January 2025

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# DZHW Scientists Survey 2023

## Data and methods report on the DZHW Scientists Survey 2023

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Research Data Centre for Higher Education
Research and Science Studies

**Bibliographic information**
Fabian, G., Heger, C., Just, A., Weber, A. & Oestreich, T. (2025). DZHW Scientists Survey 2023. Data and methods report on the DZHW Scientists Survey 2023. Hanover: German Centre for Higher Education Research and Science Studies (DZHW).
https://doi.org/10.21249/DZHW:scs2023-dmr-en:1.0.1

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**Imprint**

**Published by**
German Centre for Higher Education Research
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January 2025

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# 1 Study Overview

The DZHW Scientists Survey is a nationwide, representative trend study to explore the working and research conditions at German universities and equivalent higher education institutions with the right to award doctorates. It is intended as a long-term barometer for science and is to be conducted as a regular trend study every three years.

Both science studies and science policy are interested in a comprehensive and precise understanding of the changes in the science system. This requires systematic monitoring and research that can also measure changes over time. Since 2011, the *Hochschulbarometer* (higher education barometer) conducted by the *Stifterverband* has been surveying university management across Germany on the current situation in the German higher education landscape (Böhmer et al. 2011). The *Wissenschaftsbarometer* (science barometer) conducted by *Wissenschaft im Dialog* surveys around 1000 citizens every year on their perceptions, attitudes and trust in science. However, so far there has been a lack of targeted and regular monitoring of the researchers' views. The DZHW Scientists Survey starts at this point and complements these perspectives on the functionality of the science system with the experiences and assessments of the scientists themselves. Their practices, perceptions and attitudes are the focus of the DZHW Scientists Survey.

The DZHW Scientists Survey is aimed at scientists at German universities and equivalent higher education institutions. For this purpose, publicly available address data of professors and research assistants are gathered from the websites of higher education institutions with the right to award doctorates. The Scientists Surveys conducted to date took place in 2010, 2016, 2019/20 and 2023. The current cohort was surveyed in the winter semester 2022/23 from January to March 2023. Although COVID-19 was already known during the field phase of the previous 2019/20 cohort – the first infections and rising incidences in Germany had already occurred by the time the fieldwork was completed – the extent of the pandemic and its impact on the scientists surveyed and their regular research routine was not yet foreseeable for most of them. In contrast, respondents in the current cohort look back retrospectively on working and research times during the pandemic and their current post-pandemic situation. This fact was taken into account both in the design of the survey and in the interpretation of the results. A net analysis sample of 11,371 respondents was realized. This sample is large enough to examine various subgroups (e.g. occupational status group, gender, parenthood, migration experience, educational background) in detail and to carry out comparative subject analyses at a very differentiated level.

The DZHW Scientists Survey is designed as a wide-ranging multi-topic survey. Each survey consists of a core questionnaire with central questions, many of which have already been asked in one or more previous Scientists Surveys, as well as advanced modules with detailed questions on focus topics for which the instruments are developed in cooperation with research groups within and outside the DZHW. The seven focus topics in the advanced modules of the DZHW Scientists Survey 2023 were: Research Information/Digital Infrastructures/Informational Self-Determination, Digital Scholarly Communication, Science Mobility, Research Funding, Trust within Science, Tenure Track and Researcher Independence as well as Peer Review and Lotteries in Research Funding.

The DZHW Scientists Survey is a fundamental tool for assessing and reflecting on the situation at German higher education institutions with the right to award doctorates and provides a comprehensive pattern of opinions on the situation and development of the German science system. Changes over time in attitudes and opinions on science policy issues are examined as part of trend analyses. The data also forms the basis for scholarly publications and serves as an empirical basis for public discussions and political decision-making processes. The key results of the DZHW Scientists Survey 2023 were published as *Barometer für die Wissenschaft – Ergebnisse der Wissenschaftsbefragung 2023* (barometer for science – results of the Scientists Survey 2023) in February 2024 and made publicly available on the project website (Fabian et al. 2024). In addition, the prepared, anonymized data of the DZHW Scientists Survey 2023 will be made available long-term and documented as a scientific use file via the DZHW Research Data Centre (FDZ-DZHW) and thus made accessible to all interested parties in research and science policy.

The following chapters provide information on the methodological details of the survey (population and sample design, field phase and response statistics, sample description, weighting), the content of the survey instrument and the anonymization procedure for the published scientific use file. It should be noted that the variables for the advanced modules/focus topics are currently still subject to an embargo period and are therefore not included in the data provided.

# 2 Methods

## 2.1 Population and sample design

The DZHW Scientists Survey 2023 is a representative online survey of full-time academic and artistic staff at German universities and equivalent institutions of higher education with the right to award doctorates.[1] As no list with contact information exists for this *population*, a sampling frame was defined that comes as close as possible to this population (cf. Gabler & Häder 2015). The *sampling frame* was defined as the scientists with address information who can be found on the websites of the higher education institutions. Assuming that almost all scientists are present on the websites of their institutions and that this information is also kept very up-to-date, such a sampling frame comes as close as possible to the population. Beyond this, no systematic deviations are known.

In the run-up to the survey, address information of academic employees was researched at 158 higher education institutions between May and December 2022 (sampling population). The addresses include professors, postdocs (scientists who have completed a doctorate) and predocs (scientists without a doctorate, regardless of whether they are working on a doctorate or not) if they work full-time at one of these higher education institutions. The e-mail addresses and other information required for the cover letter were semi-automatically processed into address data and quality-checked. Afterwards, a gross address sample of 105,655 addresses was drawn at random from this pