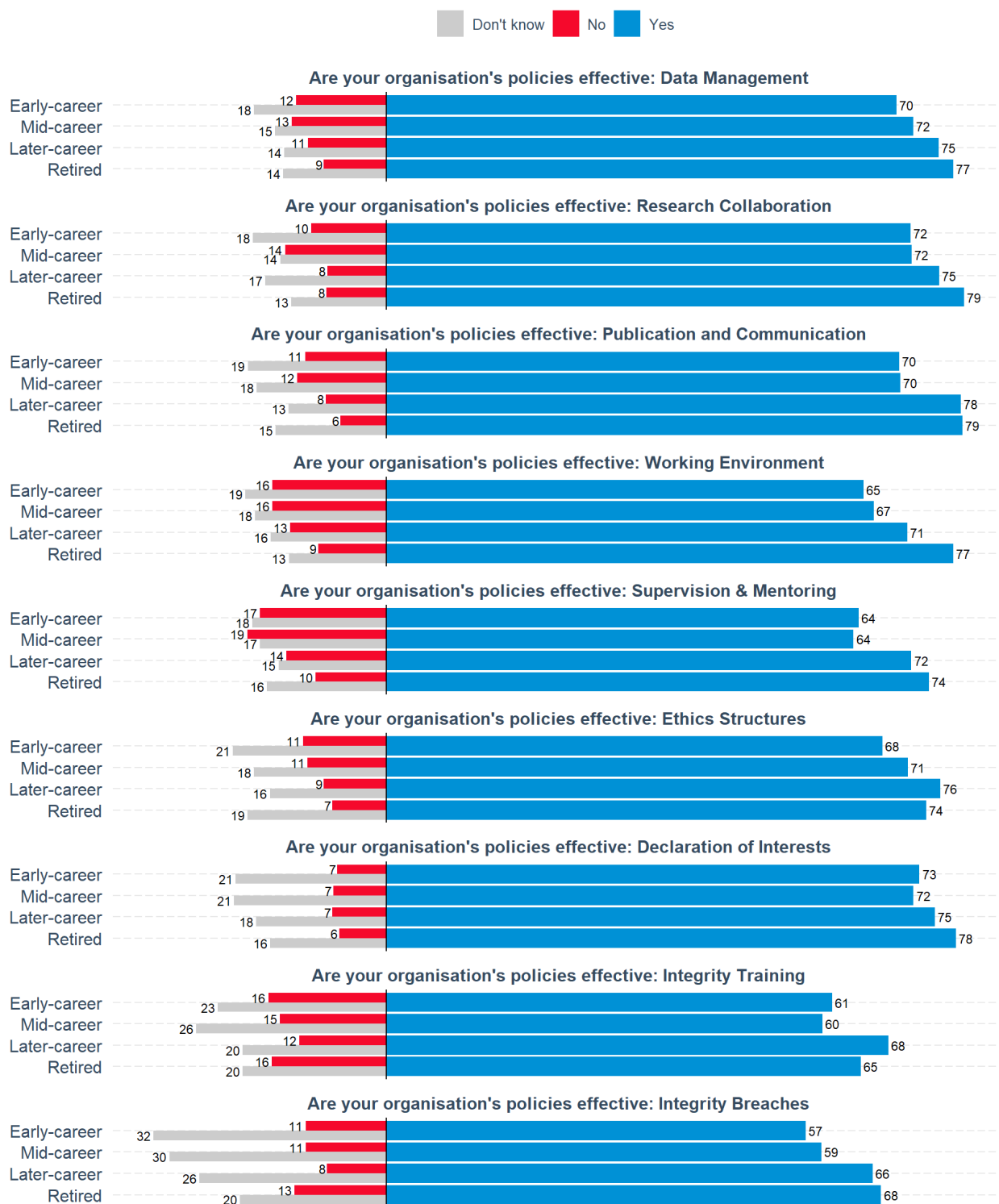


Figure 5.9 Perception of effectiveness of organisational policies, by career stage

5.3.10 Importance of research integrity areas for ensuring high quality research

Having asked researchers how closely their organisations resemble the research integrity ideal across nine topic areas, what policies are in place in those areas, and how effective researchers deem them to be, we wanted to assess whether researchers actually considered these nine areas important for ensuring high levels of research integrity.

All the nine research integrity areas identified in previous work packages were evaluated by most respondents as being fairly, very, or extremely important for RI. A collegial working environment was seen as the most important area for ensuring high quality research carried out with integrity.

As shown in Figure 5.10, there are no substantial disparities in the importance given to each of the research integrity areas by researchers in different country groups. In almost all cases, researchers from all geo-political areas confirm the belief that each of the areas is important to some degree. Only trivially few think that any of the RI topics are not important at all.

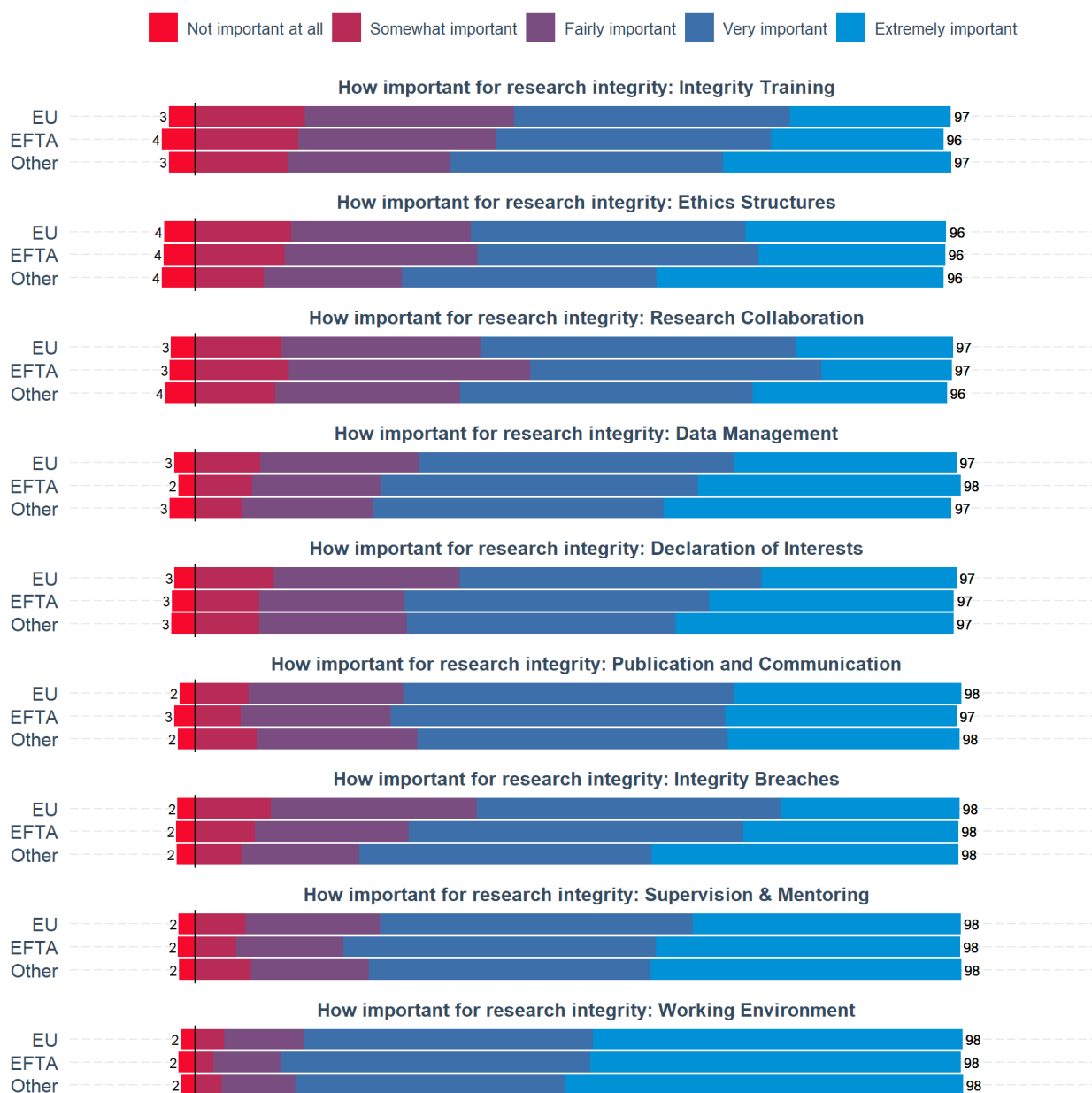


Figure 5.10 Importance of research integrity area for ensuring high quality research, by geo-political unit

Again, in Figure 5.11 we see that there are no substantial differences in the importance given to each of the research integrity areas by researchers at different stages of their career. With respect to all other career stages, early-career researchers give the highest importance to all RI topics and retired researchers the lowest, but this is a minimal difference.

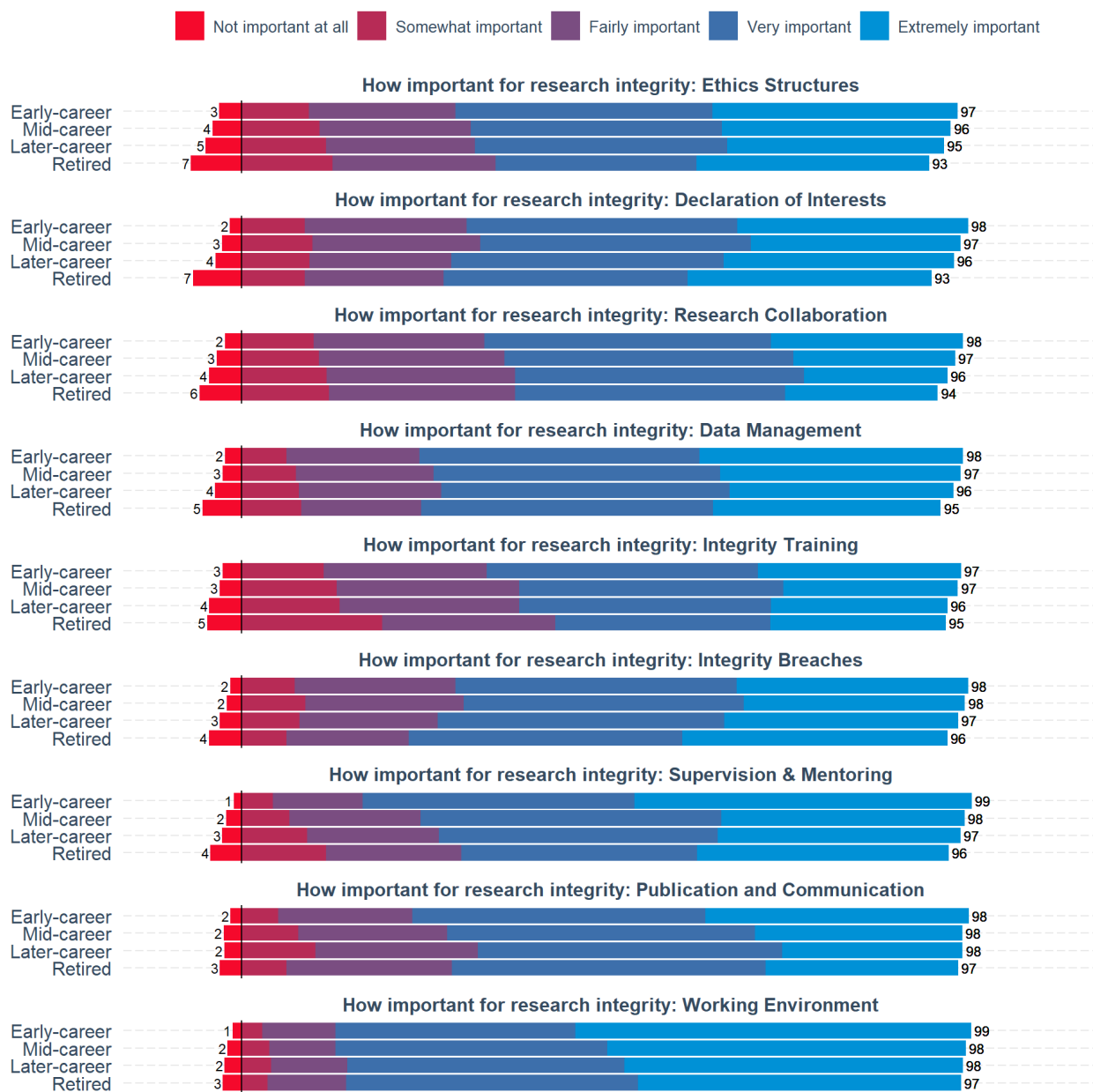


Figure 5.11 Importance of research integrity area for ensuring high quality research, by career stage

5.3.11 Confidence in organisations in ensuring a high level of RI

Finally, we wanted to know how much confidence researchers had that the management of their organisation is effective in ensuring a high level of research integrity.

Overall, 75 percent of respondents have at least some confidence in their organization to ensure high levels of research integrity (we locate the black vertical line to denote this cutpoint). Figure 5.12 shows that researchers in the medical sciences have the most faith in their organization in this regard, with 82 percent having some, a great deal, or complete confidence in their organization. Social scientists (76 percent) also have greater confidence than researchers in the humanities (72 percent) or natural sciences (71 percent). This does mean however that a non-trivial minority have little to no confidence in their organisation to ensure high levels of research integrity (1 in 5 researchers in the medical sciences, 1 in 4 researchers in the social sciences and more than 1 in 4 researchers in the humanities and natural sciences). Interpretation of this finding

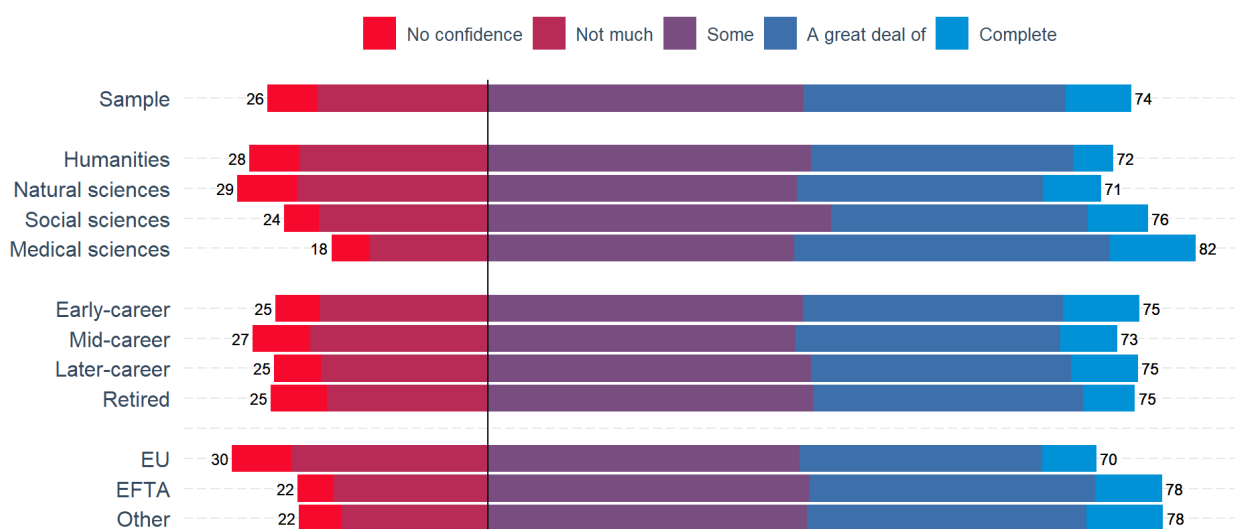


Figure 5.12 Confidence in organisation to ensure high level of research integrity, by field, by career stage and by geo-political unit

Figure 5.13 shows levels of confidence by individual county. Broadly speaking, researchers from either northern European countries or English-speaking countries tend to have greater faith in their organisation than southern and eastern European countries.

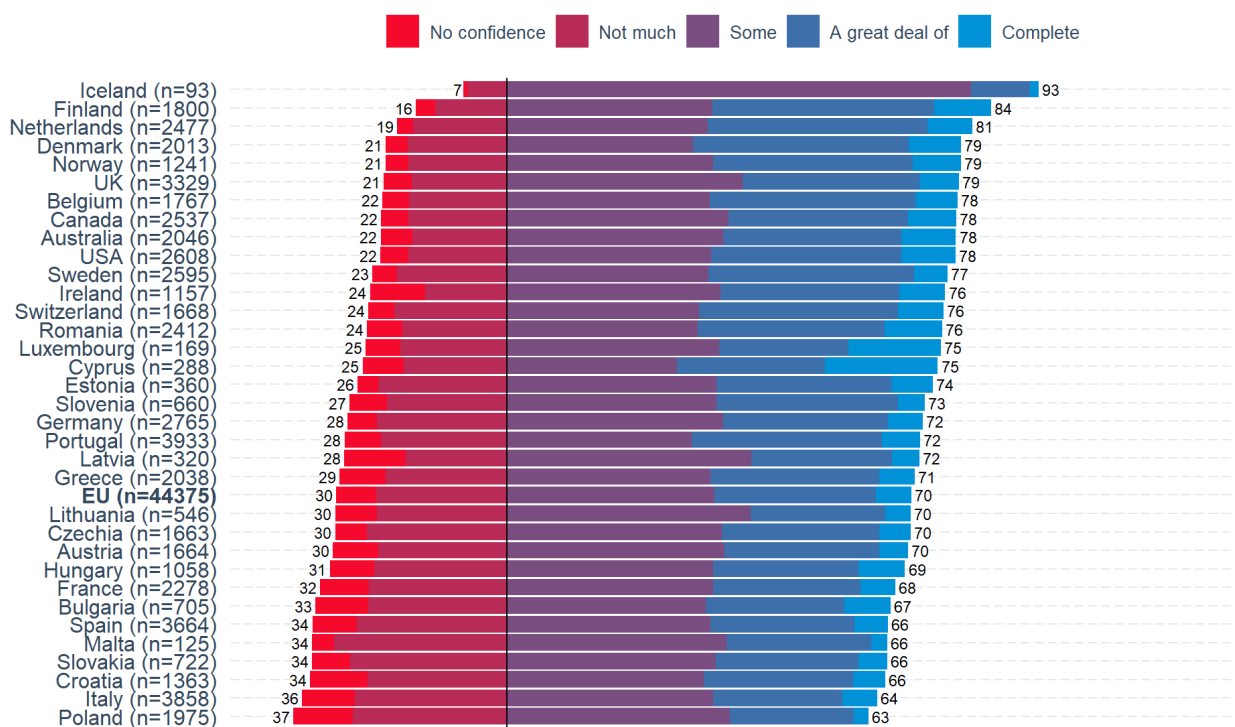


Figure 5.13 Confidence in organisation to ensure high level of research integrity by country

5.4 Conclusion

A little more than half of the respondents are aware of written policy on research integrity, while a little more than one third are not aware whether there is a written statement on research integrity. However, this differs by geographical area. Specifically, two thirds of the respondents from non-European countries, including the UK, are aware of a written policy on research integrity, compared with less than half in EU and EFTA countries. Later-career researchers are more aware of written integrity statements and policies in the nine research integrity areas, and have greater trust in their effectiveness. According to the respondents, these written statements have been communicated by organisations through formal channels.

The majority of respondents perceived their working environment as having at least some resemblance to the high RI standards as described in the survey for most of the topics. In addition, not much difference was seen across the four different career stages in five of the nine research integrity areas. Researchers in the EU report less favourable comparisons between their working environments and our research integrity ideals than their counterparts in EFTA and non-EU countries of interest.

Awareness of organisational policies differs significantly across different topics and across different geographical country groupings. Overall, the results show that for almost all the topics, researchers

from EU countries were less aware of the existence of policies than their counterparts in EFTA and non-EU countries of interest.

Researchers report an increasing trust in the effectiveness of their organisational policies the more senior they become.

All of the nine research integrity areas identified in previous work packages were evaluated by most respondents as being fairly, very, or extremely important for RI.

Overall, 75 percent of respondents have at least some confidence in their organization to ensure high levels of research integrity. The remaining 25 percent of researchers have little to no confidence that their organisation can ensure this.

6. Researcher Attitudes to Research Integrity

6.1 Introduction

Having explored self-reported researcher behaviour and gained a sense of what organisational provisions are already in place, we next look at the attitudes of researchers towards organisational research integrity measures to identify what might be potential obstacles for organisations when implementing research integrity promotion plans.

We wanted to establish researchers' attitudes and beliefs towards RI policies in general and whether or not they see value in policies for improving their research. This is key to understanding whether researchers will be receptive to plans implemented by their organisations.

Throughout this section we explore whether researchers feel the institution has a role at all in overseeing research integrity and whether they believe policies support better research.

6.2 The question

We first wanted to explore what level of oversight researchers felt their organisation should have for ensuring research carried out to the highest standard. We wanted to understand whether a researcher felt their institution had a legitimate role in this, or whether they would consider it outside the remit of the organisation and thus be less receptive to policies and procedures introduced by their organisation. We asked them what level of responsibility they felt their organisation should have for overseeing that their research was carried out to the highest standards.

Participants in previous stages of our research have expressed concerns that organisations will implement policies simply to say they have done so, without any real commitment to improving research. So we asked researchers to what extent they considered research integrity policies as just "box-ticking" exercises to satisfy bureaucratic administrative requirements rather than assessing the actual merit of the policies.

Next we asked researchers to tell us whether they think research integrity policies help to improve the quality of their research.

Lastly, we wanted to see how positive researchers would be to engaging in research integrity training as a proxy measure for the "cost" of investing in research integrity procedures. We asked them how positive they would feel about attending research integrity training on some aspect of research integrity that already interested them.

6.3 Results

6.3.1 Responsibility of research integrity

Researchers were asked to choose which of the following statements most closely matches where they think responsibility should lie for ensuring the highest standards of research.

- It is up to me without any oversight from my organisation
- It is up to me with some oversight from my organisation
- It is up to me with a lot of oversight from my organisation

Just over two-thirds of respondents believed that their organisation had a valid role in overseeing the integrity of their research. More respondents felt that this should be a shared responsibility between them and their organisation, with their organisation having “some” oversight, than thought the organisation should take greater responsibility with a lot of oversight. Almost one in three researchers overall thought that they should be responsible for ensuring high quality research without any oversight from their organisation.

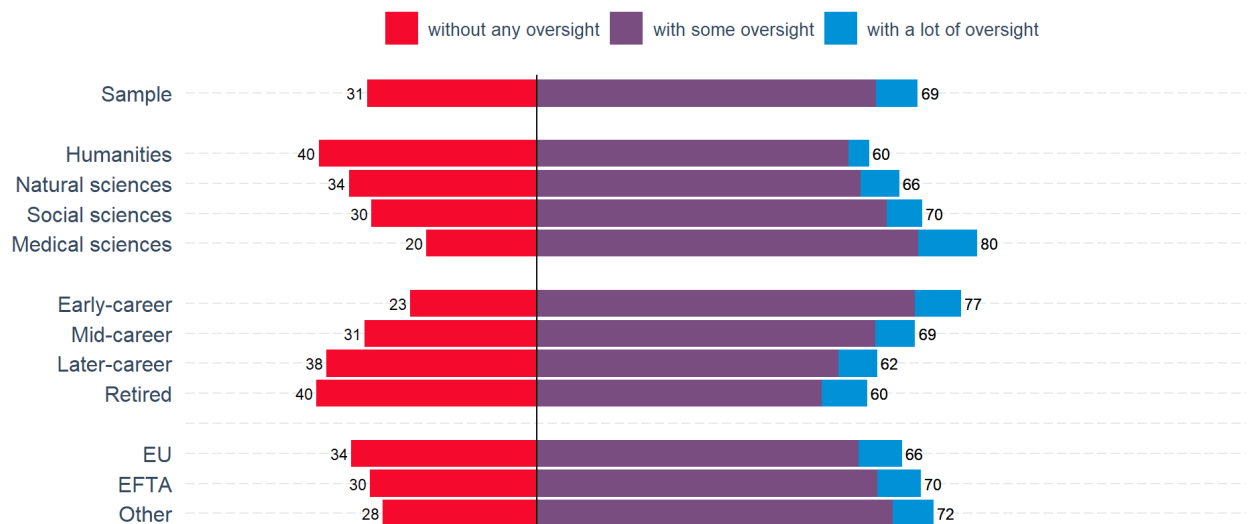


Figure 6.1 Frequencies of research integrity locus of responsibility, by field, by career stage and by geo-political unit

A further breakdown of the results by career stage of the respondents reveals a more interesting pattern. As presented in Figure 6.1, more early career stage researchers thought their organisation should have at least some oversight (77 percent) compared to mid-career (69 percent), later-career (62 percent) and retired ones (60 percent). The results suggest that the more experienced the researcher, the less they believe their organisation should have any oversight for the integrity of their research. Less experienced researchers might be more receptive therefore to organisational oversight.

Similarly, when looking at field of study, more researchers in the Medical sciences believe their organisation should have at least some oversight (80 percent) compared to other fields (60-70 percent). A much smaller percentage of respondents from the medical sciences thought there should be no oversight from the organisation (20 percent compared with 30-40 for the other fields). Researchers in the arts and humanities were least likely to see a role for their organisation in overseeing research. EU countries have a slightly lower proportion of respondents indicating support for organisational oversight compared to the two other groups.

Figure 6.2 shows this information for researchers from each country.

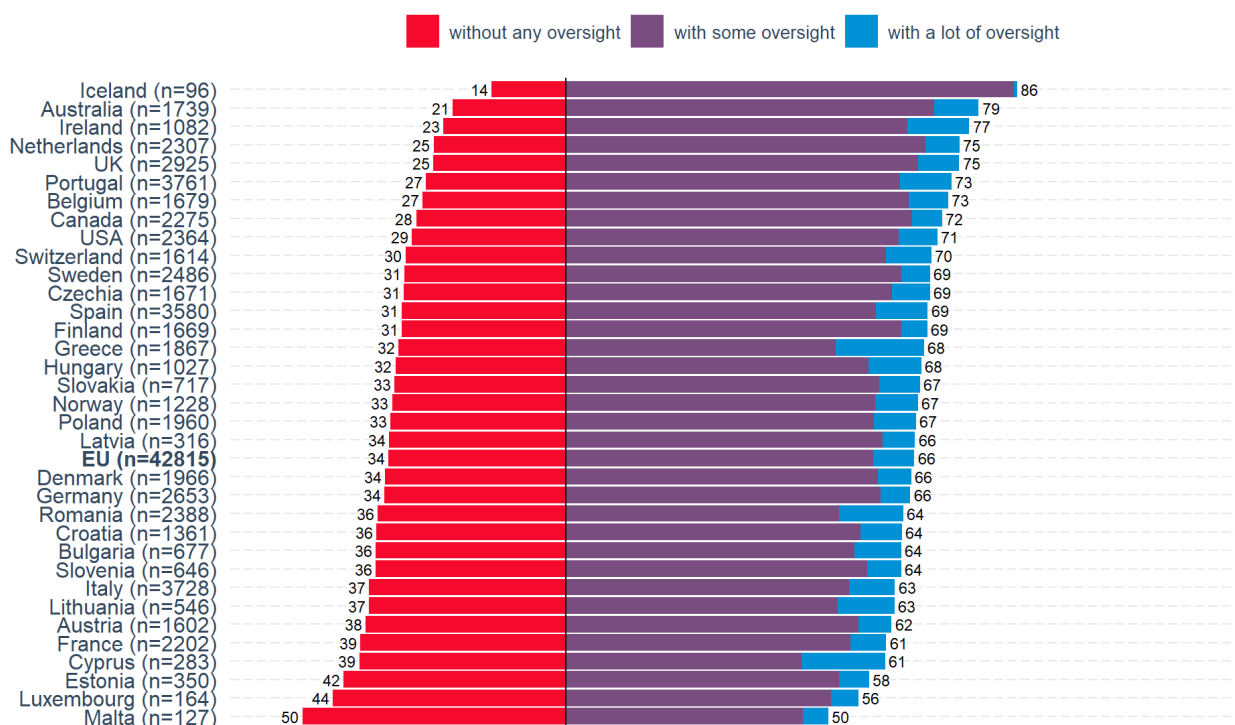


Figure 6.2 Frequencies of locus of responsibility for RI, by country

The countries with the highest percentages of respondents indicating they believed their organisation should have a lot of oversight were Greece and Cyprus, with more than 15 percent responses.

On the contrary, the countries with the highest percentage of respondents indicating an ‘individual’ locus of responsibility were Malta (50 percent), Luxembourg (44 percent) and Estonia (42 percent). Another way of looking at this is to focus on those who think that organisations should have no role. Figure 6.2 orders countries according to the proportion of its researchers that adopt this view. Here we see that the other OECD countries are all amongst the least likely to think this, - less than 30 percent, compared to the EU average of 34 percent. .

6.3.2 Research integrity as box-ticking exercise

The majority of respondents (80 percent) felt that research integrity policies were box ticking exercises at least some of the time, with 36,5 percent of those considering research integrity to be always or mostly box-ticking exercises. (43 percent only sometimes).

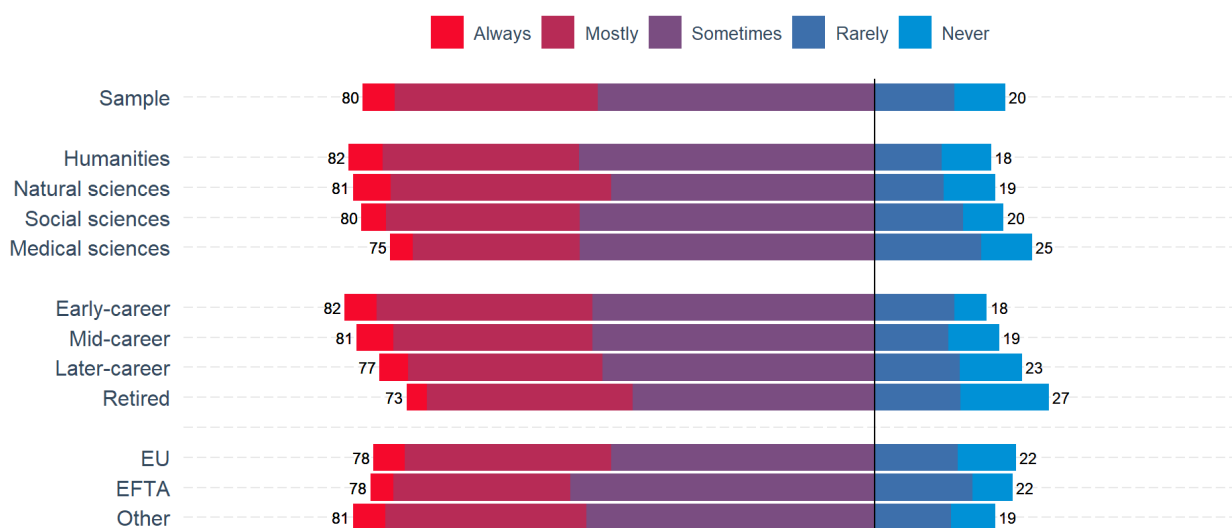


Figure 6.3 Frequencies of “research integrity as box-ticking exercises” by field, by career stage and by geo-political unit

Figure 6.3 shows that early career researchers are the least positive compared to mid and late-career ones, or retired. This is an interesting and potentially important finding. Although the differences are not great, it is puzzling that early career researchers would be more cynical than senior colleagues about formal RI policies, and could have implications for support for such initiatives from those most likely to benefit in the future.

We can also observe that participants from the medical sciences were the least negative towards research integrity policies compared to the other groups. There is little difference between country groups.

Figure 6.4 shows the results by individual country. The results of this questionnaire item across countries appear reasonably consistent, with some country variation. The highest percentages of respondents thinking research integrity policies are at least some times box-ticking exercises were recorded in: Iceland (92 percent), Slovakia (86 percent), Czechia (85 percent) and UK (85 percent). The most positive, considering the option of rarely or never box-ticking were: Romania (30 percent), Luxemburg (29 percent), and Portugal (29 percent).

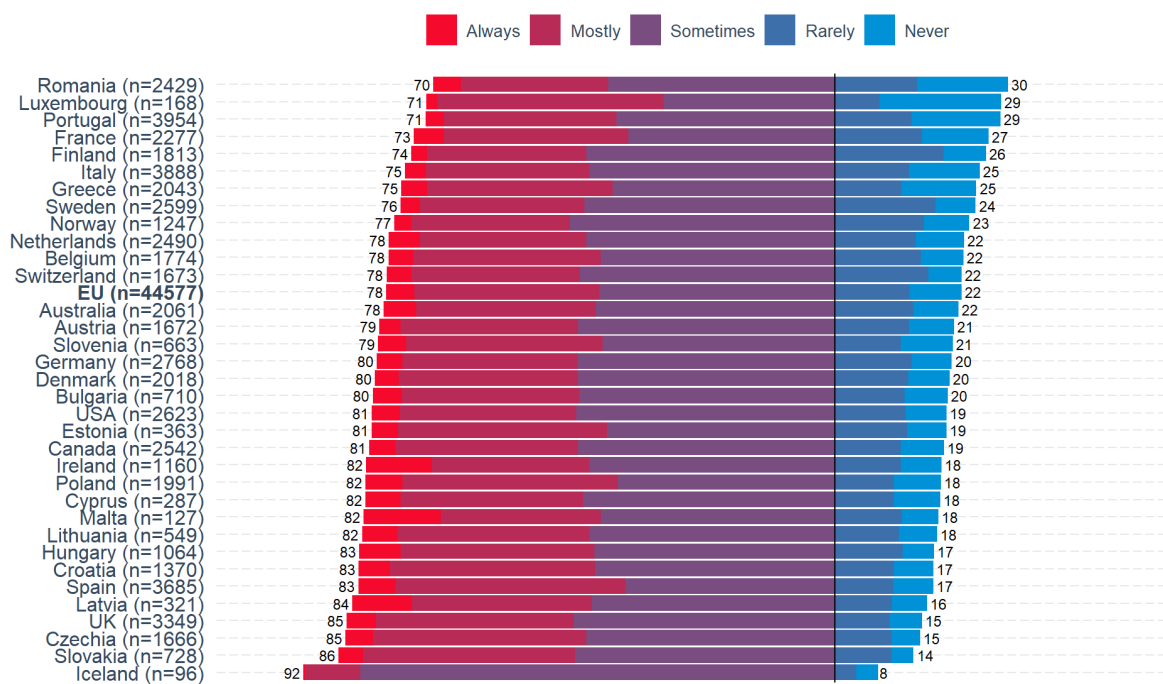


Figure 6.4 Frequencies of "research integrity as box-ticking exercise", by country

6.3.3 Research integrity policies improve my research

In this section, we explore the perceived impact of research integrity policies on the quality of research. Figure 6.5 shows that the majority of participants consider that research integrity policies help improve the quality of their research (69 percent adding always, mostly and sometimes improve the quality of research). A substantial minority holds a more sceptical view about RI and quality of their research, 7 percent of respondents opted for the option 'never improve the quality of research', and 23 percent chose 'rarely improve the quality of research'.

When we analyse the responses by career stage, we identify another clear pattern. Early career researchers are the least positive about research integrity policies and the percentage of those who are more positive about the potential for RI policies to improve research increases at later career stages. We can observe that participants from the medical sciences were the most positive about the role of research integrity policies in improving research compared to the other groups.

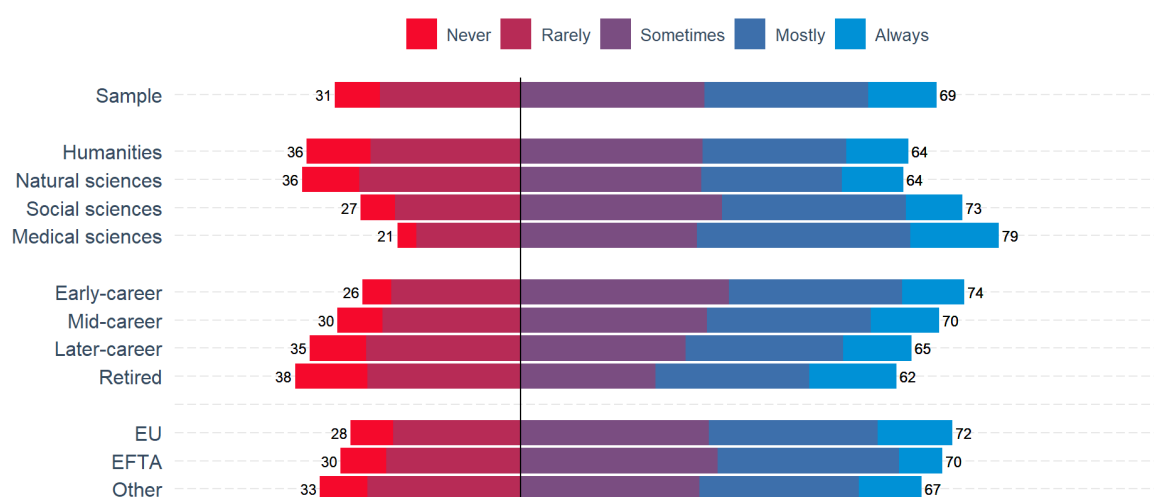


Figure 6.5 Frequencies for "RI policies improve my research" by field, by career stage, and by geo-political unit

Next, in Figure 6.6 we examine the differences across countries on the same item. The countries with the highest percentage of respondents that selected the option 'never improve the quality of research' are Malta and Ireland with 13 percent, followed by France with 10 percent. The countries with the highest percentages of respondents that selected 'always improve the quality of research' are Romania and Portugal (both 27 percent).

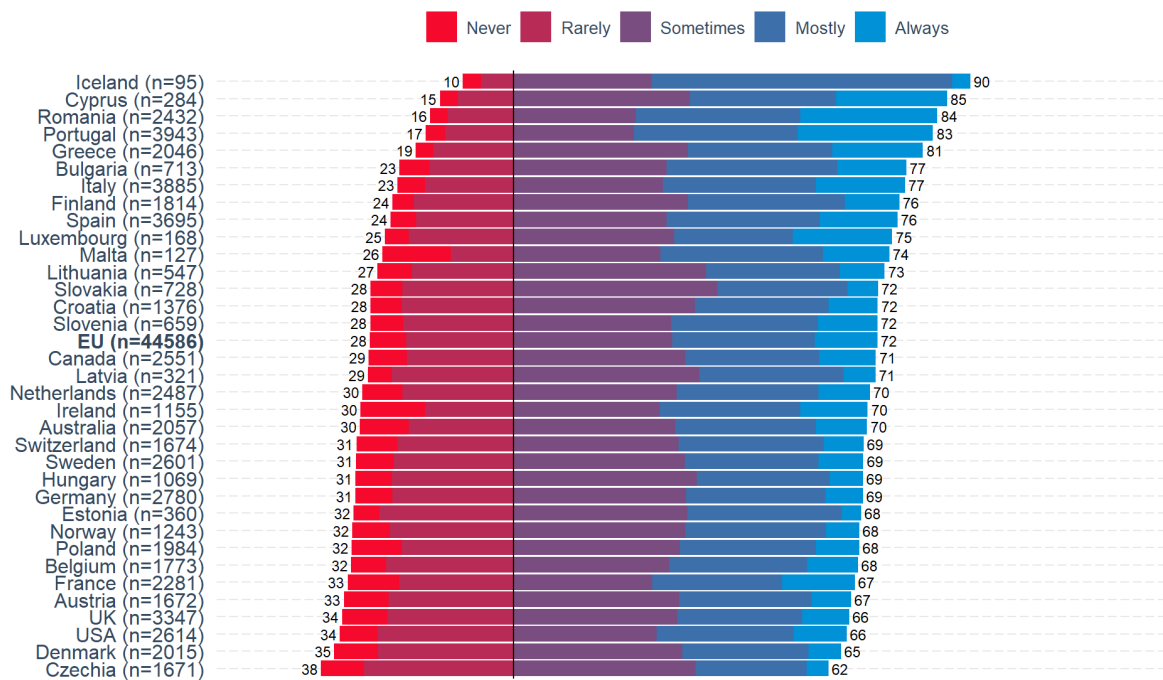


Figure 6.6 Frequencies for "RI policies improve my research" by country

6.3.4 Research Integrity training

In the last section of this chapter, we explore the preferences of our sample about the type of training in research integrity that they would like to receive, voluntary or mandatory. Both options are well received, with more than 60 percent of researchers making positive evaluations (very positive plus slightly positive). The option with the highest percentage of 'very positive' is voluntary training followed by mandatory training. Although voluntary training is preferred by a small margin, the appetite for mandatory training is shared by a substantial majority, indicating that for many researchers, more mandatory training would likely not meet with particular resistance.

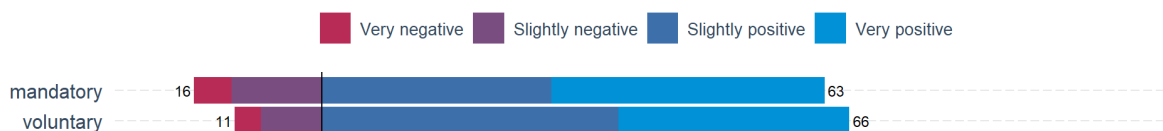


Figure 6.7 Positivity towards RI training according to form of training

6.4 Conclusion

In conclusion, we can summarise the findings of this chapter in the following four points:

The majority of respondents think that there should be some oversight from their organisation for research integrity. Minor differences exist between countries. A clearer pattern emerges if we consider participants' career stage: early-career individuals think that organisations should have oversight than senior colleagues. In addition, medical sciences researchers think that organisations should have more oversight than their counterparts in other fields, but the differences are not large.

Moving to the possibility that research integrity might just be considered a box-ticking exercise, a large majority of respondents believe this possibility very real. Some country difference exists but is minor. Early career researchers appear to be the most pessimistic about research integrity policies compared to more senior colleagues. Across fields, the most positive about the sincerity of research integrity policies were researchers from the medical sciences.

The large majority of respondents agreed that research integrity could improve one's research. There are, however, some noticeable differences across career stages and fields. Early career researchers are the least positive about RI policies improving their research compared to more senior researchers. Once more, if we consider research fields, researchers from the medical sciences were the most positive about RI policies enhancing their research.

Lastly, most researchers were positive about receiving training in research integrity, with voluntary training being the most appreciated by a small margin compared to mandatory.

7. Researchers' motivation to adhere to research integrity procedures

7.1 Introduction

The final part of the picture, having identified researcher behaviours, current provision of research integrity measures and attitudes towards them, and spheres of influence that might impact on receptivity to proposed policies, is to look at what might motivate researchers to follow research integrity procedures that are likely to become necessary.

7.2 The question

Respondents were asked how motivating a number of potential benefits would be in encouraging them to adhere to formal research integrity procedures.

The ten motivating factors were:

- Better reputation in my field
- Higher salary or income
- Increased funding opportunities
- Increased self confidence in my research
- More trust in my research by the general public
- More trust in my research by my peers or colleagues
- Increased chance of promotion
- Being able to publish in higher status outlets
- Facilitates collaboration with other researchers
- More reliable scientific knowledge

7.3 Results

Figure 7.1 shows the contrast between intrinsic and extrinsic motivating factors. The latter, 'extrinsic motivation', addresses promotion chances and salary. Looking at mean scores for these two items, we see that they fall close to the 'fairly motivating' range. By contrast, intrinsic motivation (capturing more reliable scientific knowledge and more trust in my research by colleagues) are

judged on average to be ‘very motivating’. The other factors lie between these two sets of extremes. That more reliable scientific knowledge is the most motivating factor is striking endorsement of the commitment to research integrity. Moreover, none of the cited factors are regarded as irrelevant or not exerting some motivational pull on adherence to RI procedures.



Figure 7.1 Motivational pull of different outcomes of research integrity procedures: full sample, mean scores

Figure 7.2 shows the motivational pull of the ten factors across the four scientific fields. Of note here is that all the factors apart from promotion and salary, are most motivating within the medical sciences. By contrast, of the other field groups, the general picture of the humanities, is of somewhat lower motivational appeal of most factors. The motivational pull of more reliable scientific knowledge is lower by 0.5 units in humanities compared to the medical sciences.

Figure 7.2 shows considerable homogeneity of motivational pull factors across the four fields. Within that context natural scientists are more motivated than others by salary and promotion prospects.

While more reliable scientific knowledge is rated as motivational by at least 90 percent of respondents in all fields, the gap between the medical and natural sciences and the humanities is hardly surprising given the limited role of science to the humanities.

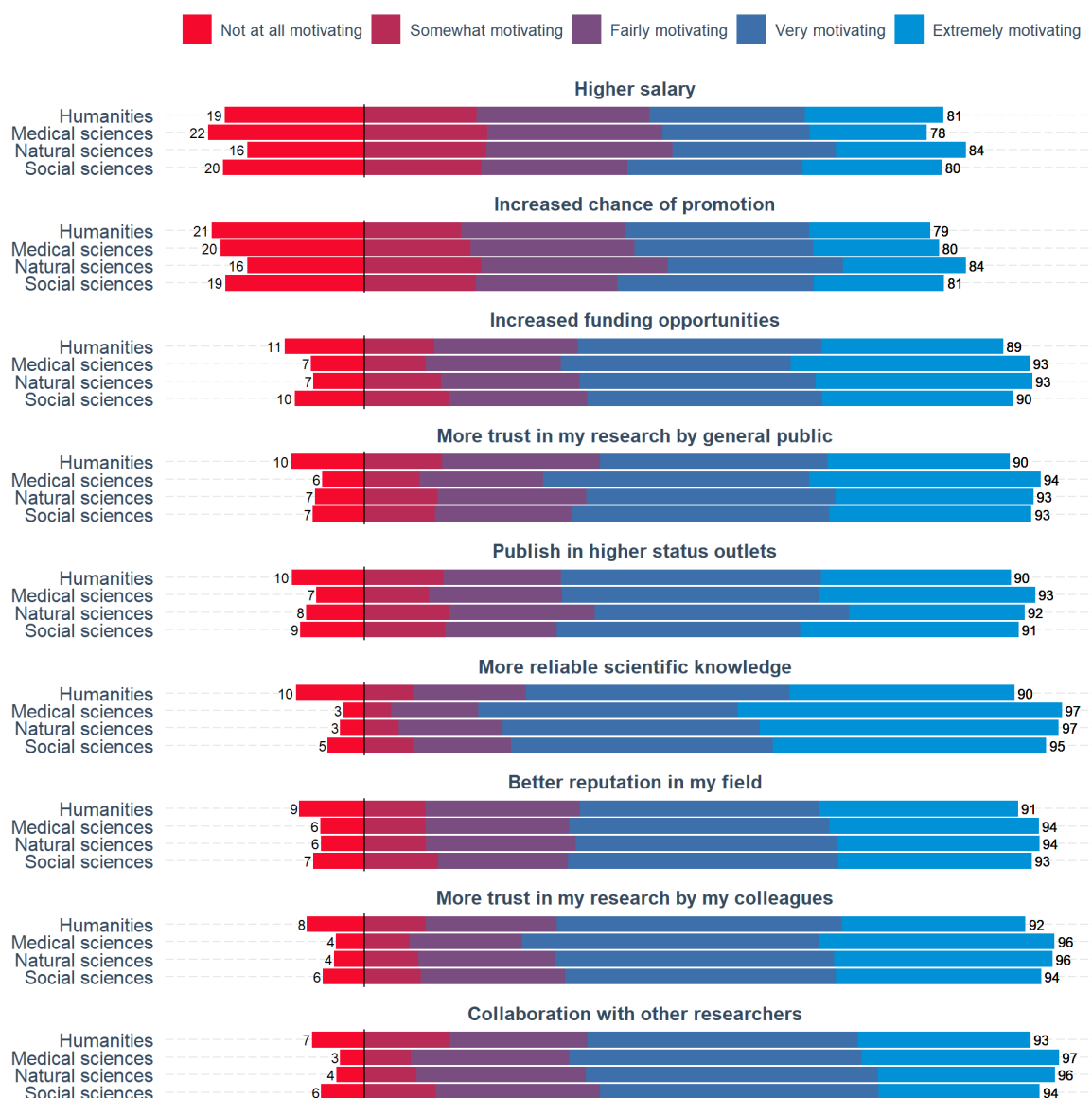


Figure 7.2 Motivational pull of different outcomes of research integrity procedures, by field

Figure 7.3 shows the motivational pull of the ten factors across the career stages. There is a striking association between career stage and motivational pull. Those in the early career stage report greater motivational pull for all of the ten factors, followed by mid-career and, lastly, later career. For early-career researchers, adherence to research integrity procedures is seen not only as a route to more reliable scientific knowledge but also career progression and enhanced salary.

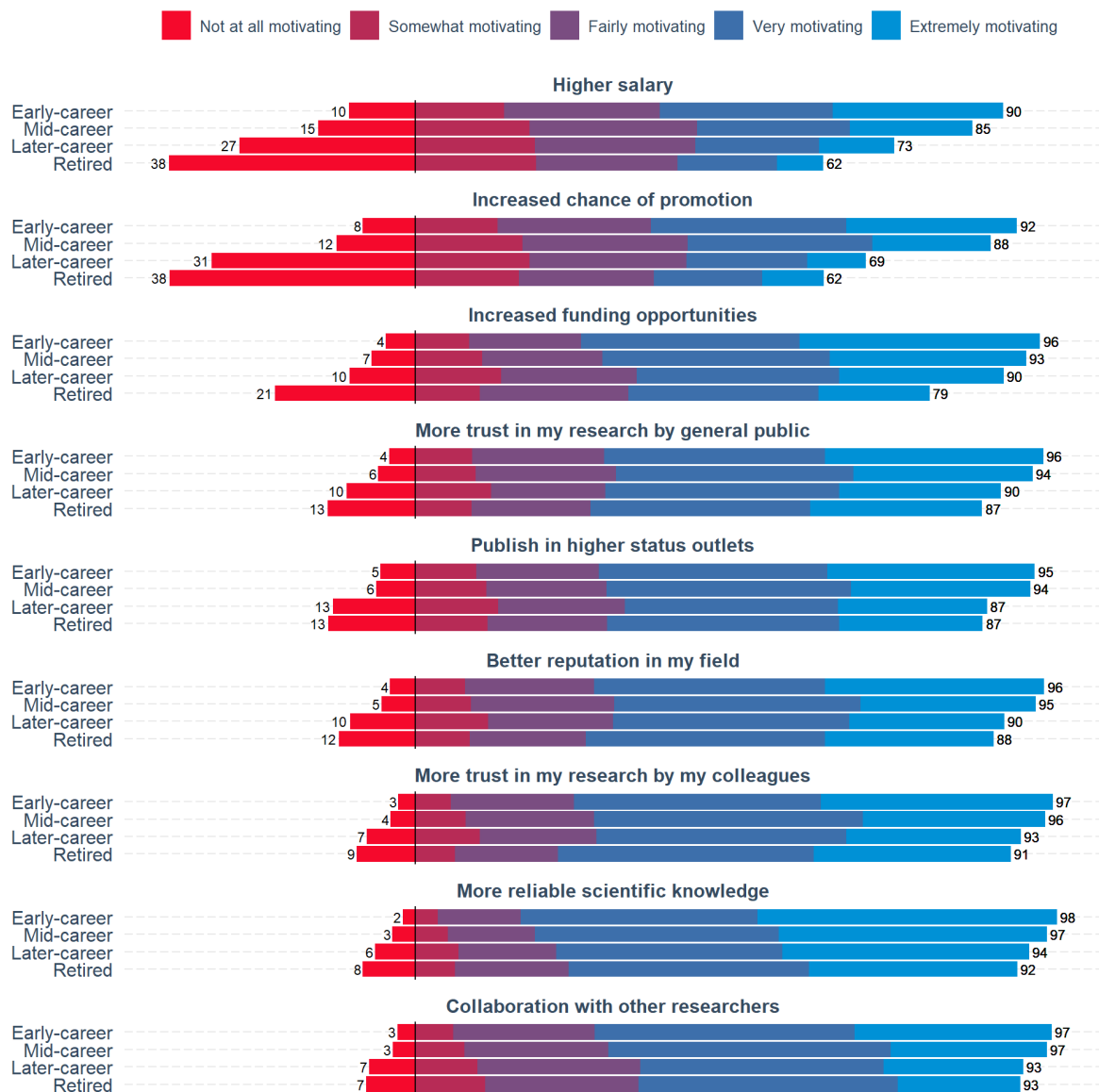


Figure 7.3 Motivational pull of different outcomes of research integrity procedures, by career stage

Figure 7.4 presents the motivational pull broken down by temporary, permanent and no contract (e.g., self-employed). Those on temporary contracts find the motivational pull of the ten factors greater than those with a permanent contract.

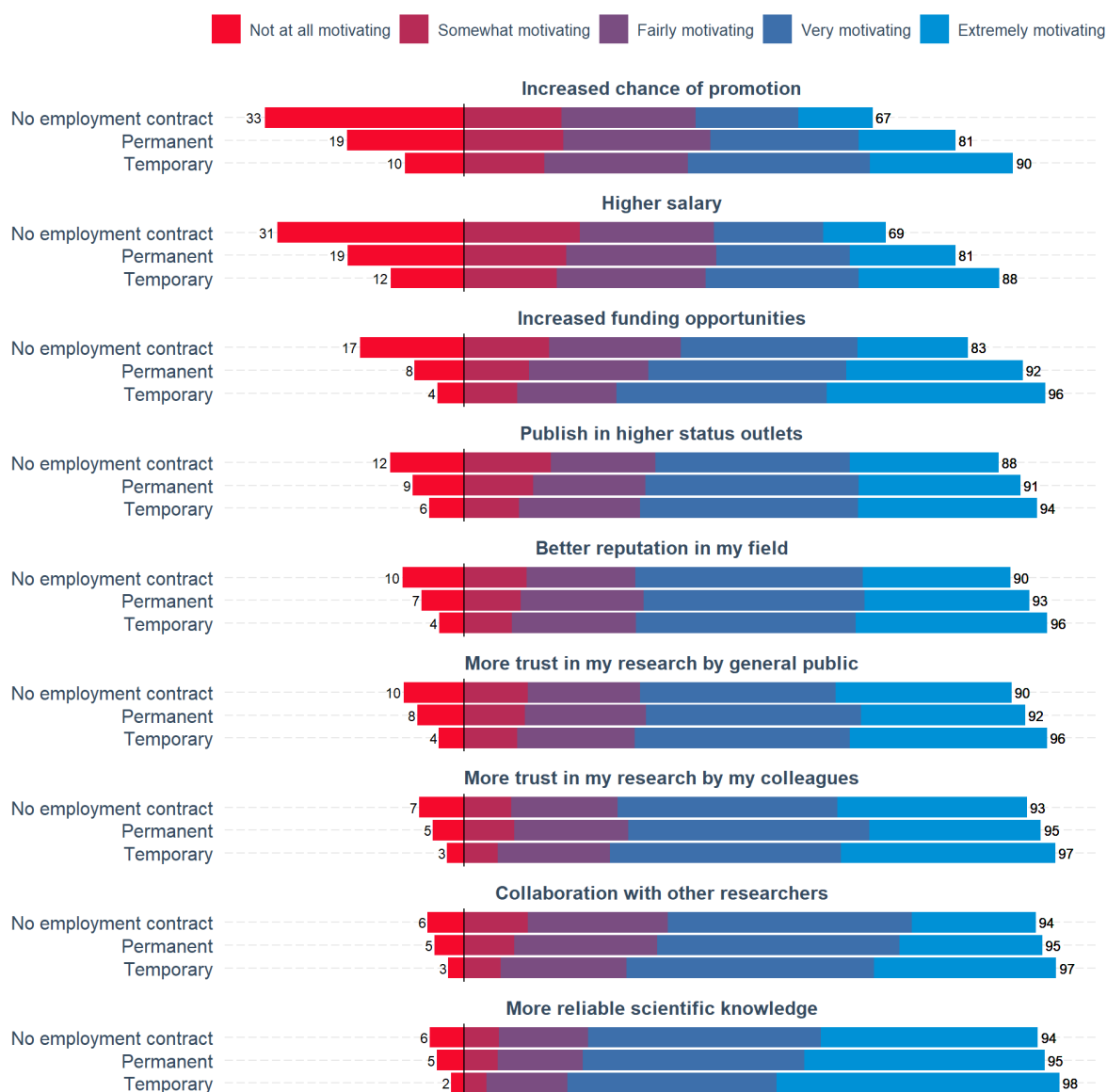


Figure 7.4 Motivational pull of different outcomes of research integrity procedures, by contract

Figure 7.5 shows the motivational pull broken down by sex. Women find all ten factors more motivating than men. It is well established that women are disadvantaged in labour markets and in research (reference to be added) possibly leading to greater interest in following research integrity procedures as an added credential.

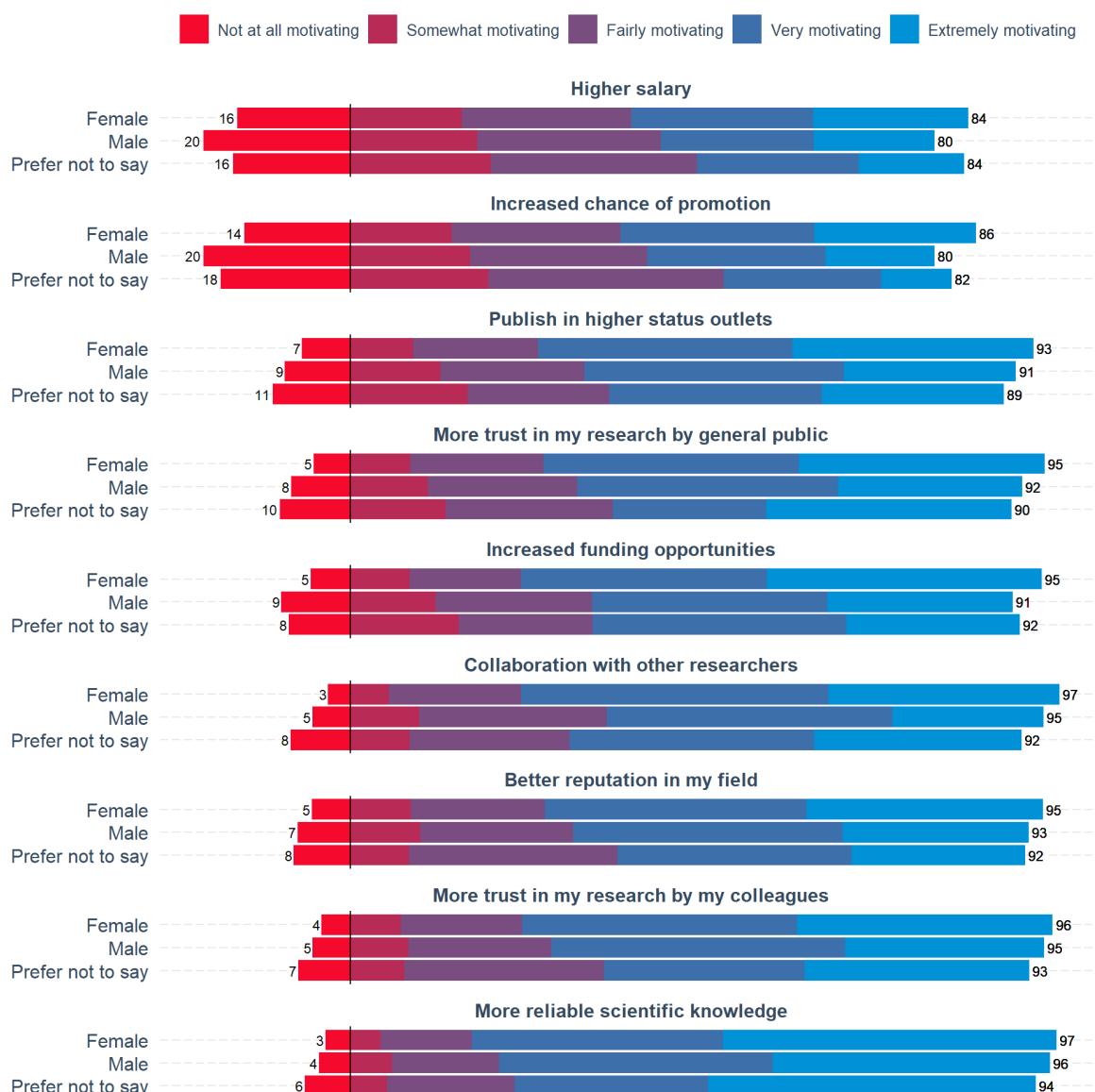


Figure 7.5 Motivational pull of different outcomes of research integrity procedures, by sex

Figure 7.6 presents the motivational pull across the three geo-political groupings. The motivational pull of more reliable scientific knowledge is evidenced in the three groupings with extrinsic motivation promotion and salary being lowest in the European non-EU. This might reflect the relatively higher salaries in Norway and Switzerland.

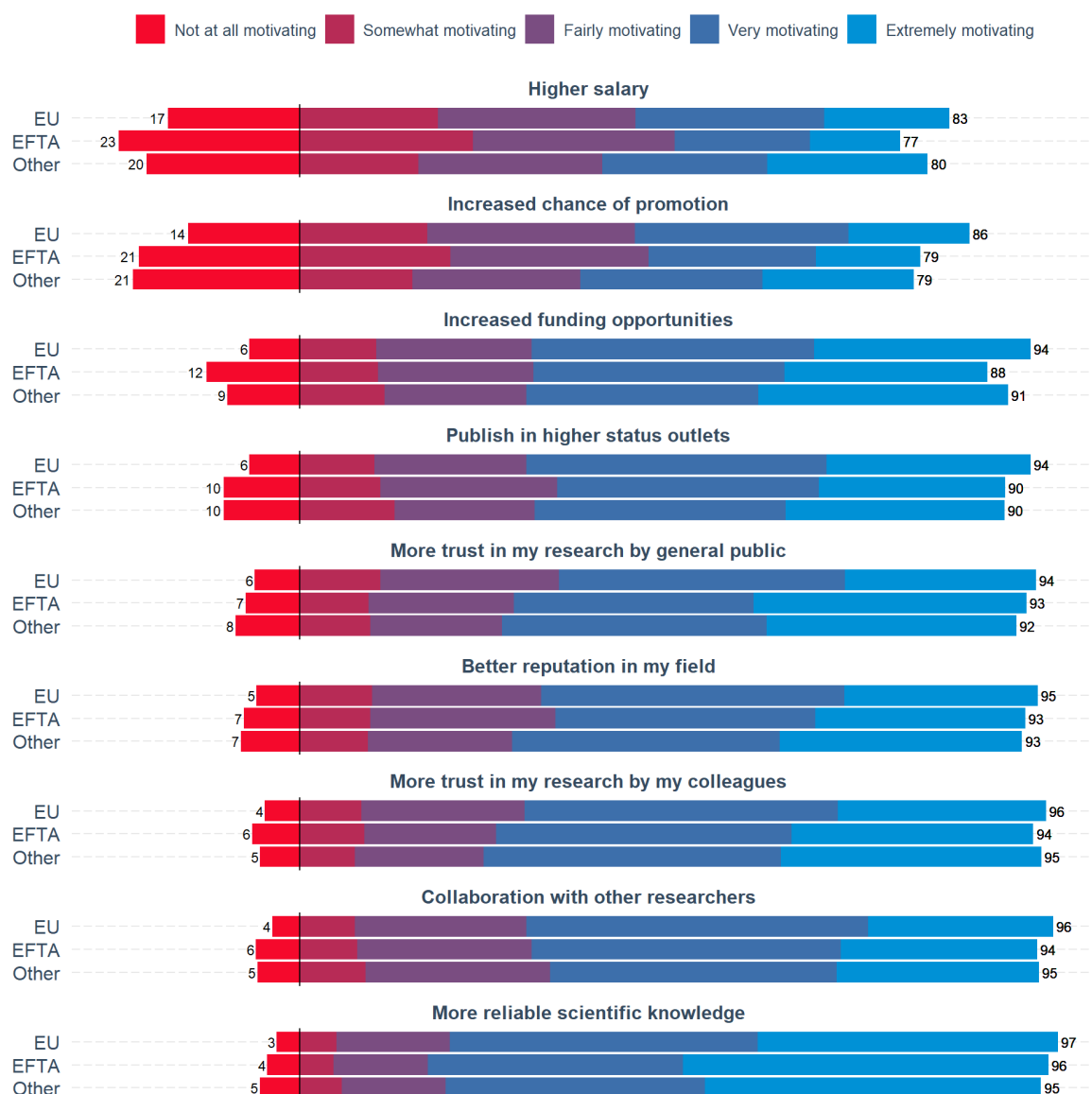


Figure 7.6 Motivational pull of different outcomes of research integrity procedures, by geo-political group

7.4 Conclusion

Overall, given the opportunity to express an opinion, the intrinsic values attached to more reliable science, greater trust of colleagues and personal reputation, stemming from a commitment to research integrity procedures, are seen across all research fields, socio-demographic characteristics and geo-political groupings.

The pull of all motivational factors is positively correlated with career stage; early career researchers, compared to others, rate all the factors, intrinsic and particularly extrinsic, more highly.

In the promotion of research integrity policies, acceptance and implementation among the research community should acknowledge the role of intrinsic motivation.

8. Researcher identity and reference group.

8.1 Introduction

We have looked at researcher behaviour, and researcher attitudes to research integrity policies and their organisation's involvement in these matters. To build a fuller picture of the context within which researchers are influenced and supported, in this section we will discuss the way in which respondents identify as a researcher, their sense of belonging to various organisational or epistemic communities, and the channels through which they most commonly receive information regarding research integrity.

8.2 The Question - Identity

Respondents were asked with whom, as a researcher, they identify with the following question.

How much do you identify as a researcher of:

- your department or centre
- your organisation
- the country where you work
- professional societies you are affiliated with
- a scholarly community

The response alternatives to capture the sense of belonging ranged from 'Not at all' (1) to 'A great deal' (5). The figures below present the results regarding this question by conveying the share of responses to the various categories, broken down by fields, career stages, and geo-political units. The figures graphically distinguish the sets of respondents not identifying with a particular collective, from those who identify at least a little with a given collective.

8.3 Results - Identity

In general, we note that respondents identify fairly strongly with all five categories asked for, with all mean scores indicating at least a modest amount of identification. Respondents identify most with their department or centre (mean score 3.9) and their organisation at large (3.6). Hence, institutional identity is prevalent. To a lesser degree, researchers identify with disciplinary or epistemic collectives including scholarly communities (3.4) and professional societies (3.2). Respondents generally identify least as a researcher of the country they work in (mean score 3.2).

When breaking down the answers by various categories (disciplinary fields, career stages, and countries of affiliation), we note that, generally, very little difference between the various categories is

reported. Respondents from all categories tended to answer the questions regarding their sense of identity in a similar way.

When considering the minor differences that do exist, we note that, considering disciplinary fields, the institutional perception of identity (department/centre and organisation) is least strong in the Humanities, while researchers in this discipline tend to identify more strongly with their scholarly community, compared to other disciplines.

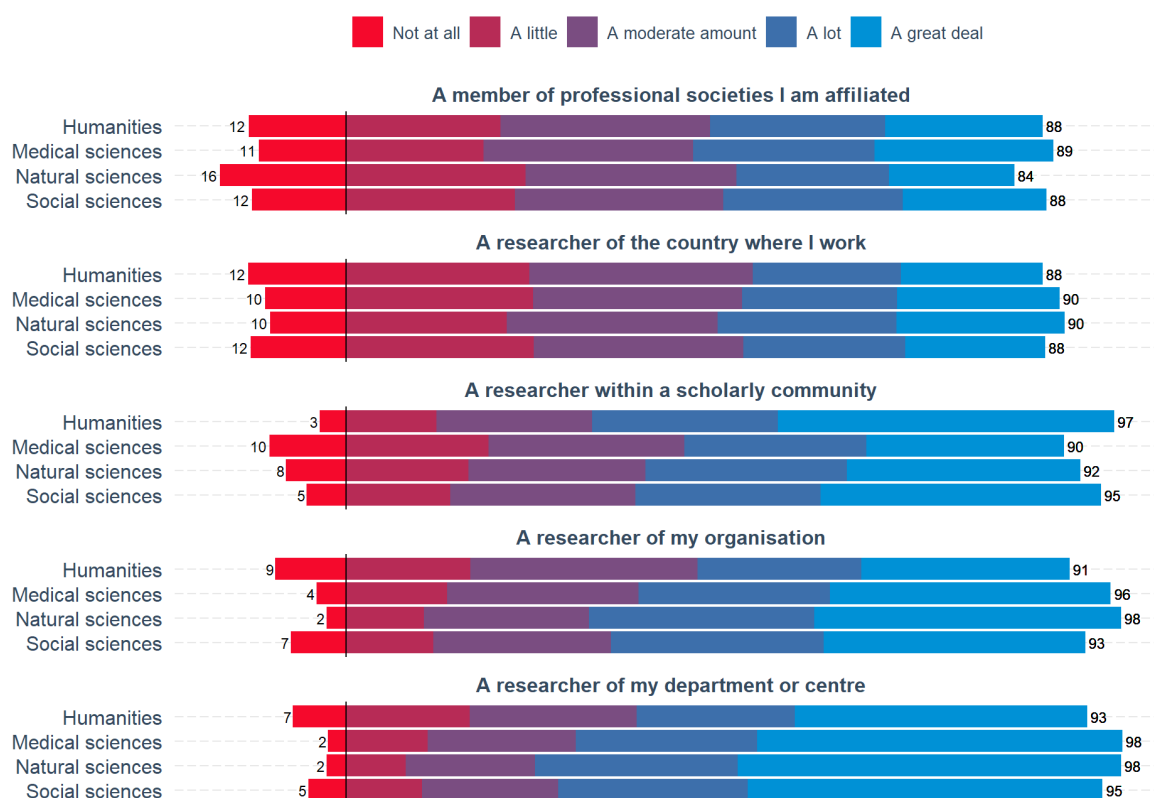


Figure 7.7: The extent to which respondents identify with diverse collectives as a researcher, by disciplinary fields.

When comparing researchers in different career stages, a small but notable difference can be detected between early and mid-career researchers on the one hand, and late-career and retired researchers on the other. Respondents from the former groups tend to identify less with all categories, in particular being less likely to identify 'a great deal' with any of the categories. Hence, in general they tend to feel a weaker sense of belonging to both institutional, geographical and epistemic collectives compared to their more senior colleagues. This pattern is most striking in respondents' level of identification with their scholarly community.

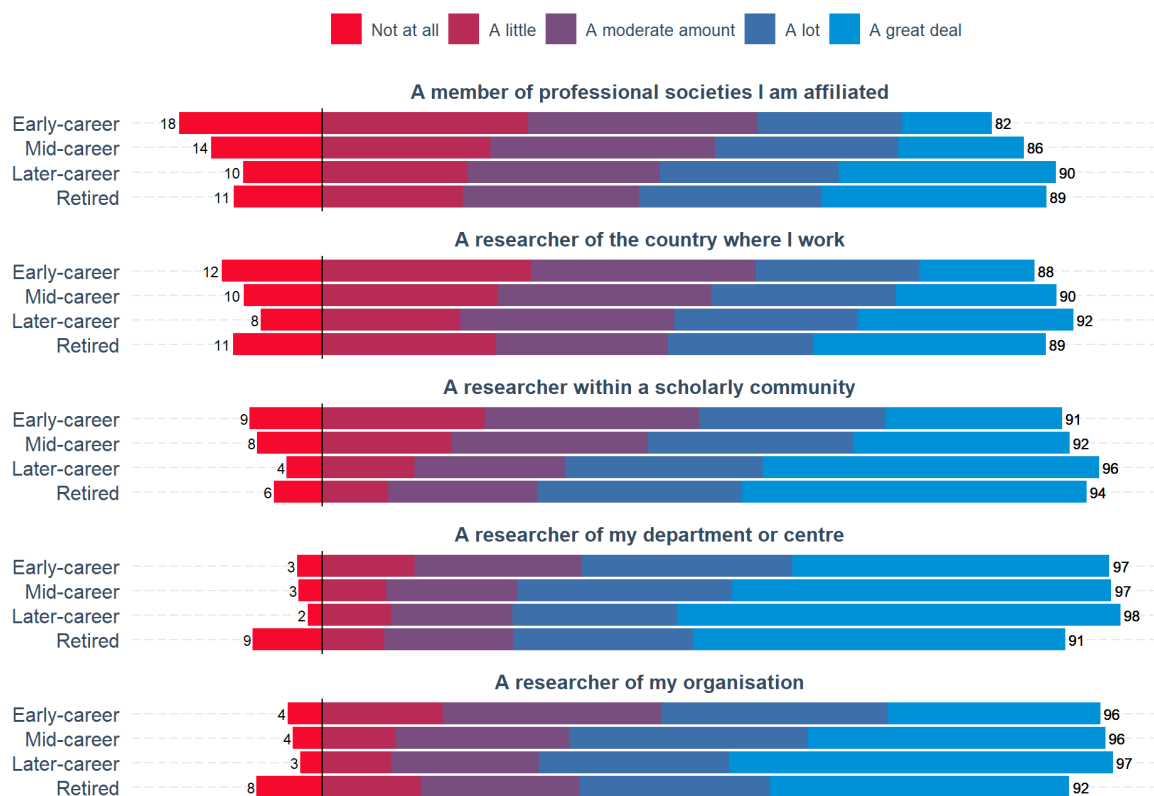


Figure 7.8 The extent to which researchers identify with each item, by career stage

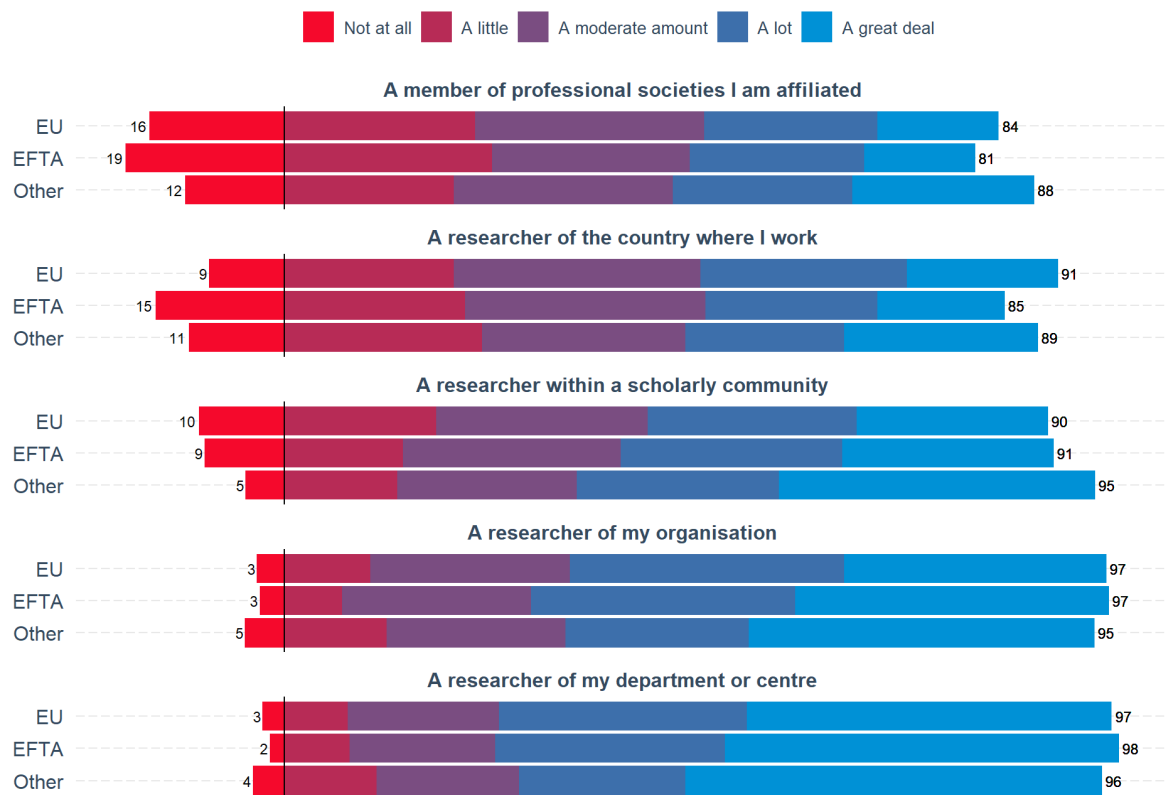


Figure 7.9 The extent to which researchers identify with each item, by geo-political unit

8.4 The Question - Valuing the opinion of one's research

Related to the question of with whom or what researchers identify, respondents were asked whose opinion about their research they value the most. The reference groups included researchers in the country I am currently working, professional societies I am affiliated with, my scholarly community, my organisation, and my department or centre. Respondents were asked to select only one reference group.

8.5 Results

In total, 63 percent of respondents indicated to value the opinion of their scholarly community the most. The remaining respondents were equally distributed over the other categories, including their department or centre (12 percent), their professional society (11 percent), researchers within the same country (8 percent) and researchers within their organisation at large (6 percent). Hence, even though researchers may identify with multiple groups and feel a sense of belonging to various

communities, the vast majority indicate that they value the opinions of their scholarly community - researchers publishing in the same journal or attending the same conferences - the most.

As in the previous set of questions, respondents tended to answer this question consistently across respondent categories and only small differences between respondent demographic categories are apparent. It is notable that researchers in the Humanities value most highly the opinions of their scholarly community (76 percent), while those in the medical sciences indicate the lowest score here (55 percent). The response pattern of the medical scientists is more diverse than others and they show a stronger valuation of opinions from their professional societies (13 percent) compared to the other fields (7 or 8 percent). We also note that, even though respondents from the natural sciences tend to both identify strongly with their organisational context as well as value opinions from those within their organisation, they tend to have the lowest confidence in their organisation ensuring research integrity (see section 4.3.7). There hence seems to be a difference between how they perceive their organisation as an entity on its own and the people working within it.

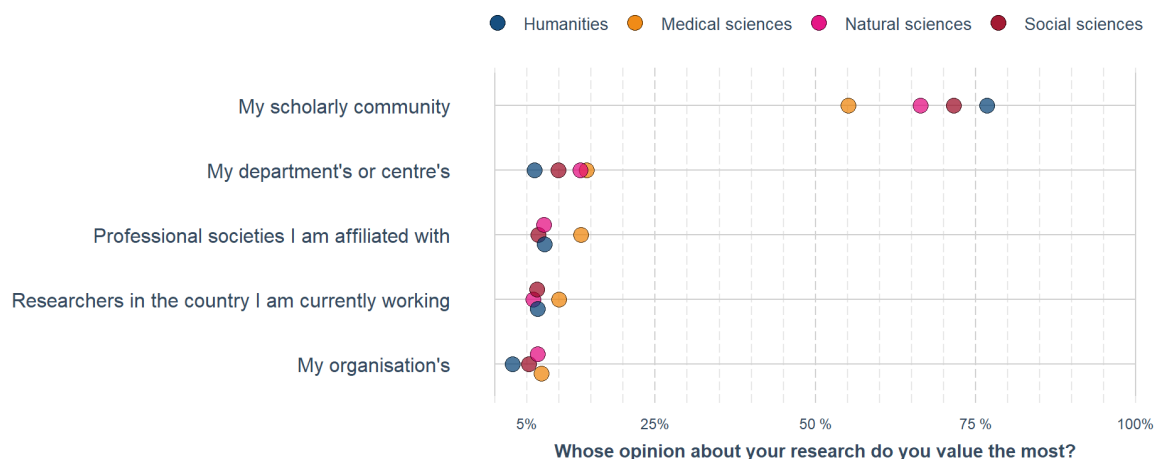


Figure 7.10 The percentage of respondents valuing the opinion of different actors by disciplinary fields.

When differentiating between career stages, a notable difference can be witnessed between early- and mid-career researchers on the one hand, and late-career or retired researchers on the other. Whereas the former are more inclined to value their department members' opinion (13 – 18 percent vs. 5 – 7 percent), the latter value their scholarly communities' opinion more (72 – 75 percent vs. 61 – 62 percent).

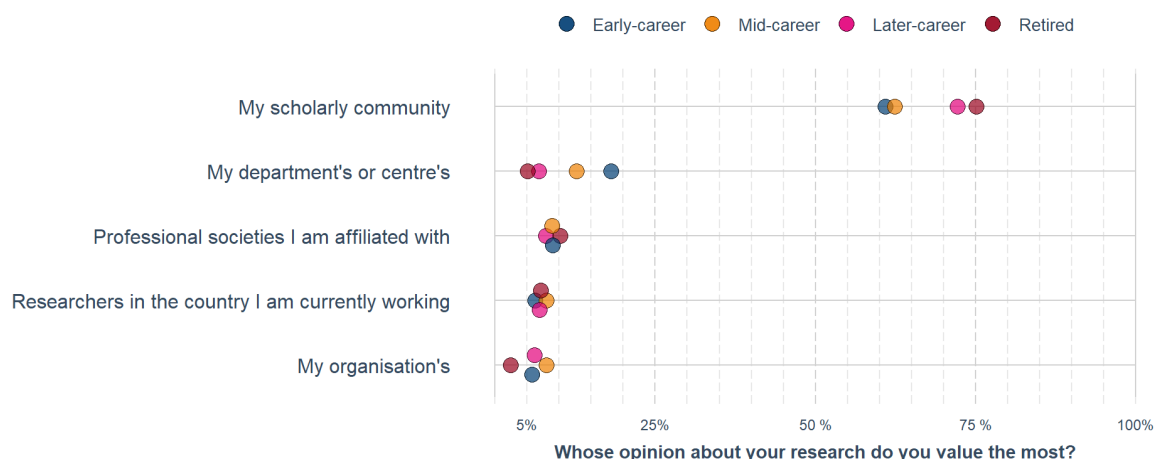


Figure 7.11 The percentage of respondents valuing the opinion of different actors about their own research by career stage.

8.6 The question - Information flow

Lastly, we present findings about how respondents receive information regarding research integrity. For eleven different channels, respondents were asked to what extent they obtained information about research integrity through this channel, ranging from 'No', through 'a little' and 'some', to 'a lot' of information. Lastly, respondents could indicate that a certain channel does not apply to them. The eleven channels included were:

- Organisations providing research guidelines in my country
- Funding organization providing me with money
- My organization
- Senior colleague, supervisor or mentor
- My department or centre
- Organisations providing guidelines internationally
- Professional bodies I am affiliated with
- My scholarly community
- Research collaborators
- Other researchers on social media
- Published editorials or articles in my discipline

8.7 Information Flow - Results

In the descriptions below, we dichotomize the response categories, distinguishing respondents who indicate they obtained no information, from those who indicate they obtained at least a little information.

In general, we note that respondents indicate that they obtained at least a little information from nearly all channels, with only social media being indicated as a source by less than 80 percent of the respondents (75 percent). Among all high scoring other categories, most respondents indicate that they received at least a little information from their research collaborators (96 percent) and from their scholarly community (94 percent). Hence, most information seems to be spread in the daily practices of working together or working on similar research topics. More formal channels such as funding organisations (80 percent), and national (81 percent) or international (84 percent) organisations providing guidelines, are relatively less frequently indicated as information sources.

Comparing between research disciplines, we note that medical scholars indicate that they received information from more channels than scholars from other disciplines, in particular rating 'organisations providing guidelines', both nationally and internationally, higher. Apart from that, responses across the disciplines closely resemble each other.

When comparing respondents in different career stages, we again conclude that information channels are used in similar ways across the categories. Notable differences can nevertheless be spotted between early/mid-career researchers and their more senior or retired colleagues, when it comes to the use of social media as an information channel, as well as – unsurprisingly – the extent to which they receive information from a senior colleague, supervisor or mentor. Both channels are used more frequently by early and mid-career researchers.

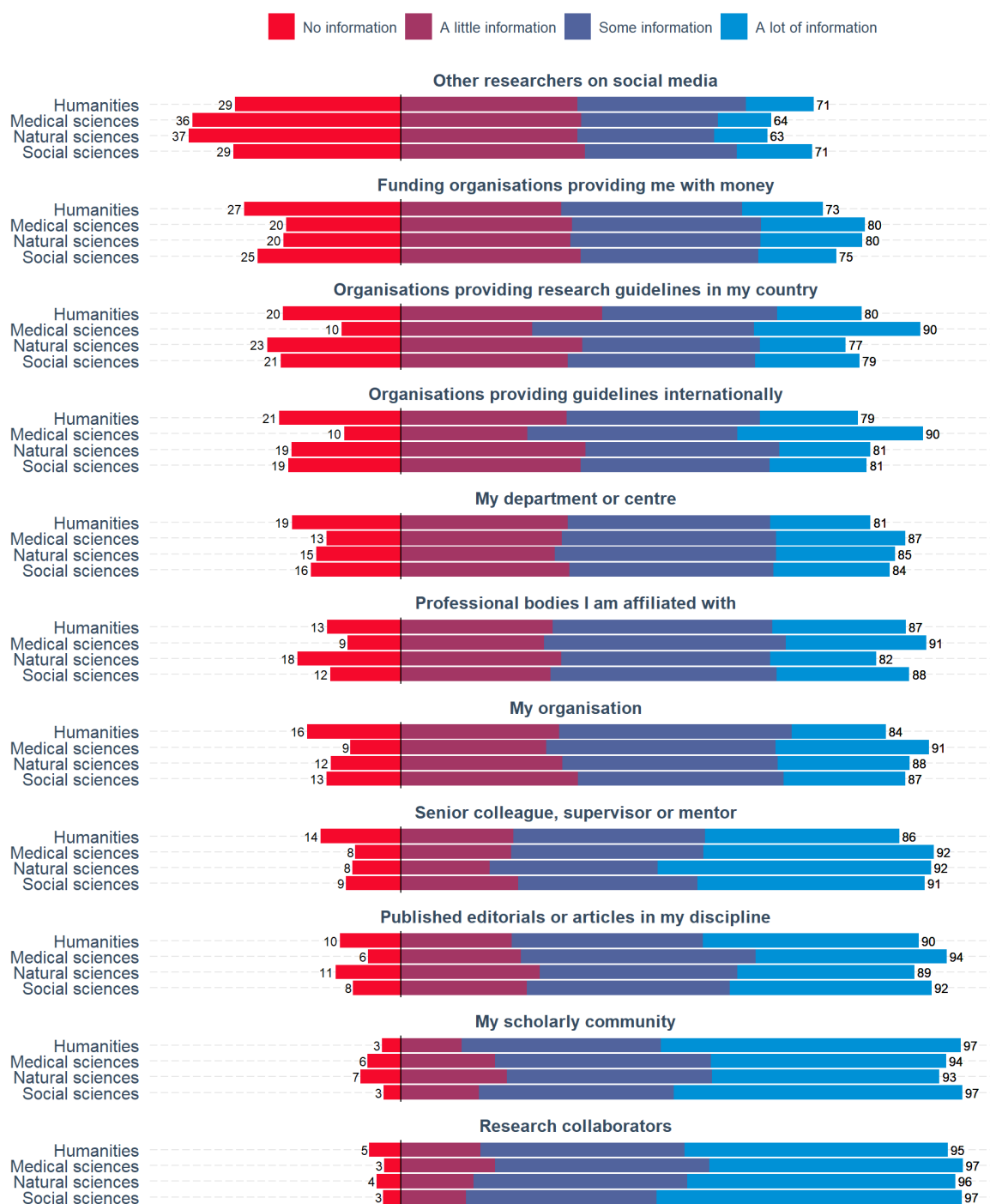


Figure 7.12 The proportion of respondents indicating to receive at least some information regarding research integrity from a specific source by disciplinary fields.

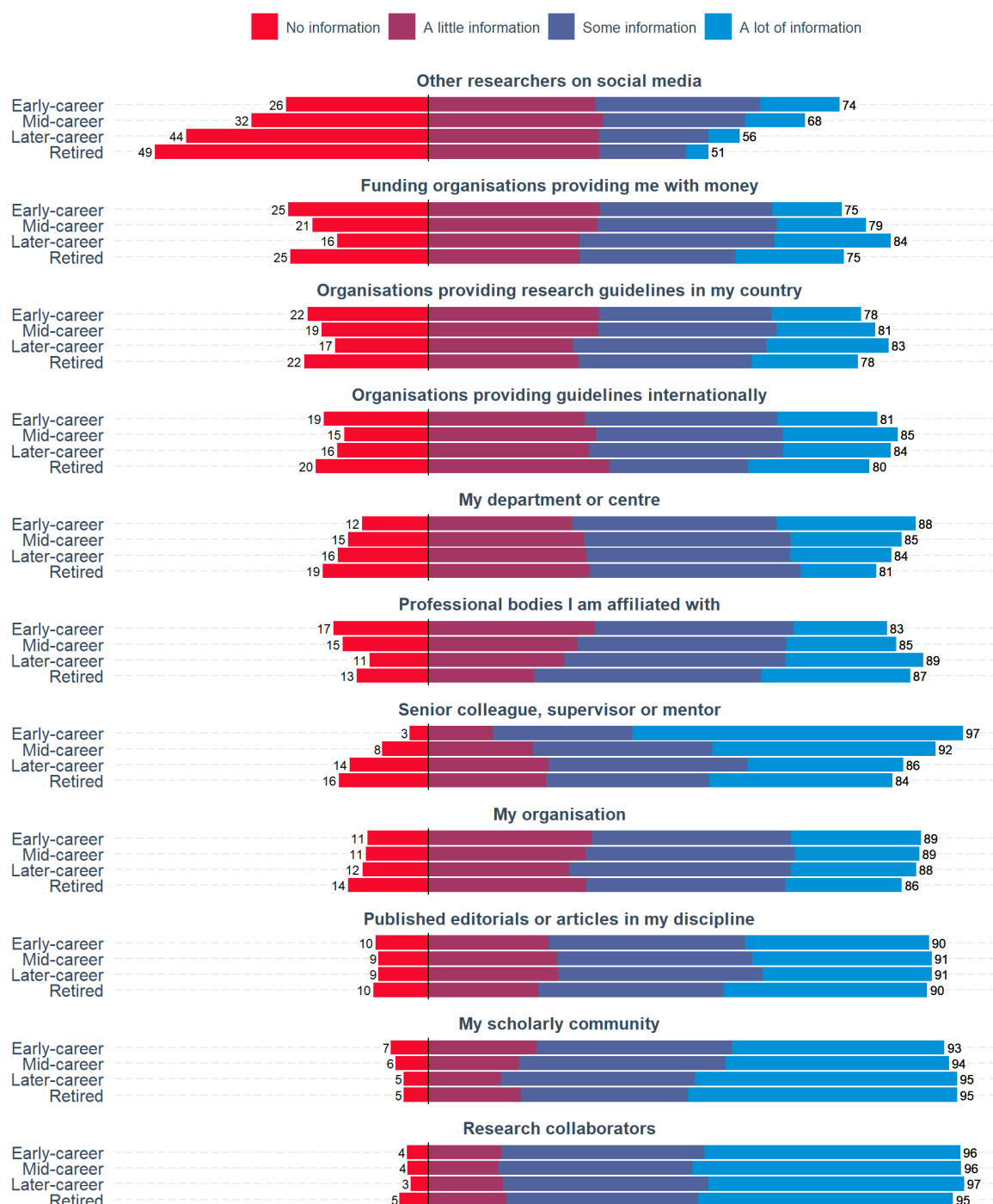


Figure 7.13 The proportion of respondents indicating to receive at least some information regarding research integrity from a specific source by career stage.

8.8 Conclusion

In conclusion, our survey demonstrated that respondents tend to identify with multiple collectives of researchers, including those being institutionally and epistemically close to them. However, when asked whose opinions regarding their research respondents value most, the majority opts for the opinions of researchers in their scholarly community. Only minor differences between researchers from different disciplines or career stages became visible.

Regarding information flow, respondents indicate that they obtained at least a little information from a wide range of channels, with only social media being indicated as a source by less than 80 percent of respondents, mainly due to a lack of usage among late-career and retired researchers.

9. Summary

The main objective of IRIS was to examine the perceived need for organizational research integrity policies and procedures among researchers. It also examined the extent to which researchers engage in QRPs, with which groups they most identify and whose opinions they value the most. The survey investigated motivations for complying with RI policies and researchers' awareness of and beliefs in the efficacy of current organisational policies. How information was communicated to researchers by their organisations was also investigated.

9.1 QRPs

There are non-trivial amounts of questionable or detrimental research practices being carried out. More than half of respondents report that they had included authors on recent publications that had not contributed sufficiently to warrant inclusion, had given inadequate peer reviews of research papers and had inadequately supervised junior co-workers. Just under a quarter said that they have chosen not to report their own findings if they contradict their own theories.

The frequency of QRPs reported does not vary a great deal by career stage, sex or scientific field. The mean number of QRPs admitted to by researchers does vary by country, ranging from more than 2.5 in Greece to 1.8 in the UK. On average, researchers from EU countries were slightly more likely to report QRPs than those outside of the EU.

9.2 RI policies

Just over half of researchers said that their organisation had a written statement on research integrity. Nearly 40 percent did not know whether or not there was one. Medical researchers were more likely than other fields to know about a written statement, as were later career researchers. Only 44 percent of EU researchers were aware, while 62 percent of those from outside Europe were aware. Country variation in awareness is considerable. Between 14 and 38 percent, depending on the RI topic, don't know whether organisational RI policies are effective, although a substantial majority think that they are.

Researchers were asked to rate their own organisations against 'ideal type' situations regarding policies and practice in nine different RI areas. There is considerable variation in opinions about this, with similar proportions rating their own environments as closer or further from the ideal. RI training policies were found less than ideal by a majority. In general, EU researchers believe that their organisations are further from the ideal on RI policies than do researchers outside of Europe.

A majority of researchers has confidence in their organisation to ensure high levels of RI, but as many as 30 percent of EU researchers have little or no confidence. Over a third thinks that RI policies are always or mostly ‘box-ticking’ exercises while 28 percent think that they rarely or never improve the quality of research.

Overall, a substantial majority is generally favourable towards RI policies and has some confidence in their organisations. However, a significant minority is less favourable, less engaged and less confident in their organisation’s ability to ensure high levels of RI.

9.3 Identity, information and motivations

Respondents identify with multiple collectives of researchers, including those being institutionally and epistemically close to them. The majority of respondents value opinions of researchers in their scholarly community more than other reference groups. There is only small variation in this finding between researchers from different disciplines or career stages. Respondents indicate that they receive information regarding research integrity from many different sources. While this is encouraging in principle, it creates the risk of diverse sources conveying dissimilar or even contradicting messages regarding RI.

Researchers are motivated by a range of factors, both intrinsic (more reliable knowledge, more trust by the public and by colleagues) as well as extrinsic (enhanced reputation, higher salary, promotion) The most significant patterning of these ‘motivational pulls’ comes between early and later career researchers. Early career researchers find RI procedures more motivating in general than later career researchers. Medical researchers are more motivated to engage in RI policies than in other fields. Humanities researchers are least motivated. For all groups, salary and promotion prospects were the least motivating factors (although still on average ‘fairly motivating’). For those in temporary contracts, promotion, salary and increased funding opportunities were more motivating than they were for those working under permanent contracts.

The analyses in this report are limited to descriptives and at most to examining association of two variables. No causal inferences should be made. As such, our results should be regarded as a first step in mining these data for insights. In future steps, SOPs4RI consortium members will undertake multivariate analyses focused on particular research questions. It is also our hope that the data from this study, that we will make freely available, will be analysed by other researchers to produce further useful insights about organisational policies on research integrity and how they are perceived by and affect researchers creating new knowledge.

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11. Appendices

11.1 Appendix I. List of countries where Census sampling occurred

Country	Census sampling		
	All fields	Social Sciences	Humanities
Austria	x		
Belgium	x		
Bulgaria	x		
Croatia	x		
Cyprus	x		
Czech Republic	x		
Denmark	x		
Estonia	x		
Finland	x		
Greece	x		
Hungary	x		
Iceland	x		
Ireland	x		
Latvia	x		
Liechtenstein	x		
Lithuania	x		
Luxembourg	x		
Malta	x		
Norway	x		
Portugal	x		
Romania	x		
Slovakia	x		

Country	Census sampling		
	All fields	Social Sciences	Humanities
Slovenia	x		
Switzerland	x		
Australia			x
Canada			x
France			x
Germany			x
Italy			x
Netherlands			x
Poland		x	x
Sweden		x	x

11.2 Appendix II. Survey Development

The survey rationale was developed and agreed in consultation with partners as detailed in protocol document D6.1, submitted in November 2020. Following the submission of deliverable D6.1, a group of survey and topic experts from across work packages met on 20/11/20 to discuss items that should be included within the survey to meet the agreed rationale. A first draft of the survey, drawing on this feedback, was subsequently compiled by WP6 at the University of Essex and circulated for review by the full survey content development team at a meeting on 22/1/21. Following this meeting a smaller working group was formed across work packages 4, 6 and 7 to consider in detail how to test specific issues that had arisen from co-creation workshops in WP4 and how the survey might be used to inform the work of WP7 in pilot testing the output of the wider project within a select group of institutions (meeting 8/2/21).

A second survey draft was circulated for comment following these meetings and was used for cognitive testing (details below) which occurred during the period 22/2/21- 5/3/21.

The wider group met again to discuss the results of cognitive interviews on 10/3/21 and to agree amendments to the survey, prior to fielding a pilot study in April 2021.

A third draft of the survey was created and circulated to a small select group of survey experts, external to the project, for comment, on 23/3/21.

Minor changes were made to produce a fourth draft for further detailed meeting with WP4. Due to the ongoing concurrent work of WP4, final meetings were held on 6th and 7th of April to ensure the most material possible could be tested within the survey, without placing inappropriate burden on the participant.

A fifth draft was produced for pilot testing.

The pilot study ran from 21st April – 12th May. Changes as a result of the pilot study (detailed below) resulted in the final survey instrument which was released at the end of June 2021.

11.2.1 Cognitive testing

Eight cognitive interviews were carried out during the two-week period from 22/2/21-5/3/21. These interviews were intended to serve as a sense check, confirming the usability of the survey and ensuring that key terms were understood. The interviews were conducted by project partners using Microsoft Teams due to covid restrictions. Participants were from the social, natural and medical sciences and humanities. Participants were French Canadian, Portuguese, Greek, Italian, Belgian and Dutch and currently working in Portugal, United Kingdom, Belgium, Denmark and Greece. The interviews, which were conducted both in English and in non-English where that was the mother tongue of both interviewer and interviewee, included junior and senior researchers.

No major issues were presented, except concerns about the length of the “landscape” section where the survey aimed to identify the current landscape within organisations for 9 key research integrity areas. This section was maintained unchanged for the pilot survey due to its particular importance to the project overall but with some changes to how the information was presented to respondents. Only minor changes elsewhere in the survey were made as a result of the feedback

received. These included providing a clearer definition of what was meant by research for assessing how much time was spent engaging in research; improving progression through the survey by removing or shortening misleading or over-lengthy introductions to new sections; and providing “don’t know” as a response option when evaluating the effectiveness of institutional guidelines.

The accidental inclusion of ‘Politics, Religion and Ethics’ instead of ‘Philosophy, Religion and Ethics’ was raised but misinterpreted and consequently this error was not corrected.

11.2.2 Pilot testing

Following the cognitive testing, a simple random sample of 5000 email addresses were selected from the sampling frame of 3.2 million email addresses for a pilot study which ran from 21st April to 12th May 2021. 300 responses were generated from 5000 emails, at a rate of 6 percent although approximately 14 percent of emails were not delivered. Of those who had a chance to receive the email, 7 percent responded.

Several experiments to test the impact of using different communication methods on survey participation were included at the pilot stage. These included personalised and non-personalised email communication; wording the survey invitation either as offering a chance to participate or entreating for assistance; sending correspondence at different times of day; and changing the amount of time between communication stages (prenotification, invitation and reminders).

No substantial difference was found in the response rates of those with emails sent at different times of day (OR 1.03, $p=0.8$), or different style of email (OR 1.04, $p=0.7$). The odds of a person taking the survey with longer gaps between sending the survey and a subsequent reminder were slightly lower, but this was not statistically significant (OR 0.92, $p=0.475$). However, sending personalised correspondence did increase the odds of responding (OR 1.43, $p=0.003$).

The impact of survey length on survey completion, and whether the inclusion of potentially invasive questions about questionable research practices would cause respondents to break off from answering the survey were also tested by randomly assigning respondents to a shorter or longer version of the survey and placing the QRP questions at different points in the survey. There was no difference in the percentage of people who completed the survey in the groups with the long or short surveys and no-one dropped out during this set of questions about questionable research practices. The bulk of survey breakoff occurred at the consent/eligibility or demographics stages before the survey started (62 percent) and during the lengthy landscape section (25 percent).

The findings of the pilot study led to the following changes prior to releasing the mainstage survey. Sampling frame data was further cleaned by the team at Aarhus, removing typos in email addresses and identifying probable duplicate cases, to increase the number of deliverable emails. Algorithms were used to identify probable names from email addresses to assist in sending personalised correspondence.

Following feedback from participants, greater emphasis was placed in the invitation text and in the opening two screens of the survey on the study being relevant for all fields. Additional text was added at the start of the survey to better introduce respondents to the topic (“Honesty, accounta-

bility, reliability and respect are really important principles for the conduct of research and scholarship in all fields of enquiry, but principles are often hard to put into practice. In this survey we will be exploring some of these ideas with you and we hope you will share your own views and experience with us.”)

We removed potential barriers for those respondents who were wavering or undecideds about participating and who might be more easily persuaded to break off at the beginning. Consent was moved to the email invitation text such that clicking on the email link was confirmation of consent, rather than during the Qualtrics survey itself. Demographic questions that could sit naturally in other sections were moved from the beginning to make the survey more interesting earlier on and a question on age which we did not feel was adding anything to the analysis, was replaced with a question on sex on the assumption that there may be interest in analysing women in science.

To reduce missingness and survey breakoff during the landscape section, one question was removed, the descriptions of each of the 9 RI areas were shortened and the carousel-style format was replaced with a matrix.

Given the importance of the survey topic and that the pilot study showed that survey length did not increase survey breakoff, the full version of the survey was maintained.

In relation to eligibility, on learning that automatically excluding respondents on the grounds of their not having a PhD might systematically exclude participants from certain fields or countries where currently or historically a PhD was not a requirement for a career in research, we no longer fielded respondents out of the survey at this point, although we continued to state that the survey was intended for those with a PhD or equivalent.

Additionally, we added an option for those who are retired to tell us so and included additional text to explain to those who are not employed or retired that we would value their input, but we ask a number of questions that related to organisations. They were asked to think of their most recent organisational affiliation when answering questions.

Response rates for the pilot study were used to calculate the sample size required.

11.3 Appendix III. Survey content

11.3.1 Demographics

The individual field categories listed as response options in the survey were taken from the Frascati manual. Fields were subsequently grouped into 4 categories which were condensed from the 6 Frascati manual categories as follows.

- Natural Sciences => Natural sciences (including technical science)
- Engineering and technology => Natural sciences (including technical science)
- Medical and health sciences => Medical sciences (including biomedicine)
- Agricultural and veterinary sciences => Natural sciences (including technical science)
- Social sciences => Social sciences
- Humanities and the arts => Humanities

The countries of interest for our study were:

- 27 European Union countries
- 4 European Financial Trade Agreement Countries
- 4 other countries of interest for comparison (UK, Canada, Australia and America).

A remaining list of countries taken from a Qualtrics response option library were included at the end of the list of countries of interest.

11.3.2 Science Values

Our science values questions were modified from the following three studies:

Topic	Question	Source
Universalism	<i>Do you think that researchers should always publish findings that are scientifically sound, even if they are contrary to their personal or political beliefs?</i>	Bray & Storch 2017
Communism	<i>Do you think that researchers should openly share new findings with colleagues?</i>	Martinson, Anderson & De Vries 2005

Topic	Question	Source
Disinterested-ness	<i>Do you think that intellectual work should be influenced by personal beliefs and values?</i>	Bray & Storch 2017
Disinterested-ness	<i>Do you think that researchers should change their research interests to access funding opportunities?</i>	MacFarlane & Cheung 2008
Organised Scepticism	<i>Do you think that researchers should consider all new evidence, hypotheses, theories, and innovations, even those that challenge or contradict their own work?</i>	Martinson, Anderson and De Vries, 2005

11.3.3 Questionable Research Practices (QRPs)

We drew on the experience of two previous surveys when compiling questions about this potentially sensitive topic area, the National Survey of Research Integrity (NSRI) study ([OSF | National Survey on Research Integrity](#)) and PRINT (PRINT@CFA, 2021).

Our question format was taken from NSRI.

NSRI Question:

Please specify how often you engage in the research practices listed on the following screens. If the research practice does not apply to you, please select 'Not applicable'.

[In the last three years, I]

SOPs4RI Question:

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

Most example QRPs came from the PRINT survey, although one came from NSRI and one we included ourselves. We adapted the wording to suit our purposes. Our wording is shown in the table below alongside the source and question topic.

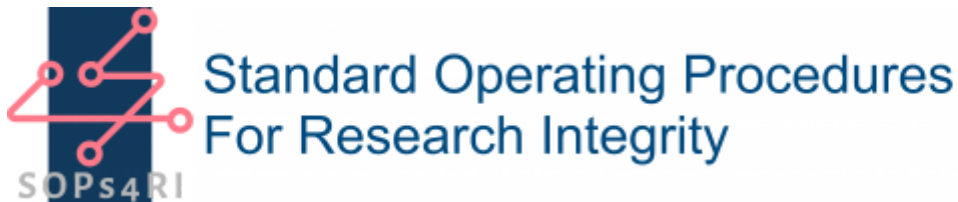
Topic	Question	Source
Selective citing	Wilfully failing to cite relevant publications that contradict your own beliefs, theories, hypotheses, methods or findings.	PRINT
Reviewing	When reviewing a manuscript, not investing the effort necessary to conduct a thorough review.	PRINT
Selective Reporting	Choosing not to report your findings if they could weaken or contradict your theories or hypotheses.	PRINT
Recycling	Deliberately using another researcher's unpublished idea without giving credit. For example, publishing an idea voiced by a colleague at an informal meeting without giving them credit.	PRINT
Authorship	In a publication, failing to disclose relevant personal, financial, political or intellectual conflicts of interests.	PRINT
Authorship	Including authors on a paper who had not contributed sufficiently to the work to merit authorship.	PRINT
Supervision	Inadequately supervising or mentoring junior co-workers.	NSRI
Ethical Approval	Carrying out research without getting the required ethical approval.	SOPs4RI

11.3.4 Full Questionnaire



SOPs4RI_UESSEX_W
P6_finalsurvey.pdf

Eligibility



Thank you for agreeing to participate in this survey on research integrity. Every response is valuable and will contribute towards improving the quality of research in the future. We appreciate your insights.

This is a survey for researchers in all fields, including the arts & humanities, social sciences, natural, medical, agricultural and veterinary sciences, engineering and any other. We are interested in those who have already completed doctoral level training or equivalent. You can find out more about our project [here](#) and our ethical review outlining how we will protect your data [here](#).

You are free to withdraw at any point.

The Standard Operating Procedures for Research Integrity (SOPs4RI) has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No. 824481

Ethical approval reference number ETH2021-0441

Demographics

Honesty, accountability, reliability and respect are really important principles for the conduct of research and scholarship in all fields of enquiry, but principles are often hard to put into practice. In this survey we will be exploring some of these ideas with you and we hope you will share your own views and experience with us.

We are interested in analysing field differences. We want to know in which field you **mainly** work. Please select your field from the options below.

(We are using the fields of research and development (FORD) classification from the OECD Frascati manual. Please select the category that most closely matches your main field of work. We understand it is possible to work across more than one field, but please indicate the one that best describes what you mainly do.)

Natural sciences

- Biological sciences
- Chemical sciences
- Computer and information sciences
- Earth and related environmental sciences
- Mathematics
- Physical sciences
- Other natural sciences

Engineering and technology

- Civil engineering

- Chemical engineering

Please could you indicate your highest qualification.

☐ PhD / DPhil / Doctorate

- ☐ Masters Degree
- ☐ Undergraduate Degree

Was your doctoral training also in
\$_{q://QID54/ChoiceGroup/SelectedChoices}\$?

- ☐ Yes
- ☐ No

Which best describes the research discipline or sector your completed your doctoral training in?

Natural sciences

Biological sciences
Chemical sciences
Computer and information sciences
Earth and related environmental sciences
Mathematics
Physical sciences
Other natural sciences

Engineering and technology

Chemical engineering
Civil engineering

We are also very interested in analysing country differences. Please could you tell us in which country your employer is currently based.

Please select...



It is very important to our study to know which country you are currently working in. If you missed this question, please click the back button below and enter this information. If you prefer not to tell us, please click the forward button to continue with the survey.

Is \${q://QID241/ChoiceGroup/SelectedChoices} the country where you are based most of the time?

- ☐ Yes
- ☐ No

Is \${q://QID241/ChoiceGroup/SelectedChoices} the country where you obtained your PhD?

- ☐ Yes
- ☐ No

In which country are you currently based?

Please select...



In which country was your PhD awarded?

Please select...



In which country did you spend most of your life until you were aged 18?

Please select...



Could we just check your level of English?

- ☐ Fluent
- ☐ Intermediate
- ☐ Basic

What best describes your current career stage?

- ☐ Early-career (e.g. postdoc, assistant professor, junior researcher)
- ☐ Mid-career (e.g. associate professor, senior researcher)
- ☐ Later-career (e.g. full professor, dean, director of research)
- ☐ Retired

As someone who has published recently, we value your opinions. Some of our questions relate to organisations. If you are not still affiliated with an organisation, please think of your most recent organisation when answering the following questions.

In what year were you awarded your PhD (or equivalent doctoral qualification)?

Please select...



What is your sex?

- ☐ Female
- ☐ Male
- ☐ Prefer not to say

And lastly, what type of employment contract do you currently hold?

- ☐ Permanent
- ☐ Temporary
- ☐ No employment contract (e.g. self-employed)

As an active researcher we value your opinion on these issues. Some of the following questions relate to research organisations. If you are not currently affiliated with an organisation then please think about an organisation with which you have been affiliated in the past when answering these questions.

Identity

Thank you for your responses so far. We are now going to ask you a few questions concerning how you feel about being part of the research culture around you.

Thinking about your role as a researcher, how much do you identify as each of the following:

	Not at all	A little	A moderate amount	A lot	A great deal	Does not apply
A researcher of my department or centre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A researcher of my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A researcher of the country where I am currently working	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A member of professional societies I am affiliated with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A researcher within a scholarly community (e.g. Researchers publishing in the same journals as me)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In your current job, how much of your working time would you say you spend on research (including applying for research grants and research-related activities as opposed to for instance, teaching, general administration or management).

- ☐ All of my time
- ☐ About two-thirds of my time
- ☐ About half of my time
- ☐ About one-third of my time
- ☐ None of the time

Whose opinion about your research do you value the most?

(Even though you may value the opinion of all those mentioned, please say the most important to you.)

- ☐ My department's or centre's
- ☐ My organisation's
- ☐ Researchers in the country I am currently working
- ☐ Professional societies I am affiliated with
- ☐ My scholarly community (e.g. Researchers publishing in the same journals as me)

Knowledge about best practice for research comes from a variety of sources. How much information about good practices in your field do you get from the following sources?

	No information	A little information	Some information	A lot of information	Does not apply
Professional bodies I am affiliated with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Funding organisations providing me with money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other researchers on social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My department or centre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Published editorials or articles in my discipline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	No information	A little information	Some information	A lot of information	Does not apply
Organisations providing research guidelines internationally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My scholarly community (e.g. Researchers publishing in the same journals as me)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organisations providing research guidelines in my country	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research collaborators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Senior colleague, supervisor or mentor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

And please could you tell us which of these best describes your current workplace?

- ☐ Academia / University
- ☐ Industry
- ☐ Not-for-profit research institute
- ☐ Government research centre
- ☐ Healthcare setting
- ☐ Other

Values

We are now going to ask you some general questions about your own beliefs and values.

The following few questions will describe a set of behaviours. We are interested to know whether you personally feel that these behaviours are the way researchers should behave (we are not asking you what researchers actually do, but what you think they should do).

Do you think that researchers should always publish findings that are scientifically sound, even if they are contrary to their personal or political beliefs?

- ☐ Yes, always should
- ☐ Usually should
- ☐ Sometimes should
- ☐ Rarely should
- ☐ No, never should

Do you think that researchers should openly share new findings with colleagues?

- ☐ Yes, always should
- ☐ Usually should
- ☐ Sometimes should
- ☐ Rarely should

☐ No, never should

Do you think that intellectual work should be influenced by personal beliefs and values?

☐ Yes, always should

☐ Usually should

☐ Sometimes should

☐ Rarely should

☐ No, never should

Do you think that researchers should change their research interests to access funding opportunities?

☐ Yes, always should

☐ Usually should

☐ Sometimes should

☐ Rarely should

☐ No, never should

Do you think that researchers should consider all new evidence, hypotheses, theories, and innovations, even those that challenge or

contradict their own work?

- ☐ Yes, always should
- ☐ Usually should
- ☐ Sometimes should
- ☐ Rarely should
- ☐ No, never should

Please select the response below which most closely matches where you think responsibility should lie for ensuring the highest standards of research.

- ☐ It is up to me to carry out research to the highest standard without any oversight from my organisation
- ☐ It is up to me to carry out research to the highest standard with some oversight from my organisation
- ☐ It is up to me to carry out research to the highest standard with a lot of oversight from my organisation

Research organisations often have policies that aim to enhance research integrity. By **research integrity** we mean the attitude and habits of researchers in conducting their research according to appropriate ethical, legal and professional frameworks, obligations and standards. It describes an approach for conducting and organising good scientific work.

People have different views on how effective and worthwhile these policies are. We'd like to know what you think.

Beliefs

Do you think research integrity policies are just "box-ticking" exercises (by which we mean satisfying bureaucratic administrative requirements rather than assessing the actual merit of the policies)?

- ☐ Always box-ticking exercises
- ☐ Mostly box-ticking exercises
- ☐ Sometimes box-ticking exercises
- ☐ Rarely box-ticking exercises
- ☐ Never box-ticking exercises

Do you think that research integrity policies help to improve the quality of your research?

- ☐ Always improve the quality of my research
- ☐ Mostly improve the quality of my research
- ☐ Sometimes improve the quality of my research
- ☐ Rarely improve the quality of my research
- ☐ Never improve the quality of my research

Positivity towards training

Suppose that your organisation sends you an email inviting you to attend a research integrity masterclass on some aspect of research integrity that interests you.

How would you feel about attending it?

- ☐ Very positive
- ☐ Positive
- ☐ Neither positive or negative
- ☐ Negative
- ☐ Very negative

Suppose that your organisation sends you an email inviting you to attend a research integrity training session on some aspect of research integrity that interests you.

How would you feel about attending it?

- ☐ Very positive
- ☐ Slightly positive
- ☐ Neither positive or negative
- ☐ Slightly negative
- ☐ Very negative

Suppose that your organisation sends you an email requiring you to attend a research integrity masterclass on some aspect of research integrity that interests you.

How would you feel about attending it?

- ☐ Very positive
- ☐ Slightly positive
- ☐ Neither positive or negative
- ☐ Slightly negative
- ☐ Very negative

Suppose that your organisation sends you an email requiring you to attend a research integrity training session on some aspect of research integrity that interests you.

How would you feel about attending it?

- ☐ Very positive
- ☐ Slightly positive
- ☐ Neither positive or negative
- ☐ Slightly negative
- ☐ Very negative

Landscape

We are now going to ask you in more detail about research integrity in the place where you work.

First of all, does your research institution have a written statement on research integrity?

- ☐ Yes
- ☐ No
- ☐ I don't know

How was this communicated to you?

(Please tick all that apply)

- ☐ Formal event
- ☐ Formal communication
- ☐ Informal communication (eg colleague)
- ☐ I looked for it myself
- ☐ I can't remember
- ☐ Other

In general, how much confidence do you have that the management in your organisation is effective in ensuring a high level of research integrity?

- ☐ Complete confidence
- ☐ A great deal of confidence
- ☐ Some confidence
- ☐ Not much confidence
- ☐ No confidence

We are now going to ask you about research integrity topics that other researchers have identified as being particularly important.

For each of the following descriptions, how closely does this resemble your working environment?

	Resembles my environment very closely	Resembles my environment closely	Resembles my environment somewhat closely	Resembles my environment not very closely	Resembles my environment not at all closely
Working Environment Collegial, and without harmful publication pressure, detrimental power imbalances or conflict.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supervision and Mentoring Supervisors encourage responsible research practices and are selected if they meet specified criteria. Guidelines are in place for the supervision and mentoring of researchers at different career stages.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrity Training Training in research integrity is provided to all researchers, at all career stages, by qualified trainers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ethics Structures Dedicated and adequately trained research ethics committees are in place. Ethics reviews are relevant to various research areas and disciplines within the organisation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Resembles my environment very closely	Resembles my environment closely	Resembles my environment somewhat closely	Resembles my environment not very closely	Resembles my environment not at all closely
Integrity Breaches Researchers can consult a qualified person in confidence with any research integrity concerns. Breaches are detected and sanctioned in a fair and standardized way, protecting both whistleblowers and those accused of misconduct.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Management Infrastructure is in place for storing and sharing data securely and complies with national and international regulations. Guidance on secure data management is provided.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research Collaboration Support is offered for ensuring responsible research collaboration can occur across disciplines, sectors or countries where guidelines and legislation may differ.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Declaration of Interests There is transparency and guidance in how to declare conflicts of interests in: research conduct; funding; peer review; promotion; and collaboration across sectors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Resembles
my
environment
**very
closely**

Resembles
my
environment
closely

Resembles
my
environment
**somewhat
closely**

Resembles
my
environment
**not very
closely**

Resembles
my
environment
**not at all
closely**

Publication and Communication

Open access and clarity in public engagement are encouraged. Researchers are supported with publication matters such as preregistration, reproducibility, handling authorship disputes, responsible peer review practices.



Thinking about the things that you just read about, are you aware of any policies that exist within your organisation which address the following research integrity areas?

Please select all that apply.

- ☐ **Working Environment**
Collegial, without harmful pressure or conflict
- ☐ **Supervision and Mentoring**
Supervisors encourage responsible research; guidelines for supervising different career stages
- ☐ **Integrity Training**
Training for all researchers at all stages in research integrity
- ☐ **Ethics Structures**
Dedicated and adequately trained research ethics committees, relevant to discipline
- ☐ **Integrity Breaches**
Standardized and fair approach to managing breaches of research integrity
- ☐ **Data Management**
Infrastructure in place for safe handling of data; guidance and training on data management

- ☐ **Research Collaboration**
Guidelines to ensure research collaboration can be done responsibly where legislation may differ
- ☐ **Declaration of Interests**
Transparency in declaring interests
- ☐ **Publication and Communication**
Open access encouraged; advice on publication matters such as authorship, peer review

You told us that you are aware of policies in your organisation in the following areas. For each of these areas, do you think the policies in your organisation are effective as they are?

	Yes	No	Don't know
Working Environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supervision and Mentoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrity Training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ethics Structures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrity Breaches	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research Collaboration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Declaration of Interests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Publication and Communication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Most/least important

Thank you for taking the time to answer our questions about research integrity so far.

We would now like to know, for each of the following research integrity areas, how important do you think it is for ensuring high quality research integrity in your field?

	Not important at all	Somewhat important	Fairly important	Very important	Extremely important
Research Collaboration Guidelines to ensure research collaboration can be done responsibly where legislation may differ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Declaration of Interests Transparency in declaring interests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supervision and Mentoring Supervisors encourage responsible research; guidelines for supervising different career stages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working Environment Collegial, without harmful pressure or conflict	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ethics Structures Dedicated and adequately trained research ethics committees, relevant to discipline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Publication and Communication Open access encouraged; advice on publication matters such as authorship, peer review	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not important at all	Somewhat important	Fairly important	Very important	Extremely important
Integrity Training Training for all researchers at all stages in research integrity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data Management Infrastructure in place for safe handling of data; guidance and training on data management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrity Breaches Standardized and fair approach to managing breaches of research integrity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Confidence

Overall, how confident are you that your research is meeting high standards of research integrity?

- ☐ Very confident
☐ Somewhat confident
☐ Not very confident
☐ Not at all confident

Are there any areas where you would value additional support?

(Please select all that apply)

- ☐ Working Environment
☐ Supervision and Mentoring

- ☐ Integrity Training
- ☐ Ethics Structures
- ☐ Integrity Breaches
- ☐ Data Management
- ☐ Research Collaboration
- ☐ Declaration of Interests
- ☐ Publication and Communication

Benefits

And now, how motivating would each of the following factors be in encouraging you to adhere to formal research integrity procedures?

	Not at all motivating	Somewhat motivating	Fairly motivating	Very motivating	Extremely motivating
Better reputation in my field	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Higher salary or income	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased funding opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased self-confidence in my research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More trust in my research by the general public	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More trust in my research by my peers or colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased chance of promotion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not at all motivating	Somewhat motivating	Fairly motivating	Very motivating	Extremely motivating
Being able to publish in higher status outlets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilitates collaboration with other researchers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More reliable scientific knowledge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

QRPs introduction

The next few questions are about questionable research practices (QRPs). These are less than ideal research practices which might happen unintentionally. They are not research misconduct (ie fabrication, falsification, or plagiarism).

We will present you with a set of research practices and ask you to what extent you have engaged in them when working towards producing your **publications over the last three years**.

The next few questions are about questionable research practices (QRPs). These are less than ideal research practices which might happen unintentionally. They are not research misconduct (ie fabrication, falsification, or plagiarism).

We will present you with a set of research practices and ask you to what extent you have engaged in them when working towards producing your **publications over the last three years**.

(You will notice that response options for the next few questions will be provided in your assumed native language. This is to help us with a methodological study we are conducting. We thank you for your participation.)

QRPs loop

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

`#{Im://Field/1}`

- ☐ Nie
- ☐ Fast Nie
- ☐ Manchmal
- ☐ Oft
- ☐ Trifft nicht zu

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

`#{Im://Field/1}`

- ☐ Nie
- ☐ Selten
- ☐ Gelegentlich

- ☐ Oft
- ☐ Trifft nicht zu

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

`#{Im://Field/1}`

- ☐ Mai
- ☐ Quasi mai
- ☐ A volte
- ☐ Spesso
- ☐ Non pertinente

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

`#{Im://Field/1}`

- ☐ Nikada
- ☐ Gotovo nikada
- ☐ Ponekad
- ☐ Često
- ☐ Ne primjenjuje

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

`\${Im://Field/1}`

- ☐ Nunca
- ☐ Quase nunca
- ☐ Algumas vezes
- ☐ Muitas vezes
- ☐ Não se aplica

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

`\${Im://Field/1}`

- ☐ Nigdy
- ☐ Prawie nigdy
- ☐ Od czasu do czasu
- ☐ Często
- ☐ Nie dotyczy

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

`\${Im://Field/1}`

- ☐ Nunca
- ☐ Casi nunca
- ☐ A veces
- ☐ A menudo
- ☐ No se aplica

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

$\${\text{Im:} // \text{Field} / 1}$

- ☐ Jamais
- ☐ Presque jamais
- ☐ Parfois
- ☐ Souvent
- ☐ Ne s'applique pas

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

$\${\text{Im:} // \text{Field} / 1}$

- ☐ Nikdy
- ☐ Téměř nikdy
- ☐ Někdy
- ☐ Často
- ☐ Neplatí

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

\$_{Im://Field/1}

- ☐ Ποτέ
- ☐ Σχεδόν ποτέ
- ☐ Μερικές φορές
- ☐ Συχνά
- ☐ Δεν ισχύει

Thinking about research carried out for your publications over the last three years, how often has the following occurred?

\$_{Im://Field/1}

- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never
- ☐ Does not apply in my case

Introduction to training and supervision sections

Many thanks indeed for your responses so far. We are almost at the end of the survey.

The SOPs4RI project will provide a toolbox of policies, guidelines and procedures to help organisations support their staff in the responsible conduct of research. Extensive work has been carried out with experts to identify those areas researchers consider to be the most important for ensuring research integrity.

We value your opinion as an active researcher, and in a moment we will ask you briefly for your opinions about research integrity in a small sample of those areas. You will have the opportunity to tell us anything else that you wish in free text space provided, on the topic of research integrity in these areas.

Finally we will provide two ideas for improving research integrity for you to comment on.

Training section

How important would the following features be in encouraging you to participate in a research integrity training course?

	Not important at all	Somewhat important	Fairly important	Very important	Extremely important
Intellectually stimulating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Applicable across multiple fields	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Takes a short amount of time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Available online in your own time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Of practical use to me in my research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not important at all	Somewhat important	Fairly important	Very important	Extremely important
Would help me supervising staff / students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enjoyable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delivered face to face with the trainer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would help me making grant applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How important are the following characteristics for you, that a research integrity trainer should have?

	Not important at all	Somewhat important	Fairly important	Very important	Extremely important
Specialist knowledge of research integrity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Member of my own department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In-depth knowledge of my own field	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being an active researcher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Respected in their field	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
External to my organisation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Mentoring and Supervision

How important do you think the following features are for promoting supervision of the highest quality?

	Not important at all	Somewhat important	Fairly important	Very important	Extremely important
Tangible rewards for good supervision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Support structures in place for the well-being, care and mental health issues of supervisee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Procedure in place to change supervisor if necessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Evaluation structures for supervision in place	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In your current role do you have responsibility for supervising research staff or doctoral students?

- ☐ Yes
- ☐ No

And how positive do you feel about having supervisory responsibilities?

- ☐ Very positive
- ☐ Positive
- ☐ Neither positive nor negative
- ☐ Negative
- ☐ Very negative

How confident are you that you are meeting the needs of your supervisees?

- ☐ Very confident
☐ Somewhat confident
☐ Not very confident
☐ Not at all confident

How important are the following characteristics for you, that a supervisor should have?

	Not important at all	Somewhat important	Fairly important	Very important	Extremely important
Ability to act as exemplar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledge of institutional support structures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Familiarity with PhD or relevant procedures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to engage supervisee in decision-making process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to provide personal guidance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to communicate effectively with supervisees from different cultures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not important at all	Somewhat important	Fairly important	Very important	Extremely important
Ability to create balance between providing support and facilitating independence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Evaluation

In the course of our research, experts have derived an expanded list of potential criteria on which researchers could be evaluated which goes beyond the quality of their research alone. When a researcher's performance is being evaluated by an employer or potential employer, how important do you think it is to include each of the following activities in making an assessment of their performance?

	Not important at all	Somewhat important	Fairly important	Very important	Extremely important
Societal impact of their research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Peer review	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Editorship of journals and other publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supervisory responsibilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outreach and communication of research to public audiences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Not important at all	Somewhat important	Fairly important	Very important	Extremely important
Publication metrics (eg Journal Impact Factor, H index)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collegiality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participation in, or delivery of, research integrity training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Research integrity free text

Please add any further thoughts you may have about research integrity relating to training, evaluation and supervision. Please feel free to include your experience, your opinions, ideas or suggestions. Please do not mention the names of individuals or organisations or include any other identifying information.

Two SOPs introduction

We now have two final ideas that we would like you to comment on. These have emerged from our discussions with other researchers.

Two SOPs

Im:Field/1

Does this already happen in your organisation?

- ☐ Yes
- ☐ No
- ☐ Don't know

Im:Field/1

Do you think this is a good idea or not?

- ☐ Extremely good idea
- ☐ Very good idea
- ☐ Good idea
- ☐ Neither good nor bad idea
- ☐ Bad idea
- ☐ Very bad idea
- ☐ Extremely bad idea

End of survey

Finally, if you have any comments you would like to make on any aspects of this survey or this study as a whole, or more generally about

research integrity issues, please make them here.

You can also give very quick feedback to inform our survey design using the response options below.



Do you think the survey was too short, about right, or too long?

- ☐ Too short
- ☐ About right
- ☐ Too long

Did you find it easy or hard to complete the questionnaire?

- ☐ Easy
- ☐ Neither easy nor hard
- ☐ Hard

And, taken as a whole, did you find the survey very interesting, interesting or not at all interesting?

- ☐ Very interesting
- ☐ Interesting
- ☐ Not at all interesting

Your participation has been very helpful to us. Would you be prepared to take part in future research by our research team?

- ☐ Yes
- ☐ No

Powered by Qualtrics

Question 12.1 Questionable Research Practices

Wilfully failing to cite relevant publications that contradict your own beliefs, theories, hypotheses, methods or findings.

When reviewing a manuscript, not investing the effort necessary to conduct a thorough review.

Choosing not to report your findings if they could weaken or contradict your theories or hypotheses.

Deliberately using another researcher's unpublished idea without giving credit. For example, publishing an idea voiced by a colleague at an informal meeting without giving them credit.

In a publication, failing to disclose relevant personal, financial, political or intellectual conflicts of interests.

Including authors on a paper who had not contributed sufficiently to the work to merit authorship.

Inadequately supervising or mentoring junior co-workers.

Carrying out research without getting the required ethical approval.

Question 19.1 Standard Operating Procedures Items

Mandatory research integrity training should be integrated in the curriculum for Bachelor, Master, and PhD students.

All researchers should be required to complete research integrity training every 2-3 years to update their knowledge.

All researchers starting a new position should be required to complete research integrity training.

Training should be provided for non-research skills such as conflict management, listening, and other “soft” skills.

Established researchers should be required to follow training to build new skills and to update their methods.

Supervisors and supervisees should be required to sign agreements laying out the expectations and obligations of supervision at the outset.

An independent body should be in place for supervisees and supervisors to turn to in the event of problems.

Mandatory training on supervision should be provided to all supervisors.

Organisations should not assess researchers using metrics that emphasise quantity or journal-level impact, such as publication counts, H-index, and Journal Impact Factor.

Good researchers who are not suitable research leaders should be allowed to progress in their career without the need to take on research leader tasks.

Team leaders (e.g. principal investigators) should be periodically assessed by asking colleagues about their leadership skills.

Organisations should provide researchers with an independent research integrity counselling service that can provide advice on research integrity dilemmas or queries.

Organisations should appoint research integrity ‘champions’ (colleagues who can provide informal advice about day-to-day research integrity questions) within every department or unit of their institution.

Organisations should adopt policies on diversity and inclusion for scientific seminars and speaker panels.

Organisations should monitor and publicly report their commitment, achievements and setbacks in ensuring diversity and inclusion.

Researchers should have access to mental health professionals as part of their conditions of employment.

Where an organisation provides a research counselling service, research counsellors should be able to guarantee confidentiality and secrecy to researchers, even in cases in which misconduct is being discussed.

Organisations should set a maximum number of students a researcher can supervise at once.

Organisations should adopt policies on diversity and inclusion for executive boards and university management.

Organisations should ensure that assessment procedures include evaluation from direct colleagues and supervisees as well as from those in a senior position to the member of staff being assessed.

Organisations should actively facilitate peer support groups for researchers at different stages of their career.

11.4 Appendix IV. Survey Distribution

We contacted the selected sample with a prenotification email, an invitation to the survey and three subsequent reminders. In total 4,325,827 emails were sent to our selected sample of 908,870 email addresses, in 46 batches, across five stages, during the period 22nd June – 28th July 2021. 12.8 percent of these emails bounced (555,778) according to the survey software.

11.4.1 Prenotification

A prenotification email was sent to the full sample of 908,870 researcher email addresses in 10 batches between 22nd June and 29th June 2021, informing recipients that they would be receiving an invitation to take part in the study. The number of batches was partly due to the differences in how we would address recipients, partly due to requirements of mailing list size in the survey software we were using and lastly due to the software not uploading all the email addresses for reasons we were unable to establish from the software provider.

Prenotification email text can be seen in Figures 1 and 2 below. The first text was sent to 858,964 email addresses on 22nd and 24th June. A slightly modified version, with explicit opt-out option was sent to a remaining 49,923 email addresses on 29th June.

11.4.2 Invitation

The invitation to the survey was sent using the Qualtrics survey platform mailing facility to email addresses which had not opted out, or taken the survey before receiving the formal invitation. Invitations were thus sent to 907,785 people, in 9 batches, (of which 105,808 reportedly failed or bounced). A first batch was sent to 34,059 email addresses on 25th June 2021. The bulk of emails were sent in five further batches at staggered times on 29th June, with two smaller batches picking up those that Qualtrics had not uploaded on 30th June and 2nd July. A final small batch of emails was sent on 5th July to a small group that had been excluded following an “email bounced” status at the prenotification stage, on discovery that a bounce at one attempt did not mean a bounce at subsequent stages.

11.4.3 First reminder

A reminder email was sent on the 9th July to a remaining 862,905 email addresses who had not opted out or taken the survey already (107,327 bounced). The email highlighted the opt out facility and repeated all the further information about consent and participation that was included in the survey invitation. All further communication continued to include this information.

11.4.4 Second reminder

A second reminder email was sent on the 20th July to 834,595 (114,259 bounced) addressed to all recipients as “Dear Colleague” as it was not realistically possible to manually change the names of those who had highlighted an incorrect name to us, before the automated reminders would be sent out. This reminder thanked recipients for their interest, addressed a number of issues that had been experienced, and repeated the previous information about the survey.

11.4.5 Final reminder

A final reminder email was sent on the 28th July, again addressed “Dear Colleague” to a remaining 811,655 email addresses that had not opted out or started the survey, alerting recipients that the survey would close at the end of the month (116,240 failed to send or bounced).

Full text of the prenotification, invitation and reminder emails is included below.

Dear FirstName LastName / Dear Dr. LastName / Dear Colleague,

We are writing to let you know that in a few days you will receive an invitation to take part in a survey of researchers from more than 30 countries, on the topic of 'research integrity'. Our project, [Standard Operating Procedures for Research Integrity](#) (SOPs4RI) is funded under the European Commission [Horizon 2020 Programme](#). Informed by empirical research, our aim is to deliver an online, freely accessible and easy-to-use 'toolbox' that can help organisations producing and funding research to cultivate research integrity and to reduce detrimental practices.

We are offering selected active researchers in all fields of study, including the arts & humanities, social sciences, natural, medical, agricultural and veterinary sciences, and engineering, whose email addresses appear in their published work on Web of Science, the opportunity to contribute their expertise and experience to our project through participating in this survey. If we have inadvertently addressed one of your co-authors, please note that this invitation is intended for you as the recipient of this email.

By taking part, you will have the chance to inform the development of our work in a valuable way, and to help improve the quality of research in the future. We also hope that you will also find the survey interesting and thought-provoking. The study is being run from the [University of Essex](#) and directed by [Professor Nick Allum](#).

There is no need for you to do anything now; you will receive an invitation to take the survey online in the next few days. However, if you would like in the meantime to learn more about the project, you can visit our website here: www.sops4ri.eu or see our recent piece published in Nature '[Research integrity: nine ways to move from talk to walk](#)', which provides a readable introduction to research integrity and to our project.

With best wishes

Professor Nick Allum and the SOPs4RI team

University of Essex
Wivenhoe Park
Colchester
Essex CO4 3SQ



Dear FirstName LastName,

We are writing to let you know that in a few days you will receive an invitation to take part in a survey of researchers from more than 30 countries, on the topic of 'research integrity'. Our project, [Standard Operating Procedures for Research Integrity](#) (SOPs4RI) is funded under the European Commission [Horizon 2020 Programme](#). Informed by empirical research, our aim is to deliver an online, freely accessible and easy-to-use 'toolbox' that can help organisations producing and funding research to cultivate research integrity and to reduce detrimental practices.

We are offering selected active researchers in all fields of study, including the arts & humanities, social sciences, natural, medical, agricultural and veterinary sciences, and engineering, whose email addresses appear in their published work on Web of Science, the opportunity to contribute their expertise and experience to our project through participating in this survey. If we have inadvertently addressed one of your co-authors, please note that this invitation is intended for you as the recipient of this email.

We hope you will be interested, however if you do not wish to hear from us again please use the link below to opt out of future emails.

[\\${!://OptOutLink?d=Click here to unsubscribe}](#)

By taking part, you will have the chance to inform the development of our work in a valuable way, and to help improve the quality of research in the future. We also hope that you will also find the survey interesting and thought-provoking. The study is being run from the [University of Essex](#) and directed by [Professor Nick Allum](#).

There is no need for you to do anything now; you will receive an invitation to take the survey online in the next few days. However, if you would like in the meantime to learn more about the project, you can visit our website here: www.sops4ri.eu or see our recent piece published in Nature '[Research integrity: nine ways to move from talk to walk](#)', which provides a readable introduction to research integrity and to our project.

With best wishes

Professor Nick Allum and the SOPs4RI team

University of Essex
Wivenhoe Park
Colchester
Essex CO4 3SQ

Dear FirstName LastName / Dear Dr. LastName / Dear Colleague,

We wrote to you last week to tell you that you would soon receive an invitation to take part in a survey of researchers from more than 30 countries, on the topic of 'research integrity'. We are interested in hearing from scholars across all fields of study, including the arts & humanities, social sciences, natural, medical, agricultural and veterinary sciences, and engineering. If we have inadvertently addressed one of your co-authors, please note that this invitation is intended for you as the recipient of this email.

[Standard Operating Procedures for Research Integrity](#) (SOPs4RI) is funded under the European Commission [Horizon 2020 Programme](#) and we are offering selected active researchers whose email addresses appear in their published work on Web of Science, the opportunity to contribute their expertise and experience to our project through participating in the survey, which we would like now to invite you to complete.

Follow this link to the Survey:

[\\${1://SurveyLink?d=Take the Survey}](#)

Please use the link at the bottom of this email if you wish to opt out of any further communication.

Further information:

Your participation is entirely voluntary and by clicking the link above you will consent to take part. You may refuse to take part in the research or exit the survey at any time without penalty or without needing to give a reason. You are free to decline to answer any particular question you do not wish to answer for any reason.

Your responses will be anonymised by removing any personal information and will be analysed alongside tens of thousands of other responses to produce aggregate results. In line with the open access movement, we will make a fully anonymised data publicly available on the [Open Science Framework](#) for use for research purposes. No identifying information will be contained in this dataset.

If you initially decide to participate but change your mind later, you are free to withdraw by sending an email to the team at sops4ri@essex.ac.uk. You do not have to provide us with reasons for the termination of your participation. When you withdraw from the study, all your confidential data will be destroyed. If your data has already been analysed, the results will be used but the source of the data will not be retrievable.

There are no direct personal benefits of participation in this study. However, by participating, you will contribute to the development of effective standard operating procedures (SOPs) and guidelines for research integrity, which will help research organisations, including your own institution, to foster research integrity and avoid and handle research misconduct.

If you have questions at any time about the study or the procedures, you may contact the principal investigator, Professor Nick Allum via email at sops4ri@essex.ac.uk

Further details of survey protocols and data protection procedures can be found at our [Open Science Framework pages](#).

If you would like to learn more about the project in general, you can visit our website here: www.sops4ri.eu and see our recent piece published in Nature ‘[Research integrity: nine ways to move from talk to walk](#)’, which provides a readable introduction to research integrity and to our project.

Follow this link to the Survey:

[\\${1://SurveyLink?d=Take the Survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${1://SurveyURL}](#)

We thank you very much for your participation and hope you find the survey enjoyable and thought-provoking.

With best wishes

Nick Allum and the SOPs4RI team

University of Essex
Wivenhoe Park
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Essex CO4 3SQ

Follow the link to opt out of future emails:

[\\${1://OptOutLink?d=Click here to unsubscribe}](#)



SOPs4RI

Ethical approval reference number ETH2021-0441

Dear FirstName LastName / Dear Dr. LastName / Dear Colleague,

We wrote to you inviting you to take part in a survey of active researchers from more than 30 countries, across all fields of study, whose email addresses appear in their published work on Web of Science, on the topic of 'research integrity'. [Standard Operating Procedures for Research Integrity](#). We understand that you have many calls on your time, however, if you can spare some time to complete the survey, we would very much appreciate it. You can access the survey here.

Follow this link to the Survey:

[\\${1://SurveyLink?d=Take the Survey}](#)

If you have already started the survey, we would be delighted if you decide to finish it, which you can do by using the same link.

If you prefer not to take the survey please scroll to the end of this email and click on the link to unsubscribe to avoid further reminders.

Further information:

Your participation is entirely voluntary and by clicking the link above you will consent to take part. You may refuse to take part in the research or exit the survey at any time without penalty or without needing to give a reason. You are free to decline to answer any particular question you do not wish to answer for any reason.

Your responses will be anonymised by removing any personal information and will be analysed alongside tens of thousands of other responses to produce aggregate results. In line with the open access movement, we will make a fully anonymised data publicly available on the [Open Science Framework](#) for use for research purposes. No identifying information will be contained in this dataset.

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[Take the Survey](#)

Or copy and paste the URL below into your internet browser:

[Survey URL](#)

We thank you very much for your participation and hope you find the survey enjoyable and thought-provoking.

With best wishes

Nick Allum and the SOPs4RI team

University of Essex
Wivenhoe Park
Colchester
Essex CO4 3SQ



SOPs4RI

Follow the link to opt out of future emails:

[Click here to unsubscribe](#)

Dear Colleagues,

We have been writing to you over the last few weeks about our survey [Standard Operating Procedures for Research Integrity](#). We would like to thank so many of you for your interest, your kind words, offers of collaboration and overwhelming response to our project which is a clearly a very important topic for our community. We have tried hard to respond individually to as many of you as possible however this is simply not feasible and so we apologise if you have contacted us with well wishes or with queries that we have not yet managed to resolve. We will keep working through them and try to address some of the general issues that have arisen in this email (see Troubleshooting below).

Firstly, if you would like to avoid hearing from us again, please could you click here to unsubscribe:

[\\${1://OptOutLink?d=Click here to unsubscribe}](#)

(Please note, in the rare event that we hold more than one email address for you, please click this link at both email addresses to ensure that each email address is opted out from further correspondence.)

If you would like to start the survey or continue where you left off, you can do so here:

Follow this link to the Survey:

[\\${1://SurveyLink?d=Take the Survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${1://SurveyURL}](#)

(Please note if you have contacted us to say that you started the survey but do not wish to continue, for any reason, please click unsubscribe to avoid any further contact.

*If the link is showing as closed please email us, using **Link Not Working** as the subject line).*

Troubleshooting

I have already completed the survey

Thank you for your engagement with our project. We are sorry to have contacted you again. Please click unsubscribe to avoid further correspondence.

Your emails are addressed to my co-author

We have attempted to identify the correct author from your work held on Web of Science. Occasionally we have linked your email address with your co-author's name instead. We are truly sorry for any potential offence caused and hope that you will be willing to take the survey which was intended for you as the recipient. Please either take the survey or click to unsubscribe if you do not want to be contacted again.

I cannot find my country

We have had reports from a few people to say that they cannot find their country in the list of dropdown options. On checking we have been able to confirm that these countries are listed as response options and have been selected many times by other respondents. There are two possible solutions:

- Countries have been listed in two sets in alphabetical order. Our intention was to ease respondent burden by placing the countries where we expected most respondents to be based at the top of the list. This means that you might be looking in the wrong part of the list which can be resolved by scrolling up or down. For some we will have made it easier, for others we have caused confusion and we apologise for that.
- The survey software support team note that there may be a browser issue affecting the response options that you can see. Please try clearing your browser cookies or accessing the survey from a different browser.

If you have already submitted your survey but would like to add this information, please contact us using **Missing Country** in the subject line and we will reopen the link for you.

The link is not working

Please email us at sops4ri@essex.ac.uk placing **Link Not Working** in the subject line so that we can check it for you.

Further information:

Your participation is entirely voluntary and by clicking the link above you will consent to take part. You may refuse to take part in the research or exit the survey at any time without penalty or without needing to give a reason. You are free to decline to answer any particular question you do not wish to answer for any reason.

Your responses will be anonymised by removing any personal information and will be analysed alongside tens of thousands of other responses to produce aggregate results. In line with the open access movement, we will make a fully anonymised data publicly available on the [Open Science Framework](#) for use for research purposes. No identifying information will be contained in this dataset.

If you initially decide to participate but change your mind later, you are free to withdraw by sending an email to the team at sops4ri@essex.ac.uk. You do not have to provide us with reasons for the termination of your participation. When you withdraw from the study, all your confidential data will be destroyed. If your data has already been analysed, the results will be used but the source of the data will not be retrievable.

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If you have questions at any time about the study or the procedures, you may contact the principal investigator, Professor Nick Allum via email at sops4ri@essex.ac.uk

Further details of survey protocols and data protection procedures can be found at our [Open Science Framework pages](#).

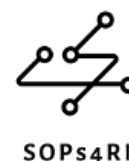
If you would like to learn more about the project in general, you can visit our website here: www.sops4ri.eu and see our recent piece published in Nature ‘[Research integrity: nine ways to move from talk to walk](#)’, which provides a readable introduction to research integrity and to our project.

We thank you very much for your participation and hope you find the survey enjoyable and thought-provoking.

With best wishes

Nick Allum and the SOPs4RI team

University of Essex
Wivenhoe Park
Colchester
Essex CO4 3SQ



Dear Colleagues,

We have been writing to you over the last few weeks about our survey [Standard Operating Procedures for Research Integrity](#). The survey will be closing in a few days on **31st July**. If you have been thinking about completing it, but haven't managed to do so yet, please do so here:

Follow this link to the Survey:

`{1://SurveyLink?d=Take the Survey}`

Or copy and paste the URL below into your internet browser:

`{1://SurveyURL}`

If you have raised an issue with the survey which we have not yet been able to address, we will respond as soon as possible, and we will be able to provide access to the survey after it closes in these cases.

If you are interested in further news from our project including the survey results (which we expect to release later in the year) please follow us on [Twitter](#) or visit our [website](#).

We would like to thank you again for your interest and patience.

Further information:

Your participation is entirely voluntary and by clicking the link above you will consent to take part. You may refuse to take part in the research or exit the survey at any time without penalty or without needing to give a reason. You are free to decline to answer any particular question you do not wish to answer for any reason.

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With best wishes

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SOPs4RI

11.5 Appendix V. Data tables

In which field do you mainly work?	n	raw %	weighted %
Biological sciences	5432	8.89	13.31
Chemical sciences	1673	2.74	3.37
Computer and information sciences	2378	3.89	6.08
Earth and related environmental sciences	2331	3.81	5.10
Mathematics	1505	2.46	3.22
Physical sciences	2674	4.37	6.95
Other natural sciences	418	0.68	0.81
Civil engineering	786	1.29	1.53
Chemical engineering	393	0.64	0.68
Electrical engineering, electronic engineering, information engineering	1864	3.05	4.66
Environmental engineering	439	0.72	0.68
Environmental biotechnology	59	0.10	0.07
Industrial biotechnology	73	0.12	0.16
Materials engineering	660	1.08	1.48
Mechanical engineering	798	1.31	1.94
Medical engineering	265	0.43	0.55
Nano-technology	192	0.31	0.34
Other engineering and technologies	864	1.41	1.61
Basic medicine	766	1.25	1.46
Clinical medicine	4029	6.59	8.18
Health sciences	3537	5.79	7.67
Medical biotechnology	282	0.46	0.81
Other medical science	940	1.54	1.93
Agricultural biotechnology	152	0.25	0.39
Agriculture, forestry, and fisheries	575	0.94	0.86
Animal and dairy science	191	0.31	0.28
Veterinary science	384	0.63	0.70
Other agricultural sciences	308	0.50	0.51
Economics and business	5195	8.50	4.77

In which field do you mainly work?	n	raw %	weighted %
Education	2157	3.53	2.18
Law	876	1.43	0.61
Media and communications	778	1.27	0.62
Political Science	1435	2.35	1.09
Psychology and cognitive sciences	3071	5.02	4.80
Social and economic geography	581	0.95	0.61
Sociology	1868	3.06	1.75
Other social sciences	2113	3.46	2.87
Arts (arts, history of arts, performing arts, music)	947	1.55	0.70
History and archaeology	2638	4.32	1.49
Languages and literature	3145	5.15	1.60
Politics, ethics and religion	855	1.40	0.52
Other humanities	1496	2.45	1.04
Total	61123	100.00	100.00

Please could you indicate your highest qualification?	n	raw %	weighted %
PhD / DPhil / Doctorate	56001	87.40	86.76
Masters Degree	8073	12.60	13.24
Total	64074	100.00	100.00

Current field of research matches field of doctoral training	n	raw %	weighted %
Yes	49364	88.38	87.02
No	6492	11.62	12.98
Total	55856	100.00	100.00

In which country is your employer currently based?	n	raw %	weighted %
Australia	2228	3.48	3.82
Austria	1830	2.86	1.13
Belgium	1987	3.10	1.31
Bulgaria	755	1.18	0.33

In which country is your employer currently based?	n	raw %	weighted %
Canada	2800	4.37	4.80
Croatia	1526	2.38	0.54
Cyprus	321	0.50	0.12
Czechia	1867	2.91	1.22
Denmark	2224	3.47	1.13
Estonia	394	0.61	0.18
Finland	1951	3.04	1.05
France	2516	3.93	5.93
Germany	3085	4.81	8.71
Greece	2269	3.54	1.11
Hungary	1248	1.95	0.64
Ireland	1248	1.95	0.62
Italy	4303	6.72	6.11
Latvia	351	0.55	0.15
Lithuania	605	0.94	0.29
Luxembourg	183	0.29	0.10
Malta	141	0.22	0.04
Netherlands	2729	4.26	2.65
Poland	2206	3.44	3.10
Portugal	4397	6.86	1.47
Romania	2645	4.13	1.20
Slovakia	819	1.28	0.51
Slovenia	713	1.11	0.30
Spain	4053	6.33	5.58
Sweden	2773	4.33	1.75
United Kingdom of Great Britain and Northern Ireland	3701	5.78	8.30
United States of America	2909	4.54	34.02
Iceland	104	0.16	0.11
Norway	1342	2.09	0.57

In which country is your employer currently based?	n	raw %	weighted %
Switzerland	1851	2.89	1.11
Total	64074	100.00	100.00

Researcher based in country of employment	n	raw %	weighted %
Yes	62051	96.92	97.42
No	1974	3.08	2.58
Total	64025	100.00	100.00

Doctoral training completed in the same country as current employment	n	raw %	weighted %
Yes	43337	77.93	81.53
No	12270	22.07	18.47
Total	55607	100.00	100.00

In which country did you spend most of your life until you were aged 18?	n	raw %	weighted %
Not selected	407	0.64	0.81
Australia	1475	2.30	2.55
Austria	1269	1.98	1.02
Belgium	1526	2.38	1.15
Bulgaria	815	1.27	0.42
Canada	2025	3.16	3.67
Croatia	1518	2.37	0.60
Cyprus	268	0.42	0.14
Czechia	1556	2.43	1.06
Denmark	1622	2.53	0.88
Estonia	341	0.53	0.16
Finland	1618	2.53	0.97
France	2428	3.79	5.33
Germany	3952	6.17	8.47
Greece	2685	4.19	1.67

In which country did you spend most of your life until you were aged 18?	n	raw %	weighted %
Hungary	1252	1.96	0.82
Ireland	867	1.35	0.56
Italy	5354	8.36	7.47
Latvia	339	0.53	0.14
Lithuania	634	0.99	0.32
Luxembourg	47	0.07	0.03
Malta	131	0.20	0.05
Netherlands	2300	3.59	2.30
Poland	2325	3.63	3.35
Portugal	4067	6.35	1.50
Romania	2879	4.50	1.53
Slovakia	963	1.50	0.69
Slovenia	697	1.09	0.32
Spain	4031	6.29	5.53
Sweden	1938	3.03	1.28
United Kingdom of Great Britain and Northern Ireland	3213	5.02	6.65
United States of America	3052	4.77	25.75
Afghanistan	7	0.01	0.02
Albania	31	0.05	0.03
Algeria	31	0.05	0.10
Andorra	2	0.00	0.00
Angola	29	0.05	0.01
Argentina	143	0.22	0.35
Armenia	12	0.02	0.02
Azerbaijan	7	0.01	0.00
Bahamas	1	0.00	0.00
Bahrain	3	0.00	0.00
Bangladesh	45	0.07	0.07
Barbados	2	0.00	0.00

In which country did you spend most of your life until you were aged 18?	n	raw %	weighted %
Belarus	36	0.06	0.12
Belize	1	0.00	0.00
Benin	6	0.01	0.00
Bolivia	11	0.02	0.01
Bosnia and Herzegovina	74	0.12	0.05
Botswana	4	0.01	0.01
Brazil	307	0.48	0.44
Brunei Darussalam	5	0.01	0.01
Burkina Faso	8	0.01	0.01
Burundi	1	0.00	0.00
Cambodia	2	0.00	0.00
Cameroon	29	0.05	0.03
Cape Verde	2	0.00	0.00
Central African Republic	1	0.00	0.00
Chad	1	0.00	0.01
Chile	72	0.11	0.13
China	352	0.55	1.26
Colombia	132	0.21	0.35
Costa Rica	14	0.02	0.01
Côte d'Ivoire	6	0.01	0.01
Cuba	21	0.03	0.06
Democratic Republic of the Congo	1	0.00	0.00
Djibouti	1	0.00	0.00
Dominican Republic	3	0.00	0.01
Ecuador	14	0.02	0.03
Egypt	51	0.08	0.14
El Salvador	6	0.01	0.00
Eritrea	2	0.00	0.00
Ethiopia	19	0.03	0.02

In which country did you spend most of your life until you were aged 18?	n	raw %	weighted %
Fiji	6	0.01	0.01
Gabon	4	0.01	0.01
Georgia	12	0.02	0.01
Ghana	40	0.06	0.06
Guatemala	10	0.02	0.06
Guinea-Bissau	2	0.00	0.00
Guyana	4	0.01	0.01
Haiti	1	0.00	0.00
Honduras	2	0.00	0.01
Hong Kong (S.A.R.)	43	0.07	0.09
Iceland	97	0.15	0.05
India	474	0.74	2.33
Indonesia	40	0.06	0.06
Iran, Islamic Republic of...	224	0.35	0.45
Iraq	27	0.04	0.12
Israel	51	0.08	0.12
Jamaica	5	0.01	0.03
Japan	51	0.08	0.16
Jordan	25	0.04	0.08
Kazakhstan	11	0.02	0.02
Kenya	36	0.06	0.12
Kuwait	7	0.01	0.01
Kyrgyzstan	5	0.01	0.01
Lebanon	72	0.11	0.26
Libyan Arab Jamahiriya	11	0.02	0.02
Liechtenstein	1	0.00	0.00
Madagascar	5	0.01	0.02
Malawi	6	0.01	0.01
Malaysia	37	0.06	0.14

In which country did you spend most of your life until you were aged 18?	n	raw %	weighted %
Mali	4	0.01	0.01
Mauritania	2	0.00	0.00
Mauritius	15	0.02	0.02
Mexico	139	0.22	0.43
Monaco	1	0.00	0.00
Mongolia	2	0.00	0.00
Montenegro	3	0.00	0.01
Morocco	41	0.06	0.08
Mozambique	30	0.05	0.01
Myanmar	3	0.00	0.01
Namibia	1	0.00	0.00
Nauru	1	0.00	0.00
Nepal	24	0.04	0.10
New Zealand	133	0.21	0.21
Nicaragua	2	0.00	0.01
Niger	3	0.00	0.01
Nigeria	101	0.16	0.20
Norway	826	1.29	0.36
Pakistan	99	0.15	0.25
Panama	4	0.01	0.01
Papua New Guinea	5	0.01	0.01
Paraguay	4	0.01	0.00
Peru	37	0.06	0.05
Philippines	38	0.06	0.05
Qatar	3	0.00	0.01
Republic of Korea	16	0.02	0.09
Republic of Moldova	19	0.03	0.01
Russian Federation	306	0.48	0.54
Rwanda	4	0.01	0.00

In which country did you spend most of your life until you were aged 18?	n	raw %	weighted %
Saint Lucia	1	0.00	0.00
San Marino	1	0.00	0.00
Saudi Arabia	9	0.01	0.02
Senegal	8	0.01	0.02
Serbia	116	0.18	0.09
Seychelles	1	0.00	0.00
Sierra Leone	2	0.00	0.05
Singapore	40	0.06	0.14
South Africa	119	0.19	0.24
South Korea	30	0.05	0.05
Sri Lanka	28	0.04	0.10
Sudan	10	0.02	0.01
Suriname	2	0.00	0.00
Swaziland	4	0.01	0.00
Switzerland	761	1.19	0.63
Syrian Arab Republic	24	0.04	0.03
Tajikistan	1	0.00	0.00
Thailand	25	0.04	0.11
The former Yugoslav Republic of Macedonia	25	0.04	0.01
Togo	2	0.00	0.01
Trinidad and Tobago	6	0.01	0.03
Tunisia	44	0.07	0.10
Turkey	162	0.25	0.28
Turkmenistan	1	0.00	0.00
Uganda	15	0.02	0.07
Ukraine	148	0.23	0.29
United Arab Emirates	15	0.02	0.03
United Republic of Tanzania	6	0.01	0.04
Uruguay	14	0.02	0.02

In which country did you spend most of your life until you were aged 18?	n	raw %	weighted %
Uzbekistan	7	0.01	0.01
Vanuatu	2	0.00	0.00
Venezuela, Bolivarian Republic of...	65	0.10	0.19
Viet Nam	42	0.07	0.05
Yemen	5	0.01	0.01
Zambia	8	0.01	0.02
Zimbabwe	26	0.04	0.07
Total	64039	100.00	100.00

SOPs4RI grouped field variable	n	raw %	weighted %
Natural sciences (including technical science)	24414	39.94	55.29
Medical sciences (including biomedicine)	9554	15.63	20.04
Social sciences	18074	29.57	19.32
Humanities	9081	14.86	5.35
Total	61123	100.00	100.00

Which best describes the research discipline or sector you carried out your doctoral training?	n	raw %	weighted %
Biological sciences	5153	9.60	14.43
Chemical sciences	1781	3.32	4.56
Computer and information sciences	1740	3.24	4.95
Earth and related environmental sciences	2016	3.76	5.16
Mathematics	1596	2.97	3.85
Physical sciences	2797	5.21	8.71
Other natural sciences	419	0.78	0.92
Civil engineering	681	1.27	1.56
Chemical engineering	346	0.64	0.59
Electrical engineering, electronic engineering, information engineering	1490	2.78	4.23
Environmental engineering	309	0.58	0.56

Which best describes the research discipline or sector you carried out your doctoral training?	n	raw %	weighted %
Environmental biotechnology	34	0.06	0.03
Industrial biotechnology	58	0.11	0.06
Materials engineering	516	0.96	1.26
Mechanical engineering	706	1.32	2.12
Medical engineering	175	0.33	0.44
Nano-technology	124	0.23	0.24
Other engineering and technologies	761	1.42	1.50
Basic medicine	752	1.40	1.52
Clinical medicine	2810	5.24	6.52
Health sciences	2632	4.90	6.44
Medical biotechnology	195	0.36	0.45
Other medical science	756	1.41	1.65
Agricultural biotechnology	108	0.20	0.24
Agriculture, forestry, and fisheries	467	0.87	0.73
Animal and dairy science	168	0.31	0.29
Veterinary science	338	0.63	0.68
Other agricultural sciences	267	0.50	0.47
Economics and business	4763	8.88	4.83
Education	1632	3.04	2.02
Law	758	1.41	0.64
Media and communications	579	1.08	0.56
Political Science	1315	2.45	1.23
Psychology and cognitive sciences	2809	5.23	5.34
Social and economic geography	493	0.92	0.62
Sociology	1660	3.09	1.91
Other social sciences	1856	3.46	2.97
Arts (arts, history of arts, performing arts, music)	819	1.53	0.67
History and archaeology	2401	4.47	1.59
Languages and literature	3091	5.76	1.79

Which best describes the research discipline or sector you carried out your doctoral training?	n	raw %	weighted %
Politics, ethics and religion	797	1.49	0.56
Other humanities	1493	2.78	1.10
Total	53661	100.00	100.00

SOPs4RI doctoral training grouped field variable	n	raw %	weighted %
Natural sciences (including technical science)	22050	41.09	57.59
Medical sciences (including biomedicine)	7145	13.32	16.57
Social sciences	15865	29.57	20.13
Humanities	8601	16.03	5.71
Total	53661	100.00	100.00

In which country are you currently based?	n	raw %	weighted %
Not selected	18	0.03	0.01
Australia	2213	3.46	3.80
Austria	1814	2.83	1.13
Belgium	1969	3.08	1.29
Bulgaria	754	1.18	0.33
Canada	2792	4.36	4.86
Croatia	1521	2.38	0.54
Cyprus	317	0.50	0.12
Czechia	1831	2.86	1.21
Denmark	2199	3.43	1.12
Estonia	382	0.60	0.18
Finland	1934	3.02	1.04
France	2529	3.95	5.88
Germany	3111	4.86	8.68
Greece	2286	3.57	1.12
Hungary	1247	1.95	0.64
Ireland	1214	1.90	0.62

In which country are you currently based?	n	raw %	weighted %
Italy	4343	6.78	6.13
Latvia	344	0.54	0.14
Lithuania	606	0.95	0.29
Luxembourg	168	0.26	0.09
Malta	143	0.22	0.04
Netherlands	2706	4.23	2.63
Poland	2180	3.41	3.08
Portugal	4375	6.83	1.53
Romania	2644	4.13	1.20
Slovakia	821	1.28	0.51
Slovenia	711	1.11	0.30
Spain	4063	6.35	5.62
Sweden	2755	4.30	1.74
United Kingdom of Great Britain and Northern Ireland	3709	5.79	8.29
United States of America	2897	4.53	33.75
Angola	1	0.00	0.00
Argentina	3	0.00	0.00
Azerbaijan	1	0.00	0.00
Benin	2	0.00	0.00
Bhutan	1	0.00	0.00
Bolivia	1	0.00	0.00
Bosnia and Herzegovina	5	0.01	0.00
Brazil	13	0.02	0.01
Burkina Faso	1	0.00	0.00
Cambodia	2	0.00	0.00
Chile	7	0.01	0.04
China	14	0.02	0.12
Colombia	5	0.01	0.02
Costa Rica	1	0.00	0.00

In which country are you currently based?	n	raw %	weighted %
Egypt	2	0.00	0.00
Ethiopia	4	0.01	0.00
Georgia	2	0.00	0.00
Ghana	2	0.00	0.00
Hong Kong (S.A.R.)	4	0.01	0.00
Iceland	100	0.16	0.05
India	7	0.01	0.01
Indonesia	1	0.00	0.00
Iran, Islamic Republic of...	5	0.01	0.00
Iraq	1	0.00	0.00
Israel	2	0.00	0.00
Japan	3	0.00	0.00
Jordan	2	0.00	0.00
Kenya	2	0.00	0.00
Kyrgyzstan	1	0.00	0.01
Lao People's Democratic Republic	1	0.00	0.00
Lebanon	1	0.00	0.00
Malawi	2	0.00	0.00
Mauritius	1	0.00	0.00
Mexico	1	0.00	0.01
Morocco	3	0.00	0.00
Mozambique	2	0.00	0.00
Namibia	1	0.00	0.00
Nepal	3	0.00	0.00
New Zealand	5	0.01	0.02
Nigeria	3	0.00	0.00
Norway	1317	2.06	0.56
Pakistan	3	0.00	0.01
Peru	1	0.00	0.00

In which country are you currently based?	n	raw %	weighted %
Republic of Korea	1	0.00	0.00
Republic of Moldova	1	0.00	0.00
Russian Federation	9	0.01	0.01
Saudi Arabia	1	0.00	0.00
Serbia	3	0.00	0.00
Singapore	5	0.01	0.01
South Africa	3	0.00	0.00
Sri Lanka	1	0.00	0.00
Switzerland	1829	2.86	1.12
Thailand	6	0.01	0.01
The former Yugoslav Republic of Macedonia	1	0.00	0.00
Tunisia	1	0.00	0.00
Turkey	10	0.02	0.01
Uganda	1	0.00	0.00
Ukraine	3	0.00	0.00
United Arab Emirates	3	0.00	0.00
United Republic of Tanzania	1	0.00	0.01
Uruguay	2	0.00	0.01
Viet Nam	2	0.00	0.00
Zambia	2	0.00	0.02
Zimbabwe	1	0.00	0.00
Total	64021	100.00	100.00

In which country was your phd awarded?	n	raw %	weighted %
Not selected	97	0.17	0.19
Australia	1684	3.03	3.33
Austria	1193	2.15	1.01
Belgium	1510	2.72	1.23
Bulgaria	664	1.19	0.35

In which country was your phd awarded?	n	raw %	weighted %
Canada	1864	3.35	3.81
Croatia	1191	2.14	0.48
Cyprus	91	0.16	0.04
Czechia	1432	2.58	1.11
Denmark	1576	2.83	1.03
Estonia	250	0.45	0.14
Finland	1478	2.66	0.95
France	2599	4.67	6.46
Germany	3117	5.61	7.79
Greece	1594	2.87	0.97
Hungary	1080	1.94	0.67
Ireland	761	1.37	0.50
Italy	3874	6.97	5.72
Latvia	239	0.43	0.11
Lithuania	484	0.87	0.27
Luxembourg	32	0.06	0.02
Malta	36	0.06	0.01
Netherlands	2337	4.20	2.54
Poland	1965	3.53	3.08
Portugal	2851	5.13	1.05
Romania	2311	4.16	1.23
Slovakia	739	1.33	0.59
Slovenia	601	1.08	0.29
Spain	3878	6.98	5.88
Sweden	2239	4.03	1.76
United Kingdom of Great Britain and Northern Ireland	5053	9.09	10.06
United States of America	3953	7.11	33.50
Albania	1	0.00	0.00
Algeria	3	0.01	0.00

In which country was your phd awarded?	n	raw %	weighted %
Argentina	24	0.04	0.12
Armenia	4	0.01	0.01
Belarus	6	0.01	0.02
Bosnia and Herzegovina	2	0.00	0.00
Brazil	76	0.14	0.11
Central African Republic	1	0.00	0.00
Chile	8	0.01	0.02
China	36	0.06	0.20
Colombia	6	0.01	0.01
Congo, Republic of the...	1	0.00	0.00
Cuba	1	0.00	0.00
Egypt	1	0.00	0.00
Georgia	3	0.01	0.00
Hong Kong (S.A.R.)	20	0.04	0.04
Iceland	24	0.04	0.01
India	88	0.16	0.45
Iran, Islamic Republic of...	19	0.03	0.03
Iraq	1	0.00	0.01
Israel	25	0.04	0.08
Jamaica	1	0.00	0.00
Japan	46	0.08	0.16
Jordan	1	0.00	0.00
Kenya	1	0.00	0.01
Lebanon	3	0.01	0.04
Liechtenstein	1	0.00	0.00
Malaysia	12	0.02	0.06
Mexico	14	0.03	0.02
Morocco	2	0.00	0.00
Mozambique	1	0.00	0.00

In which country was your phd awarded?	n	raw %	weighted %
New Zealand	84	0.15	0.19
Nigeria	2	0.00	0.00
Norway	864	1.55	0.43
Pakistan	4	0.01	0.04
Panama	1	0.00	0.00
Peru	1	0.00	0.00
Philippines	2	0.00	0.00
Republic of Korea	5	0.01	0.05
Republic of Moldova	5	0.01	0.00
Russian Federation	157	0.28	0.32
San Marino	1	0.00	0.00
Saudi Arabia	2	0.00	0.01
Serbia	18	0.03	0.02
Singapore	12	0.02	0.01
South Africa	52	0.09	0.11
South Korea	6	0.01	0.00
Switzerland	1090	1.96	1.07
Tunisia	4	0.01	0.00
Turkey	30	0.05	0.05
Ukraine	42	0.08	0.15
Uruguay	1	0.00	0.00
Uzbekistan	1	0.00	0.00
Venezuela, Bolivarian Republic of...	5	0.01	0.01
Zimbabwe	1	0.00	0.00
Total	55595	100.00	100.00

Are country of employment and childhood country the same?	n	raw %	weighted %
Yes	47861	74.70	72.50
No	16213	25.30	27.50

Are country of employment and childhood country the same?	n	raw %	weighted %
Total	64074	100.00	100.00
Country of employment	n	raw %	weighted %
Australia	2228	3.48	3.82
Austria	1830	2.86	1.13
Belgium	1987	3.10	1.31
Bulgaria	755	1.18	0.33
Canada	2800	4.37	4.80
Croatia	1526	2.38	0.54
Cyprus	321	0.50	0.12
Czechia	1867	2.91	1.22
Denmark	2224	3.47	1.13
Estonia	394	0.61	0.18
Finland	1951	3.04	1.05
France	2516	3.93	5.93
Germany	3085	4.81	8.71
Greece	2269	3.54	1.11
Hungary	1248	1.95	0.64
Iceland	104	0.16	0.11
Ireland	1248	1.95	0.62
Italy	4303	6.72	6.11
Latvia	351	0.55	0.15
Lithuania	605	0.94	0.29
Luxembourg	183	0.29	0.10
Malta	141	0.22	0.04
Netherlands	2729	4.26	2.65
Norway	1342	2.09	0.57
Poland	2206	3.44	3.10
Portugal	4397	6.86	1.47

Country of employment	n	raw %	weighted %
Romania	2645	4.13	1.20
Slovakia	819	1.28	0.51
Slovenia	713	1.11	0.30
Spain	4053	6.33	5.58
Sweden	2773	4.33	1.75
Switzerland	1851	2.89	1.11
UK	3701	5.78	8.30
USA	2909	4.54	34.02
Total	64074	100.00	100.00

Country of employment - grouped	n	raw %	weighted %
EU	49139	76.69	47.26
EFTA	3297	5.15	1.79
Other	11638	18.16	50.95
Total	64074	100.00	100.00

Country of childhood - grouped	n	raw %	weighted %
EU	47422	74.53	48.14
EFTA	1685	2.65	1.04
Other	9765	15.35	38.94
Country not included in study	4760	7.48	11.88
Total	63632	100.00	100.00

Country where doctoral qualification obtained - grouped	n	raw %	weighted %
EU	40122	72.29	45.33
EFTA	1979	3.57	1.51
Other	12554	22.62	50.80
Country not included in study	843	1.52	2.36
Total	55498	100.00	100.00

Could we just check your level of English?	n	raw %	weighted %
Fluent	52341	81.73	87.98
Intermediate	10665	16.65	10.97
Basic	1038	1.62	1.04
Total	64044	100.00	100.00

What best describes your current career stage?	n	raw %	weighted %
Early-career (e.g. postdoc, assistant professor, junior researcher)	22879	35.80	33.97
Mid-career (e.g. associate professor, senior researcher)	23054	36.07	31.82
Later-career (e.g. full professor, dean, director of research)	14270	22.33	26.45
Retired	3713	5.81	7.75
Total	63916	100.00	100.00

In what year were you awarded your PhD (or equivalent doctoral qualification)?	n	raw %	weighted %
2021	2044	3.67	3.88
2020	1951	3.50	3.09
2019	2065	3.71	3.54
2018	2155	3.87	3.83
2017	2186	3.92	3.77
2016	2320	4.16	3.58
2015	2360	4.23	3.94
2014	2178	3.91	3.49
2013	2104	3.78	3.23
2012	2150	3.86	3.18
2011	2024	3.63	3.05
2010	2082	3.74	2.88
2009	1922	3.45	2.57
2008	1863	3.34	2.67
2007	1766	3.17	2.55

In what year were you awarded your PhD (or equivalent doctoral qualification)?	n	raw %	weighted %
2006	1712	3.07	2.64
2005	1592	2.86	2.42
2004	1568	2.81	2.39
2003	1448	2.60	2.34
2002	1249	2.24	1.78
2001	1394	2.50	2.07
2000	1331	2.39	2.53
1999	1131	2.03	1.86
1998	1062	1.91	1.74
1997	1011	1.81	1.58
1996	1014	1.82	1.85
1995	847	1.52	1.47
1994	898	1.61	1.81
1993	755	1.35	1.58
1992	755	1.35	1.74
1991	652	1.17	1.72
1990	629	1.13	1.52
1989	539	0.97	1.18
1988	479	0.86	1.35
1987	449	0.81	1.18
1986	399	0.72	1.10
1985	354	0.64	1.31
1984	349	0.63	0.99
1983	332	0.60	0.90
1982	273	0.49	1.06
1981	267	0.48	0.97
1980	264	0.47	1.17
1979	215	0.39	0.61
1978	189	0.34	0.51

In what year were you awarded your PhD (or equivalent doctoral qualification)?	n	raw %	weighted %
1977	162	0.29	0.58
1976	166	0.30	0.59
1975	169	0.30	0.53
1974	156	0.28	0.65
1973	123	0.22	0.37
1972	118	0.21	0.50
1971	90	0.16	0.30
1970	83	0.15	0.32
1969	66	0.12	0.27
1968	63	0.11	0.16
1967	51	0.09	0.28
1966	33	0.06	0.33
1965	35	0.06	0.12
1964	19	0.03	0.11
1963	19	0.03	0.08
1962	10	0.02	0.01
1961	9	0.02	0.01
1960	8	0.01	0.04
1959	20	0.04	0.14
Total	55727	100.00	100.00

Year of phd, grouped	n	raw %	weighted %
Less than 5 years	10401	18.66	18.10
5-9 years	11112	19.94	17.42
10-14 years	9657	17.33	13.72
15-19 years	7569	13.58	11.58
20 or more years	16988	30.48	39.18
Total	55727	100.00	100.00

What is your sex?	n	raw %	weighted %
Female	27365	42.75	37.51
Male	35601	55.62	60.39
Prefer not to say	1045	1.63	2.10
Total	64011	100.00	100.00

What type of employment contract do you currently hold?	n	raw %	weighted %
Permanent	42233	66.10	66.75
Temporary	17199	26.92	25.01
No employment contract (e.g. self-employed)	4456	6.97	8.24
Total	63888	100.00	100.00

In current role: responsibility supervising research staff/doctoral students?	n	raw %	weighted %
Yes	32492	63.70	62.79
No	18514	36.30	37.21
Total	51006	100.00	100.00

How much do you identify as: A researcher of my department or centre	n	raw %	weighted %
Not at all	1926	3.14	3.06
A little	5069	8.26	8.98
A moderate amount	10719	17.46	16.89
A lot	15707	25.59	23.72
A great deal	26661	43.43	45.07
Does not apply	1308	2.13	2.29
Total	61390	100.00	100.00

How much do you identify as: A researcher of my organisation	n	raw %	weighted %
Not at all	2358	3.87	3.82
A little	6395	10.50	10.75

How much do you identify as: A researcher of my organisation	n	raw %	weighted %
A moderate amount	13599	22.34	21.62
A lot	17453	28.67	26.05
A great deal	19230	31.58	35.00
Does not apply	1851	3.04	2.75
Total	60886	100.00	100.00

How much do you identify as: A researcher of the country where I work	n	raw %	weighted %
Not at all	5193	8.53	10.05
A little	12029	19.75	21.37
A moderate amount	16917	27.78	25.98
A lot	14038	23.05	21.07
A great deal	11764	19.32	20.02
Does not apply	958	1.57	1.51
Total	60899	100.00	100.00

How much do you identify as: A member of professional societies I am affiliated	n	raw %	weighted %
Not at all	7835	12.87	13.09
A little	12124	19.91	20.15
A moderate amount	15599	25.62	25.02
A lot	12395	20.36	19.77
A great deal	9808	16.11	17.11
Does not apply	3124	5.13	4.87
Total	60885	100.00	100.00

How much do you identify as: A researcher within a scholarly community	n	raw %	weighted %
Not at all	4453	7.28	7.10
A little	9369	15.32	15.15

How much do you identify as: A researcher within a scholarly community	n	raw %	weighted %
A moderate amount	14040	22.96	22.57
A lot	15157	24.79	23.76
A great deal	16879	27.61	29.58
Does not apply	1241	2.03	1.85
Total	61139	100.00	100.00

In your current job, how much of your working time do you spend on research?	n	raw %	weighted %
All of my time	8601	13.99	16.70
About two-thirds of my time	15590	25.36	25.56
About half of my time	16533	26.90	24.12
About one-third of my time	18154	29.54	28.44
None of the time	2585	4.21	5.18
Total	61463	100.00	100.00

Whose opinion about your research do you value the most?	n	raw %	weighted %
My department's or centre's	7481	12.15	12.34
My organisation's	3712	6.03	6.32
Researchers in the country I am currently working	4941	8.02	7.06
Professional societies I am affiliated with	6524	10.59	8.75
My scholarly community (e.g. Researchers publishing in the same journals as me)	38921	63.20	65.53
Total	61579	100.00	100.00

Knowledge gained from Organisations providing research guidelines in my country	n	raw %	weighted %
No information	11141	18.99	19.22
A little information	18018	30.72	28.45
Some information	18672	31.83	31.75
A lot of information	9131	15.57	18.07

Knowledge gained from Organisations providing research guidelines in my country	n	raw %	weighted %
Does not apply	1693	2.89	2.52
Total	58655	100.00	100.00

Knowledge gained from Funding organisations providing me with money	n	raw %	weighted %
No information	12200	20.81	19.52
A little information	16387	27.95	26.92
Some information	17463	29.78	29.57
A lot of information	7706	13.14	15.17
Does not apply	4882	8.33	8.81
Total	58638	100.00	100.00

Knowledge gained from My organisation	n	raw %	weighted %
No information	6657	11.36	11.28
A little information	16301	27.81	27.15
Some information	22088	37.69	36.61
A lot of information	12055	20.57	22.15
Does not apply	1506	2.57	2.81
Total	58607	100.00	100.00

Knowledge gained from Senior colleague, supervisor or mentor	n	raw %	weighted %
No information	4819	8.20	8.41
A little information	9808	16.70	16.56
Some information	17844	30.38	29.21
A lot of information	23506	40.01	41.32
Does not apply	2768	4.71	4.49
Total	58745	100.00	100.00

Knowledge gained from My department or centre	n	raw %	weighted %
No information	7729	13.17	14.27
A little information	16245	27.68	27.01
Some information	21584	36.78	36.36
A lot of information	12062	20.55	20.37
Does not apply	1070	1.82	1.98
Total	58690	100.00	100.00

Knowledge gained from Organisations providing guide- lines internationally	n	raw %	weighted %
No information	8197	13.97	16.72
A little information	15545	26.49	28.60
Some information	20192	34.41	32.96
A lot of information	13234	22.55	19.08
Does not apply	1520	2.59	2.64
Total	58688	100.00	100.00

Knowledge gained from Professional bodies I am affiliated with	n	raw %	weighted %
No information	7909	13.49	13.66
A little information	15142	25.83	25.11
Some information	20675	35.26	35.77
A lot of information	11263	19.21	19.60
Does not apply	3639	6.21	5.86
Total	58628	100.00	100.00

Knowledge gained from My scholarly community	n	raw %	weighted %
No information	3228	5.47	5.65
A little information	9221	15.64	16.28
Some information	20668	35.05	34.94
A lot of information	24910	42.25	41.55

Knowledge gained from My scholarly community	n	raw %	weighted %
Does not apply	932	1.58	1.58
Total	58959	100.00	100.00

Knowledge gained from Research collaborators	n	raw %	weighted %
No information	2161	3.68	3.71
A little information	7429	12.64	12.87
Some information	20948	35.63	35.46
A lot of information	27105	46.11	46.12
Does not apply	1142	1.94	1.84
Total	58785	100.00	100.00

Knowledge gained from Other researchers on social media	n	raw %	weighted %
No information	14753	25.23	32.37
A little information	17562	30.03	29.09
Some information	16249	27.79	23.33
A lot of information	6909	11.82	9.60
Does not apply	3002	5.13	5.60
Total	58475	100.00	100.00

Knowledge gained from Published editorials or articles in my discipline	n	raw %	weighted %
No information	4511	7.67	9.20
A little information	11686	19.86	22.21
Some information	20210	34.35	35.21
A lot of information	21578	36.67	32.06
Does not apply	857	1.46	1.31
Total	58842	100.00	100.00

Which of these best describes your current workplace?	n	raw %	weighted %
Academia / University	46210	77.49	71.33

Which of these best describes your current workplace?	n	raw %	weighted %
Industry	1685	2.83	5.31
Not-for-profit research institute	2816	4.72	5.11
Government research centre	3693	6.19	8.66
Healthcare setting	3198	5.36	6.02
Other	2032	3.41	3.58
Total	59634	100.00	100.00

Science values: always publish findings that are scientifically sound	n	raw %	weighted %
Yes, always should	40455	68.13	71.59
Usually should	14843	25.00	23.50
Sometimes should	2753	4.64	3.45
Rarely should	688	1.16	0.73
No, never should	639	1.08	0.73
Total	59378	100.00	100.00

Science values: share new findings with colleagues	n	raw %	weighted %
Yes, always should	32939	55.43	55.22
Usually should	22748	38.28	39.00
Sometimes should	3401	5.72	5.39
Rarely should	274	0.46	0.32
No, never should	63	0.11	0.07
Total	59425	100.00	100.00

Science values: intellectual work influenced by personal beliefs and values	n	raw %	weighted %
Yes, always should	3605	6.11	5.10
Usually should	7708	13.06	10.58
Sometimes should	16224	27.48	26.85
Rarely should	15133	25.64	27.29
No, never should	16362	27.72	30.17

Science values: intellectual work influenced by personal beliefs and values	n	raw %	weighted %
Total	59032	100.00	100.00

Science values: change research interests to access funding	n	raw %	weighted %
Yes, always should	702	1.19	1.26
Usually should	4525	7.64	9.20
Sometimes should	30920	52.22	57.59
Rarely should	15126	25.55	21.57
No, never should	7940	13.41	10.38
Total	59213	100.00	100.00

Science values: consider all new evidence	n	raw %	weighted %
Yes, always should	44486	75.08	79.23
Usually should	11583	19.55	17.21
Sometimes should	2585	4.36	2.94
Rarely should	424	0.72	0.41
No, never should	172	0.29	0.22
Total	59250	100.00	100.00

Where should responsibility lie for ensuring highest standards of research?	n	raw %	weighted %
It is up to me to carry out research to the highest standard without any oversight from my organisation	18445	33.50	30.82
It is up to me to carry out research to the highest standard with some oversight from my organisation	32734	59.46	61.58
It is up to me to carry out research to the highest standard with a lot of oversight from my organisation	3877	7.04	7.60
Total	55056	100.00	100.00

Do you think research integrity policies are just box-ticking exercises?	n	raw %	weighted %
Always box-ticking exercises	2658	4.57	4.93

Do you think research integrity policies are just box-ticking exercises?	n	raw %	weighted %
Mostly box-ticking exercises	18580	31.94	31.67
Sometimes box-ticking exercises	24867	42.75	43.03
Rarely box-ticking exercises	7438	12.79	12.45
Never box-ticking exercises	4625	7.95	7.92
Total	58168	100.00	100.00

Do research integrity policies help improve the quality of your research?	n	raw %	weighted %
Always improve the quality of my research	6915	11.89	11.27
Mostly improve the quality of my research	16146	27.76	27.28
Sometimes improve the quality of my research	18528	31.85	30.52
Rarely improve the quality of my research	12497	21.48	23.44
Never improve the quality of my research	4081	7.02	7.49
Total	58167	100.00	100.00

Willingness to attend research integrity training	n	raw %	weighted %
Very positive	20806	35.56	31.71
Slightly positive	19232	32.87	33.10
Neither positive or negative	12036	20.57	21.67
Slightly negative	4489	7.67	9.52
Very negative	1941	3.32	4.00
Total	58504	100.00	100.00

Masterclass vs training session	n	raw %	weighted %
masterclass	29661	50.46	51.05
training	29119	49.54	48.95
Total	58780	100.00	100.00

Required vs invited to attend	n	raw %	weighted %
mandatory	29427	50.06	49.79
voluntary	29353	49.94	50.21
Total	58780	100.00	100.00

Experimental group for training question	n	raw %	weighted %
Voluntary masterclass	14784	25.15	25.07
Voluntary training	14569	24.79	25.14
Mandatory masterclass	14877	25.31	25.98
Mandatory training	14550	24.75	23.81
Total	58780	100.00	100.00

Does your research institution have a written statement on research integrity?	n	raw %	weighted %
Yes	27931	47.84	53.03
No	7604	13.02	9.64
I don't know	22852	39.14	37.33
Total	58387	100.00	100.00

Research integrity policy communicated via Formal event	n	raw %	weighted %
No	24484	87.85	87.36
Yes	3387	12.15	12.64
Total	27871	100.00	100.00

Research integrity policy communicated via Formal communication	n	raw %	weighted %
No	11056	39.67	36.73
Yes	16815	60.33	63.27
Total	27871	100.00	100.00

Research integrity policy communicated via Informal communication	n	raw %	weighted %
No	23944	85.91	85.91
Yes	3927	14.09	14.09
Total	27871	100.00	100.00

Research integrity policy communicated via I looked for it myself	n	raw %	weighted %
No	21778	78.14	80.48
Yes	6093	21.86	19.52
Total	27871	100.00	100.00

Research integrity policy communicated via I can't remember	n	raw %	weighted %
No	23845	85.55	84.35
Yes	4026	14.45	15.65
Total	27871	100.00	100.00

Research integrity policy communicated via Other	n	raw %	weighted %
No	27112	97.28	97.58
Yes	759	2.72	2.42
Total	27871	100.00	100.00

Confidence management in org effective in ensuring high level of research integrity	n	raw %	weighted %
Complete confidence	3912	6.76	7.60
A great deal of confidence	17194	29.70	30.36
Some confidence	21149	36.53	36.53
Not much confidence	12148	20.98	19.69
No confidence	3494	6.03	5.83
Total	57897	100.00	100.00

How closely does this resemble your working environment: Working Environment	n	raw %	weighted %
Resembles my environment very closely	12316	22.38	25.08
Resembles my environment closely	17040	30.97	31.68
Resembles my environment somewhat closely	14006	25.45	23.99
Resembles my environment not very closely	8367	15.20	14.06
Resembles my environment not at all closely	3299	6.00	5.20
Total	55028	100.00	100.00

How closely does this resemble your working environment: Supervision & Mentoring	n	raw %	weighted %
Resembles my environment very closely	7710	14.07	15.75
Resembles my environment closely	15201	27.74	27.11
Resembles my environment somewhat closely	15110	27.58	27.41
Resembles my environment not very closely	11387	20.78	20.79
Resembles my environment not at all closely	5386	9.83	8.95
Total	54794	100.00	100.00

How closely does this resemble your working environment: Integrity Training	n	raw %	weighted %
Resembles my environment very closely	3837	7.01	10.13
Resembles my environment closely	8088	14.78	17.34
Resembles my environment somewhat closely	12843	23.47	22.99
Resembles my environment not very closely	16066	29.36	27.54
Resembles my environment not at all closely	13883	25.37	22.00
Total	54717	100.00	100.00

How closely does this resemble your working environment: Ethics Structures	n	raw %	weighted %
Resembles my environment very closely	10617	19.45	22.76
Resembles my environment closely	13000	23.82	24.01
Resembles my environment somewhat closely	12928	23.69	22.56

How closely does this resemble your working environment: Ethics Structures	n	raw %	weighted %
Resembles my environment not very closely	10733	19.67	17.63
Resembles my environment not at all closely	7296	13.37	13.03
Total	54574	100.00	100.00

How closely does this resemble your working environment: Integrity Breaches	n	raw %	weighted %
Resembles my environment very closely	5774	10.70	14.25
Resembles my environment closely	11698	21.69	23.77
Resembles my environment somewhat closely	14295	26.50	25.86
Resembles my environment not very closely	12551	23.27	20.86
Resembles my environment not at all closely	9626	17.84	15.27
Total	53944	100.00	100.00

How closely does this resemble your working environment: Data Management	n	raw %	weighted %
Resembles my environment very closely	13296	24.46	29.69
Resembles my environment closely	15160	27.89	27.88
Resembles my environment somewhat closely	12408	22.83	20.59
Resembles my environment not very closely	8403	15.46	14.05
Resembles my environment not at all closely	5082	9.35	7.79
Total	54349	100.00	100.00

How closely does this resemble your working environment: Research Collaboration	n	raw %	weighted %
Resembles my environment very closely	7718	14.24	17.85
Resembles my environment closely	15659	28.90	29.89
Resembles my environment somewhat closely	15571	28.74	27.91
Resembles my environment not very closely	10321	19.05	16.66
Resembles my environment not at all closely	4919	9.08	7.70
Total	54188	100.00	100.00

How closely does this resemble your working environment: Declaration of Interest	n	raw %	weighted %
Resembles my environment very closely	10486	19.30	25.81
Resembles my environment closely	15527	28.59	29.68
Resembles my environment somewhat closely	14332	26.39	23.51
Resembles my environment not very closely	9256	17.04	13.93
Resembles my environment not at all closely	4717	8.68	7.08
Total	54318	100.00	100.00

How closely does this resemble your working environment: Publication and Comms	n	raw %	weighted %
Resembles my environment very closely	11021	20.20	21.29
Resembles my environment closely	16653	30.52	30.39
Resembles my environment somewhat closely	13775	25.24	25.04
Resembles my environment not very closely	8559	15.68	16.03
Resembles my environment not at all closely	4563	8.36	7.26
Total	54571	100.00	100.00

Are you aware of organisational policies: Working Environment	n	raw %	weighted %
No	31154	55.91	54.13
Yes	24568	44.09	45.87
Total	55722	100.00	100.00

Are you aware of organisational policies: Supervision & Mentoring	n	raw %	weighted %
No	33084	59.37	57.39
Yes	22638	40.63	42.61
Total	55722	100.00	100.00

Are you aware of organisational policies: Integrity Training	n	raw %	weighted %
No	41863	75.13	66.25

Are you aware of organisational policies: Integrity Training	n	raw %	weighted %
Yes	13859	24.87	33.75
Total	55722	100.00	100.00

Are you aware of organisational policies: Ethics Structures	n	raw %	weighted %
No	26466	47.50	44.39
Yes	29256	52.50	55.61
Total	55722	100.00	100.00

Are you aware of organisational policies: Integrity Breaches	n	raw %	weighted %
No	42599	76.45	69.94
Yes	13123	23.55	30.06
Total	55722	100.00	100.00

Are you aware of organisational policies: Data Management	n	raw %	weighted %
No	24869	44.63	40.21
Yes	30853	55.37	59.79
Total	55722	100.00	100.00

Are you aware of organisational policies: Research Collaboration	n	raw %	weighted %
No	39943	71.68	70.51
Yes	15779	28.32	29.49
Total	55722	100.00	100.00

Are you aware of organisational policies: Declaration of Interests	n	raw %	weighted %
No	33559	60.23	51.47
Yes	22163	39.77	48.53
Total	55722	100.00	100.00

Are you aware of organisational policies: Publication and Communicaton	n	raw %	weighted %
No	25931	46.54	50.12
Yes	29791	53.46	49.88
Total	55722	100.00	100.00

Are your organisation's policies effective: Working Environment	n	raw %	weighted %
Yes	16227	66.80	68.43
No	3769	15.52	14.30
Don't know	4296	17.68	17.27
Total	24292	100.00	100.00

Are your organisation's policies effective: Supervision & Mentoring	n	raw %	weighted %
Yes	15055	67.31	67.21
No	3541	15.83	16.06
Don't know	3772	16.86	16.74
Total	22368	100.00	100.00

Are your organisation's policies effective: Integrity Training	n	raw %	weighted %
Yes	8227	60.06	63.22
No	2034	14.85	14.22
Don't know	3436	25.09	22.55
Total	13697	100.00	100.00

Are your organisation's policies effective: Ethics Structures	n	raw %	weighted %
Yes	20354	70.22	71.58
No	3248	11.20	10.05
Don't know	5386	18.58	18.37
Total	28988	100.00	100.00

Are your organisation's policies effective: Integrity Breaches	n	raw %	weighted %
Yes	7413	57.28	61.71
No	1601	12.37	10.11
Don't know	3927	30.35	28.18
Total	12941	100.00	100.00

Are your organisation's policies effective: Data Management	n	raw %	weighted %
Yes	21418	70.02	72.56
No	3702	12.10	11.78
Don't know	5470	17.88	15.67
Total	30590	100.00	100.00

Are your organisation's policies effective: Research Collaboration	n	raw %	weighted %
Yes	11172	71.73	73.28
No	1822	11.70	10.57
Don't know	2580	16.57	16.15
Total	15574	100.00	100.00

Are your organisation's policies effective: Declaration of Interests	n	raw %	weighted %
Yes	15483	70.75	73.56
No	1667	7.62	7.05
Don't know	4733	21.63	19.39
Total	21883	100.00	100.00

Are your organisation's policies effective: Publication and Communication	n	raw %	weighted %
Yes	21152	71.72	73.11
No	3253	11.03	10.29
Don't know	5089	17.25	16.60

Are your organisation's policies effective: Publication and Communication	n	raw %	weighted %
Total	29494	100.00	100.00

How important for research integrity: Working Environment	n	raw %	weighted %
Not important at all	1032	1.98	1.85
Somewhat important	1884	3.62	3.48
Fairly important	5391	10.36	9.78
Very important	18947	36.43	35.79
Extremely important	24758	47.60	49.11
Total	52012	100.00	100.00

How important for research integrity: Supervision & Mentoring	n	raw %	weighted %
Not important at all	1141	2.20	2.09
Somewhat important	3343	6.43	6.78
Fairly important	8491	16.34	16.02
Very important	20710	39.86	37.93
Extremely important	18275	35.17	37.17
Total	51960	100.00	100.00

How important for research integrity: Integrity Training	n	raw %	weighted %
Not important at all	1787	3.44	3.38
Somewhat important	6844	13.19	12.87
Fairly important	13202	25.45	23.68
Very important	18250	35.17	35.09
Extremely important	11801	22.74	24.97
Total	51884	100.00	100.00

How important for research integrity: Ethics Structures	n	raw %	weighted %
Not important at all	1986	3.83	4.14

How important for research integrity: Ethics Structures	n	raw %	weighted %
Somewhat important	5632	10.86	10.47
Fairly important	10510	20.26	20.29
Very important	18430	35.52	33.80
Extremely important	15323	29.53	31.30
Total	51881	100.00	100.00

How important for research integrity: Integrity Breaches	n	raw %	weighted %
Not important at all	1182	2.29	2.33
Somewhat important	4730	9.15	7.73
Fairly important	12091	23.38	20.40
Very important	20043	38.76	38.17
Extremely important	13659	26.42	31.36
Total	51705	100.00	100.00

How important for research integrity: Data Management	n	raw %	weighted %
Not important at all	1431	2.76	2.99
Somewhat important	4230	8.15	7.11
Fairly important	10246	19.73	18.42
Very important	20579	39.63	38.64
Extremely important	15437	29.73	32.85
Total	51923	100.00	100.00

How important for research integrity: Research Collaboration	n	raw %	weighted %
Not important at all	1534	2.96	3.49
Somewhat important	5606	10.81	10.62
Fairly important	12796	24.68	24.62
Very important	20685	39.89	38.81
Extremely important	11233	21.66	22.46
Total	51854	100.00	100.00

How important for research integrity: Declaration of Interests	n	raw %	weighted %
Not important at all	1354	2.61	2.86
Somewhat important	5147	9.91	9.06
Fairly important	11412	21.98	21.17
Very important	20002	38.53	36.41
Extremely important	13998	26.96	30.50
Total	51913	100.00	100.00

How important for research integrity: Publication and Communication	n	raw %	weighted %
Not important at all	1155	2.22	2.15
Somewhat important	3458	6.64	7.31
Fairly important	9745	18.72	20.19
Very important	22070	42.40	40.99
Extremely important	15619	30.01	29.35
Total	52047	100.00	100.00

Confident your research is meeting high research integrity standards	n	raw %	weighted %
Very confident	29285	55.07	60.99
Somewhat confident	21725	40.85	35.54
Not very confident	1946	3.66	3.07
Not at all confident	225	0.42	0.41
Total	53181	100.00	100.00

Would you value additional support: Working Environment	n	raw %	weighted %
No	35767	66.49	69.34
Yes	18030	33.51	30.66
Total	53797	100.00	100.00

Would you value additional support: Supervision & Mentoring	n	raw %	weighted %
No	35485	65.96	67.25
Yes	18312	34.04	32.75
Total	53797	100.00	100.00
Would you value additional support: Integrity Training	n	raw %	weighted %
No	39633	73.67	77.68
Yes	14164	26.33	22.32
Total	53797	100.00	100.00
Would you value additional support: Ethics Structures	n	raw %	weighted %
No	44137	82.04	84.95
Yes	9660	17.96	15.05
Total	53797	100.00	100.00
Would you value additional support: Integrity Breaches	n	raw %	weighted %
No	43216	80.33	82.34
Yes	10581	19.67	17.66
Total	53797	100.00	100.00
Would you value additional support: Data Management	n	raw %	weighted %
No	36740	68.29	70.47
Yes	17057	31.71	29.53
Total	53797	100.00	100.00
Would you value additional support: Research Collaboration	n	raw %	weighted %
No	32771	60.92	65.38
Yes	21026	39.08	34.62
Total	53797	100.00	100.00

Would you value additional support: Declaration of Interests	n	raw %	weighted %
No	47263	87.85	89.96
Yes	6534	12.15	10.04
Total	53797	100.00	100.00

Would you value additional support: Publication and Communication	n	raw %	weighted %
No	33925	63.06	66.29
Yes	19872	36.94	33.71
Total	53797	100.00	100.00

Motivation for following procedures: More reliable scientific knowledge	n	raw %	weighted %
Not at all motivating	1951	3.87	4.04
Somewhat motivating	2647	5.24	5.09
Fairly motivating	7392	14.64	13.86
Very motivating	19381	38.39	36.11
Extremely motivating	19107	37.85	40.89
Total	50478	100.00	100.00

Motivation for following procedures: Increased funding opportunities	n	raw %	weighted %
Not at all motivating	3478	6.88	7.98
Somewhat motivating	4647	9.19	10.43
Fairly motivating	9815	19.40	18.97
Very motivating	18048	35.68	32.81
Extremely motivating	14593	28.85	29.81
Total	50581	100.00	100.00

Motivation for following procedures: Collaboration with other researchers	n	raw %	weighted %
Not at all motivating	2095	4.15	4.49

Motivation for following procedures: Collaboration with other researchers	n	raw %	weighted %
Somewhat motivating	3953	7.83	7.81
Fairly motivating	10677	21.14	22.79
Very motivating	21571	42.71	40.11
Extremely motivating	12209	24.17	24.81
Total	50505	100.00	100.00

Motivation for following procedures: Publish in higher status outlets	n	raw %	weighted %
Not at all motivating	3392	6.71	8.15
Somewhat motivating	4415	8.74	10.96
Fairly motivating	9450	18.70	18.72
Very motivating	18650	36.91	35.10
Extremely motivating	14620	28.94	27.07
Total	50527	100.00	100.00

Motivation for following procedures: Better reputation in my field	n	raw %	weighted %
Not at all motivating	2934	5.80	6.55
Somewhat motivating	4581	9.06	9.01
Fairly motivating	10262	20.30	20.07
Very motivating	19249	38.08	36.37
Extremely motivating	13527	26.76	28.00
Total	50553	100.00	100.00

Motivation for following procedures: Increased chance of promotion	n	raw %	weighted %
Not at all motivating	8042	15.96	18.02
Somewhat motivating	7697	15.27	15.45
Fairly motivating	12616	25.03	23.91
Very motivating	13690	27.16	25.15

Motivation for following procedures: Increased chance of promotion	n	raw %	weighted %
Extremely motivating	8355	16.58	17.47
Total	50400	100.00	100.00

Motivation for following procedures: Higher salary	n	raw %	weighted %
Not at all motivating	8996	17.83	18.35
Somewhat motivating	8145	16.14	16.61
Fairly motivating	12286	24.35	24.37
Very motivating	12339	24.46	22.46
Extremely motivating	8686	17.22	18.22
Total	50452	100.00	100.00

Motivation for following procedures: More trust in my re- search by general public	n	raw %	weighted %
Not at all motivating	3119	6.17	7.07
Somewhat motivating	5212	10.32	9.70
Fairly motivating	10964	21.70	19.67
Very motivating	18161	35.95	35.07
Extremely motivating	13061	25.85	28.49
Total	50517	100.00	100.00

Motivation for following procedures: More trust in my re- search by my colleagues	n	raw %	weighted %
Not at all motivating	2505	4.95	4.83
Somewhat motivating	4123	8.15	7.53
Fairly motivating	10019	19.81	18.55
Very motivating	20113	39.78	38.98
Extremely motivating	13806	27.30	30.10
Total	50566	100.00	100.00

Motivation for following procedures: Increased self-confidence in my research	n	raw %	weighted %
Not at all motivating	3973	7.87	8.84
Somewhat motivating	5063	10.03	10.36
Fairly motivating	10430	20.66	20.95
Very motivating	17766	35.20	33.26
Extremely motivating	13244	26.24	26.59
Total	50476	100.00	100.00

Language used for questionable research practice questions	n	raw %	weighted %
English	49506	77.26	81.91
Austrian	608	0.95	0.48
Croatian	749	1.17	0.31
Czech	767	1.20	0.54
French	1209	1.89	2.75
German	2030	3.17	4.17
Greek	1304	2.04	0.86
Italian	2709	4.23	3.84
Polish	1168	1.82	1.65
Portuguese	1991	3.11	0.72
Spanish	2033	3.17	2.76
Total	64074	100.00	100.00

QRP: failing to cite publications that contradict your beliefs	n	raw %	weighted %
Does not apply in my case	2367	4.58	4.26
Never	38667	74.89	78.05
Rarely	8247	15.97	14.14
Sometimes	1895	3.67	2.80
Often	454	0.88	0.75
Total	51630	100.00	100.00

QRP: not conducting a thorough review	n	raw %	weighted %
Does not apply in my case	2716	5.26	4.78
Never	23618	45.74	45.50
Rarely	17354	33.61	34.56
Sometimes	7041	13.63	13.56
Often	911	1.76	1.59
Total	51640	100.00	100.00

QRP: choosing not to report your own findings if they contradict your theories	n	raw %	weighted %
Does not apply in my case	4413	8.55	7.40
Never	35880	69.48	70.92
Rarely	8684	16.82	16.48
Sometimes	2331	4.51	4.70
Often	334	0.65	0.49
Total	51642	100.00	100.00

QRP: using a researcher's idea without giving credit	n	raw %	weighted %
Does not apply in my case	2214	4.28	3.82
Never	46105	89.20	89.77
Rarely	2347	4.54	4.22
Sometimes	835	1.62	1.87
Often	189	0.37	0.32
Total	51690	100.00	100.00

QRP: failing to disclose conflict of interest	n	raw %	weighted %
Does not apply in my case	6432	12.47	11.08
Never	40806	79.08	81.92
Rarely	3082	5.97	5.17
Sometimes	983	1.91	1.37
Often	296	0.57	0.46

QRP: failing to disclose conflict of interest	n	raw %	weighted %
Total	51599	100.00	100.00

QRP: including authors who had not contributed sufficiently	n	raw %	weighted %
Does not apply in my case	2869	5.56	3.93
Never	18197	35.25	34.91
Rarely	14341	27.78	29.19
Sometimes	11752	22.77	23.40
Often	4464	8.65	8.57
Total	51623	100.00	100.00

QRP: inadequately supervising junior co-worker	n	raw %	weighted %
Does not apply in my case	8210	15.89	15.12
Never	23082	44.68	40.81
Rarely	13455	26.04	29.52
Sometimes	5675	10.98	12.37
Often	1242	2.40	2.18
Total	51664	100.00	100.00

QRP: carrying out research without ethical approval	n	raw %	weighted %
Does not apply in my case	12613	24.42	24.04
Never	31083	60.17	64.51
Rarely	4948	9.58	7.42
Sometimes	2218	4.29	2.85
Often	797	1.54	1.18
Total	51659	100.00	100.00

How important for training: Intellectually stimulating	n	raw %	weighted %
Not important at all	2146	4.30	4.31
Somewhat important	4471	8.96	8.37

How important for training: Intellectually stimulating	n	raw %	weighted %
Fairly important	10580	21.20	20.71
Very important	21241	42.56	42.18
Extremely important	11476	22.99	24.43
Total	49914	100.00	100.00

How important for training: Applicable across multiple fields	n	raw %	weighted %
Not important at all	5554	11.20	12.78
Somewhat important	8544	17.23	17.85
Fairly important	13574	27.38	26.50
Very important	15669	31.61	30.35
Extremely important	6234	12.57	12.51
Total	49575	100.00	100.00

How important for training: Takes a short amount of time	n	raw %	weighted %
Not important at all	2210	4.44	4.28
Somewhat important	6023	12.09	11.00
Fairly important	15132	30.38	28.59
Very important	16865	33.86	34.30
Extremely important	9571	19.22	21.84
Total	49801	100.00	100.00

How important for training: Available online in your own time	n	raw %	weighted %
Not important at all	4298	8.63	8.62
Somewhat important	6817	13.69	12.86
Fairly important	11848	23.80	23.09
Very important	16417	32.98	33.57
Extremely important	10403	20.90	21.86
Total	49783	100.00	100.00

How important for training: Of practical use to me in my re- search	n	raw %	weighted %
Not important at all	1387	2.78	2.98
Somewhat important	2477	4.97	4.59
Fairly important	7203	14.46	13.34
Very important	20745	41.64	41.40
Extremely important	18005	36.14	37.70
Total	49817	100.00	100.00

How important for training: Would help me supervising staff / students	n	raw %	weighted %
Not important at all	3182	6.41	7.55
Somewhat important	5216	10.50	10.07
Fairly important	11216	22.58	21.33
Very important	19433	39.12	38.78
Extremely important	10625	21.39	22.27
Total	49672	100.00	100.00

How important for training: Enjoyable	n	raw %	weighted %
Not important at all	3187	6.42	6.18
Somewhat important	6917	13.93	13.51
Fairly important	14745	29.69	28.06
Very important	16436	33.09	33.79
Extremely important	8381	16.87	18.46
Total	49666	100.00	100.00

How important for training: Delivered face to face with the trainer	n	raw %	weighted %
Not important at all	12888	26.01	32.60
Somewhat important	12419	25.06	24.73
Fairly important	12705	25.64	22.71
Very important	8299	16.75	13.72

How important for training: Delivered face to face with the trainer	n	raw %	weighted %
Extremely important	3248	6.55	6.26
Total	49559	100.00	100.00

How important for training: Would help me making grant applications	n	raw %	weighted %
Not important at all	5890	11.85	15.83
Somewhat important	8144	16.38	18.02
Fairly important	12363	24.87	23.14
Very important	14617	29.40	26.23
Extremely important	8701	17.50	16.79
Total	49715	100.00	100.00

Importance of trainer features: Specialist knowledge of re- search integrity	n	raw %	weighted %
Not important at all	948	1.90	2.47
Somewhat important	2475	4.97	5.97
Fairly important	7314	14.70	15.05
Very important	20163	40.51	38.84
Extremely important	18872	37.92	37.67
Total	49772	100.00	100.00

Importance of trainer features: Being an active researcher	n	raw %	weighted %
Not important at all	1962	3.93	4.97
Somewhat important	4227	8.48	10.99
Fairly important	10145	20.34	22.50
Very important	19686	39.48	35.60
Extremely important	13848	27.77	25.94
Total	49868	100.00	100.00

Importance of trainer features: Respected in their field	n	raw %	weighted %
Not important at all	2241	4.51	5.43
Somewhat important	4883	9.82	11.36
Fairly important	11125	22.37	22.86
Very important	19721	39.66	37.07
Extremely important	11761	23.65	23.27
Total	49731	100.00	100.00

Importance of trainer features: Member of my own department	n	raw %	weighted %
Not important at all	35249	71.09	73.97
Somewhat important	6460	13.03	12.52
Fairly important	4833	9.75	8.39
Very important	2266	4.57	3.57
Extremely important	778	1.57	1.55
Total	49586	100.00	100.00

Importance of trainer features: In: depth knowledge of my own field	n	raw %	weighted %
Not important at all	4922	9.89	12.62
Somewhat important	9438	18.95	21.03
Fairly important	13189	26.49	26.13
Very important	13647	27.41	24.86
Extremely important	8596	17.26	15.35
Total	49792	100.00	100.00

Importance of trainer features: External to my organisation	n	raw %	weighted %
Not important at all	18276	36.82	42.01
Somewhat important	7060	14.22	13.93
Fairly important	10285	20.72	19.11
Very important	9045	18.22	15.66

Importance of trainer features: External to my organisation	n	raw %	weighted %
Extremely important	4975	10.02	9.29
Total	49641	100.00	100.00

Importance for good supervision: Tangible rewards for good supervision	n	raw %	weighted %
Not important at all	5030	10.21	9.83
Somewhat important	9331	18.94	18.92
Fairly important	15302	31.06	29.65
Very important	14746	29.93	30.41
Extremely important	4862	9.87	11.19
Total	49271	100.00	100.00

Importance for good supervision: Well-being/mental health support for supervisee	n	raw %	weighted %
Not important at all	1481	3.01	3.08
Somewhat important	5224	10.63	10.22
Fairly important	12503	25.43	24.18
Very important	19148	38.95	38.04
Extremely important	10808	21.98	24.48
Total	49164	100.00	100.00

Importance for good supervision: Procedure to change supervisor if necessary	n	raw %	weighted %
Not important at all	832	1.69	1.75
Somewhat important	4167	8.47	7.58
Fairly important	12933	26.28	24.74
Very important	20577	41.81	40.83
Extremely important	10711	21.76	25.10
Total	49220	100.00	100.00

Importance for good supervision: Evaluation structures for supervision	n	raw %	weighted %
Not important at all	1363	2.77	2.75
Somewhat important	5126	10.43	9.53
Fairly important	13722	27.91	26.00
Very important	19964	40.60	40.74
Extremely important	8993	18.29	20.97
Total	49168	100.00	100.00

How positive do you feel about having supervisory responsibilities?	n	raw %	weighted %
Very positive	16106	49.63	48.56
Positive	13595	41.89	43.27
Neither positive nor negative	2418	7.45	6.80
Negative	299	0.92	1.26
Very negative	34	0.10	0.11
Total	32452	100.00	100.00

How confident are you that you are meeting the needs of your supervisees?	n	raw %	weighted %
Very confident	11976	37.01	36.04
Somewhat confident	18936	58.52	59.33
Not very confident	1392	4.30	4.47
Not at all confident	56	0.17	0.16
Total	32360	100.00	100.00

Importance, supervisor: Knowledge of institutional support structures	n	raw %	weighted %
Not important at all	416	0.84	0.89
Somewhat important	3606	7.27	6.78
Fairly important	14016	28.27	26.96
Very important	22217	44.82	44.33

Importance, supervisor: Knowledge of institutional support structures	n	raw %	weighted %
Extremely important	9316	18.79	21.04
Total	49571	100.00	100.00

Importance, supervisor: Familiarity with PhD or relevant procedures	n	raw %	weighted %
Not important at all	427	0.86	1.88
Somewhat important	2297	4.63	5.79
Fairly important	9264	18.69	18.87
Very important	21938	44.26	42.50
Extremely important	15636	31.55	30.96
Total	49562	100.00	100.00

Importance, supervisor: Ability to act as exemplar	n	raw %	weighted %
Not important at all	294	0.59	0.50
Somewhat important	1632	3.29	2.88
Fairly important	7585	15.30	13.02
Very important	21778	43.93	43.33
Extremely important	18286	36.89	40.27
Total	49575	100.00	100.00

Importance, supervisor: Ability to communicate effectively	n	raw %	weighted %
Not important at all	522	1.05	0.90
Somewhat important	2493	5.02	4.62
Fairly important	8753	17.64	15.12
Very important	21921	44.18	43.90
Extremely important	15923	32.10	35.46
Total	49612	100.00	100.00

Importance, supervisor: Engage supervisee in decision: making process	n	raw %	weighted %
Not important at all	204	0.41	0.28
Somewhat important	1354	2.73	2.01
Fairly important	7389	14.92	13.66
Very important	24862	50.19	49.18
Extremely important	15728	31.75	34.87
Total	49537	100.00	100.00

Importance, supervisor: Create balance between support and independence	n	raw %	weighted %
Not important at all	107	0.22	0.26
Somewhat important	633	1.28	0.84
Fairly important	4284	8.63	8.25
Very important	21390	43.10	42.81
Extremely important	23212	46.77	47.83
Total	49626	100.00	100.00

Importance, supervisor: Ability to provide personal guidance	n	raw %	weighted %
Not important at all	290	0.58	0.83
Somewhat important	2225	4.48	4.89
Fairly important	8314	16.75	18.53
Very important	23049	46.44	44.98
Extremely important	15752	31.74	30.76
Total	49630	100.00	100.00

Importance evaluating performance: Societal impact of research	n	raw %	weighted %
Not important at all	4265	8.76	10.32
Somewhat important	10956	22.50	26.77
Fairly important	15016	30.84	29.14

Importance evaluating performance: Societal impact of re- search	n	raw %	weighted %
Very important	13922	28.59	24.99
Extremely important	4530	9.30	8.78
Total	48689	100.00	100.00
Importance evaluating performance: Teaching	n	raw %	weighted %
Not important at all	1797	3.70	5.04
Somewhat important	6782	13.95	16.82
Fairly important	15189	31.23	30.84
Very important	19053	39.18	35.95
Extremely important	5811	11.95	11.34
Total	48632	100.00	100.00
Importance evaluating performance: Peer review	n	raw %	weighted %
Not important at all	732	1.51	1.62
Somewhat important	5120	10.54	11.48
Fairly important	15710	32.33	31.93
Very important	21106	43.44	42.07
Extremely important	5923	12.19	12.90
Total	48591	100.00	100.00
Importance evaluating performance: Editorship of journals and other publications	n	raw %	weighted %
Not important at all	3605	7.42	10.30
Somewhat important	12291	25.30	30.86
Fairly important	17461	35.94	33.30
Very important	12271	25.26	20.92
Extremely important	2954	6.08	4.61
Total	48582	100.00	100.00

Importance evaluating performance: Supervisory responsibilities	n	raw %	weighted %
Not important at all	699	1.44	2.50
Somewhat important	4226	8.70	10.26
Fairly important	14075	28.97	29.78
Very important	22611	46.54	44.39
Extremely important	6968	14.34	13.07
Total	48579	100.00	100.00

Importance evaluating performance: Outreach and communication of research	n	raw %	weighted %
Not important at all	1645	3.39	3.99
Somewhat important	8311	17.10	20.37
Fairly important	16468	33.89	34.02
Very important	17156	35.30	32.12
Extremely important	5016	10.32	9.51
Total	48596	100.00	100.00

Importance evaluating performance: Leadership	n	raw %	weighted %
Not important at all	1873	3.86	3.31
Somewhat important	6429	13.24	12.87
Fairly important	14503	29.88	27.71
Very important	18294	37.69	38.98
Extremely important	7445	15.34	17.14
Total	48544	100.00	100.00

Importance evaluating performance: Publication metrics	n	raw %	weighted %
Not important at all	5267	10.83	11.63
Somewhat important	11311	23.26	25.29
Fairly important	15531	31.94	32.70
Very important	12409	25.52	23.55

Importance evaluating performance: Publication metrics	n	raw %	weighted %
Extremely important	4113	8.46	6.82
Total	48631	100.00	100.00

Importance evaluating performance: Collegiality	n	raw %	weighted %
Not important at all	1118	2.31	2.75
Somewhat important	4377	9.03	9.69
Fairly important	12214	25.19	24.41
Very important	19696	40.62	39.22
Extremely important	11078	22.85	23.93
Total	48483	100.00	100.00

Importance evaluating performance: Participation/delivery research integrity training	n	raw %	weighted %
Not important at all	5994	12.36	13.91
Somewhat important	12287	25.34	27.13
Fairly important	15553	32.07	31.14
Very important	11408	23.52	21.39
Extremely important	3255	6.71	6.42
Total	48497	100.00	100.00

Mandatory research integrity training should be integrated in the curriculum for Bachelor, Master, and PhD students	n	raw %	weighted %
Yes	1543	32.78	32.48
No	2008	42.66	39.06
Don't know	1156	24.56	28.46
Total	4707	100.00	100.00

Mandatory research integrity training should be integrated in the curriculum for Bachelor, Master, and PhD students	n	raw %	weighted %
Extremely good idea	1410	29.99	32.35
Very good idea	1487	31.63	32.57

Mandatory research integrity training should be integrated in the curriculum for Bachelor, Master, and PhD students	n	raw %	weighted %
Good idea	1244	26.46	23.39
Neither good nor bad idea	432	9.19	9.71
Bad idea	77	1.64	1.23
Very bad idea	16	0.34	0.15
Extremely bad idea	35	0.74	0.59
Total	4701	100.00	100.00

All researchers should be required to complete research integrity training every 2-3 years to update their knowledge	n	raw %	weighted %
Yes	526	11.05	19.62
No	3291	69.11	60.30
Don't know	945	19.84	20.08
Total	4762	100.00	100.00

All researchers should be required to complete research integrity training every 2-3 years to update their knowledge	n	raw %	weighted %
Extremely good idea	479	10.08	14.02
Very good idea	887	18.67	16.65
Good idea	1591	33.49	34.18
Neither good nor bad idea	1155	24.32	20.90
Bad idea	427	8.99	8.44
Very bad idea	98	2.06	3.34
Extremely bad idea	113	2.38	2.48
Total	4750	100.00	100.00

All researchers starting a new position should be required to complete research integrity training	n	raw %	weighted %
Yes	967	20.20	28.81
No	2801	58.50	49.11

All researchers starting a new position should be required to complete research integrity training	n	raw %	weighted %
Don't know	1020	21.30	22.08
Total	4788	100.00	100.00

All researchers starting a new position should be required to complete research integrity training	n	raw %	weighted %
Extremely good idea	1035	21.65	25.76
Very good idea	1429	29.90	28.83
Good idea	1441	30.15	30.99
Neither good nor bad idea	688	14.39	11.82
Bad idea	106	2.22	1.40
Very bad idea	38	0.79	0.44
Extremely bad idea	43	0.90	0.77
Total	4780	100.00	100.00

Training should be provided for non-research skills such as conflict management, listening, and other “soft” skills	n	raw %	weighted %
Yes	1700	35.21	38.03
No	2030	42.05	38.83
Don't know	1098	22.74	23.14
Total	4828	100.00	100.00

Training should be provided for non-research skills such as conflict management, listening, and other “soft” skills	n	raw %	weighted %
Extremely good idea	1223	25.43	28.24
Very good idea	1402	29.15	27.06
Good idea	1386	28.82	30.14
Neither good nor bad idea	645	13.41	11.74
Bad idea	99	2.06	1.39
Very bad idea	33	0.69	1.15
Extremely bad idea	21	0.44	0.28

Training should be provided for non-research skills such as conflict management, listening, and other “soft” skills	n	raw %	weighted %
Total	4809	100.00	100.00

Established researchers should be required to follow training to build new skills and to update their methods	n	raw %	weighted %
Yes	1306	27.30	31.10
No	2360	49.33	44.08
Don't know	1118	23.37	24.81
Total	4784	100.00	100.00

Established researchers should be required to follow training to build new skills and to update their methods	n	raw %	weighted %
Extremely good idea	1054	22.09	22.87
Very good idea	1468	30.76	28.32
Good idea	1311	27.47	28.82
Neither good nor bad idea	634	13.29	13.17
Bad idea	193	4.04	4.65
Very bad idea	51	1.07	1.08
Extremely bad idea	61	1.28	1.09
Total	4772	100.00	100.00

Supervisors and supervisees should be required to sign agreements laying out the expectations and obligations of supervision at the outset	n	raw %	weighted %
Yes	1352	28.08	27.01
No	2473	51.36	52.72
Don't know	990	20.56	20.27
Total	4815	100.00	100.00

Supervisors and supervisees should be required to sign agreements laying out the expectations and obligations of supervision at the outset	n	raw %	weighted %
Extremely good idea	756	15.79	15.70

Supervisors and supervisees should be required to sign agreements laying out the expectations and obligations of supervision at the outset	n	raw %	weighted %
Very good idea	1215	25.38	24.96
Good idea	1449	30.26	35.49
Neither good nor bad idea	984	20.55	16.01
Bad idea	278	5.81	6.08
Very bad idea	46	0.96	1.00
Extremely bad idea	60	1.25	0.76
Total	4788	100.00	100.00

An independent body should be in place for supervisees and supervisors to turn to in the event of problems	n	raw %	weighted %
Yes	1492	31.93	37.64
No	1751	37.48	32.88
Don't know	1429	30.59	29.48
Total	4672	100.00	100.00

An independent body should be in place for supervisees and supervisors to turn to in the event of problems	n	raw %	weighted %
Extremely good idea	1218	26.11	33.08
Very good idea	1459	31.28	30.90
Good idea	1305	27.97	24.40
Neither good nor bad idea	565	12.11	9.16
Bad idea	78	1.67	1.45
Very bad idea	20	0.43	0.19
Extremely bad idea	20	0.43	0.82
Total	4665	100.00	100.00

Mandatory training on supervision should be provided to all supervisors.	n	raw %	weighted %
Yes	1115	23.37	26.91
No	2758	57.80	52.11

Mandatory training on supervision should be provided to all supervisors.	n	raw %	weighted %
Don't know	899	18.84	20.98
Total	4772	100.00	100.00

Mandatory training on supervision should be provided to all supervisors.	n	raw %	weighted %
Extremely good idea	1342	28.20	32.25
Very good idea	1408	29.59	25.47
Good idea	1273	26.75	26.63
Neither good nor bad idea	539	11.33	11.69
Bad idea	140	2.94	2.30
Very bad idea	23	0.48	0.74
Extremely bad idea	34	0.71	0.91
Total	4759	100.00	100.00

Organisations should not assess researchers using metrics that emphasise quantity or journal-level impact, such as publication counts, Hindex and Journal Impact Factor	n	raw %	weighted %
Yes	1441	30.68	26.57
No	2300	48.97	48.36
Don't know	956	20.35	25.06
Total	4697	100.00	100.00

Organisations should not assess researchers using metrics that emphasise quantity or journal-level impact, such as publication counts, Hindex and Journal Impact Factor	n	raw %	weighted %
Extremely good idea	721	15.39	18.46
Very good idea	843	17.99	18.87
Good idea	1001	21.37	20.80
Neither good nor bad idea	1180	25.19	22.73
Bad idea	671	14.32	14.24
Very bad idea	151	3.22	3.04

Organisations should not assess researchers using metrics that emphasise quantity or journal-level impact, such as publication counts, Hindex and Journal Impact Factor	n	raw %	weighted %
Extremely bad idea	118	2.52	1.86
Total	4685	100.00	100.00

Good researchers who are not suitable research leaders should be allowed to progress in their career without the need to take on research leader tasks	n	raw %	weighted %
Yes	1883	40.06	39.75
No	1314	27.95	29.25
Don't know	1504	31.99	31.00
Total	4701	100.00	100.00

Good researchers who are not suitable research leaders should be allowed to progress in their career without the need to take on research leader tasks	n	raw %	weighted %
Extremely good idea	818	17.49	19.81
Very good idea	1165	24.91	21.43
Good idea	1360	29.08	29.23
Neither good nor bad idea	868	18.56	18.18
Bad idea	340	7.27	9.10
Very bad idea	75	1.60	1.12
Extremely bad idea	50	1.07	1.12
Total	4676	100.00	100.00

Team leaders (e.g. principal investigators) should be periodically assessed by asking colleagues about their leadership skills	n	raw %	weighted %
Yes	916	19.23	20.78
No	2738	57.48	57.02
Don't know	1109	23.28	22.20
Total	4763	100.00	100.00

Team leaders (e.g. principal investigators) should be periodically assessed by asking colleagues about their leadership skills	n	raw %	weighted %
Extremely good idea	708	14.92	15.84
Very good idea	1259	26.53	25.50
Good idea	1487	31.33	32.57
Neither good nor bad idea	926	19.51	19.89
Bad idea	268	5.65	4.98
Very bad idea	45	0.95	0.52
Extremely bad idea	53	1.12	0.69
Total	4746	100.00	100.00

Organisations should provide researchers with an independent research integrity counselling service that can provide advice on research integrity dilemmas or queries	n	raw %	weighted %
Yes	897	18.83	17.26
No	2090	43.88	44.23
Don't know	1776	37.29	38.51
Total	4763	100.00	100.00

Organisations should provide researchers with an independent research integrity counselling service that can provide advice on research integrity dilemmas or queries	n	raw %	weighted %
Extremely good idea	906	19.12	21.81
Very good idea	1488	31.40	28.73
Good idea	1636	34.52	32.14
Neither good nor bad idea	609	12.85	14.92
Bad idea	74	1.56	1.96
Very bad idea	9	0.19	0.09
Extremely bad idea	17	0.36	0.34
Total	4739	100.00	100.00

Organisations should appoint research integrity 'champions' (colleagues who can provide informal advice about day-to-day research integrity questions) within every department or unit of their institution	n	raw %	weighted %
Yes	514	11.00	10.84
No	2980	63.77	62.42
Don't know	1179	25.23	26.74
Total	4673	100.00	100.00

Organisations should appoint research integrity 'champions' (colleagues who can provide informal advice about day-to-day research integrity questions) within every department or unit of their institution	n	raw %	weighted %
Extremely good idea	468	10.05	12.34
Very good idea	954	20.49	18.66
Good idea	1628	34.96	36.52
Neither good nor bad idea	1164	24.99	25.42
Bad idea	315	6.76	5.44
Very bad idea	64	1.37	0.68
Extremely bad idea	64	1.37	0.94
Total	4657	100.00	100.00

Organisations should adopt policies on diversity and inclusion for scientific seminars and speaker panels	n	raw %	weighted %
Yes	1653	35.74	39.75
No	1413	30.55	29.30
Don't know	1559	33.71	30.95
Total	4625	100.00	100.00

Organisations should adopt policies on diversity and inclusion for scientific seminars and speaker panels	n	raw %	weighted %
Extremely good idea	1009	21.95	24.80
Very good idea	1154	25.11	21.77
Good idea	1236	26.89	25.85

Organisations should adopt policies on diversity and inclusion for scientific seminars and speaker panels	n	raw %	weighted %
Neither good nor bad idea	777	16.91	16.49
Bad idea	237	5.16	6.85
Very bad idea	65	1.41	1.46
Extremely bad idea	118	2.57	2.78
Total	4596	100.00	100.00

Organisations should monitor and publicly report their commitment, achievements and setbacks in ensuring diversity and inclusion	n	raw %	weighted %
Yes	1797	36.91	43.66
No	1408	28.92	27.07
Don't know	1664	34.18	29.27
Total	4869	100.00	100.00

Organisations should monitor and publicly report their commitment, achievements and setbacks in ensuring diversity and inclusion	n	raw %	weighted %
Extremely good idea	960	19.83	23.12
Very good idea	1301	26.87	24.44
Good idea	1442	29.79	29.49
Neither good nor bad idea	822	16.98	16.80
Bad idea	163	3.37	3.61
Very bad idea	46	0.95	0.62
Extremely bad idea	107	2.21	1.93
Total	4841	100.00	100.00

Researchers should have access to mental health professionals as part of their conditions of employment	n	raw %	weighted %
Yes	1710	36.18	41.21
No	1831	38.74	32.32
Don't know	1185	25.07	26.48

Researchers should have access to mental health professionals as part of their conditions of employment	n	raw %	weighted %
Total	4726	100.00	100.00

Researchers should have access to mental health professionals as part of their conditions of employment	n	raw %	weighted %
Extremely good idea	1348	28.61	34.92
Very good idea	1201	25.49	24.39
Good idea	1218	25.85	25.62
Neither good nor bad idea	774	16.43	12.52
Bad idea	108	2.29	1.94
Very bad idea	25	0.53	0.21
Extremely bad idea	38	0.81	0.40
Total	4712	100.00	100.00

Where an organisation provides a research counselling service, research counsellors should be able to guarantee confidentiality and secrecy to researchers even in cases in which misconduct is being discussed	n	raw %	weighted %
Yes	973	20.60	21.69
No	1047	22.16	21.97
Don't know	2704	57.24	56.34
Total	4724	100.00	100.00

Where an organisation provides a research counselling service, research counsellors should be able to guarantee confidentiality and secrecy to researchers even in cases in which misconduct is being discussed	n	raw %	weighted %
Extremely good idea	1014	21.71	25.98
Very good idea	1363	29.19	27.48
Good idea	1293	27.69	28.12
Neither good nor bad idea	681	14.58	11.63
Bad idea	240	5.14	4.45
Very bad idea	53	1.13	1.95

Where an organisation provides a research counselling service, research counsellors should be able to guarantee confidentiality and secrecy to researchers even in cases in which misconduct is being discussed	n	raw %	weighted %
Extremely bad idea	26	0.56	0.38
Total	4670	100.00	100.00

Organisations should set a maximum number of students a researcher can supervise at once	n	raw %	weighted %
Yes	1400	29.94	22.91
No	2194	46.92	52.03
Don't know	1082	23.14	25.05
Total	4676	100.00	100.00

Organisations should set a maximum number of students a researcher can supervise at once	n	raw %	weighted %
Extremely good idea	1173	25.13	22.70
Very good idea	1476	31.63	27.92
Good idea	1146	24.56	24.28
Neither good nor bad idea	620	13.28	16.46
Bad idea	189	4.05	6.49
Very bad idea	31	0.66	0.42
Extremely bad idea	32	0.69	1.73
Total	4667	100.00	100.00

Organisations should adopt policies on diversity and inclusion for executive boards and university management	n	raw %	weighted %
Yes	1816	38.65	47.49
No	1126	23.97	18.69
Don't know	1756	37.38	33.81
Total	4698	100.00	100.00

Organisations should adopt policies on diversity and inclusion for executive boards and university management	n	raw %	weighted %
Extremely good idea	1124	24.08	32.11
Very good idea	1271	27.23	26.33
Good idea	1217	26.08	22.89
Neither good nor bad idea	736	15.77	11.71
Bad idea	176	3.77	4.65
Very bad idea	54	1.16	0.68
Extremely bad idea	89	1.91	1.63
Total	4667	100.00	100.00

Organisations should ensure that assessment procedures include evaluation from direct colleagues and supervisees as well as from those in a senior position to the member of staff being assessed	n	raw %	weighted %
Yes	1502	32.20	35.70
No	1839	39.42	37.51
Don't know	1324	28.38	26.79
Total	4665	100.00	100.00

Organisations should ensure that assessment procedures include evaluation from direct colleagues and supervisees as well as from those in a senior position to the member of staff being assessed	n	raw %	weighted %
Extremely good idea	514	11.10	13.95
Very good idea	1231	26.58	26.65
Good idea	1619	34.95	37.21
Neither good nor bad idea	926	19.99	15.74
Bad idea	231	4.99	4.29
Very bad idea	49	1.06	1.47
Extremely bad idea	62	1.34	0.69
Total	4632	100.00	100.00

Organisations should actively facilitate peer support groups for researchers at different stages of their career	n	raw %	weighted %
Yes	1555	32.57	36.93
No	2152	45.08	41.44
Don't know	1067	22.35	21.63
Total	4774	100.00	100.00

Organisations should actively facilitate peer support groups for researchers at different stages of their career	n	raw %	weighted %
Extremely good idea	1127	23.71	24.50
Very good idea	1758	36.98	34.63
Good idea	1392	29.28	32.15
Neither good nor bad idea	431	9.07	7.84
Bad idea	27	0.57	0.55
Very bad idea	7	0.15	0.04
Extremely bad idea	12	0.25	0.28
Total	4754	100.00	100.00

Do you think the survey was too short, about right, or too long?	n	raw %	weighted %
Too short	161	0.33	0.33
About right	26648	54.00	56.19
Too long	22543	45.68	43.48
Total	49352	100.00	100.00

Did you find it easy or hard to complete the questionnaire?	n	raw %	weighted %
Easy	20694	41.93	43.15
Neither easy nor hard	25041	50.74	50.34
Hard	3617	7.33	6.51
Total	49352	100.00	100.00

And, taken as a whole, did you find the survey very interesting, interesting or	n	raw %	weighted %
Very interesting	7547	15.30	12.53
Interesting	36675	74.37	74.45
Not at all interesting	5091	10.32	13.02
Total	49313	100.00	100.00



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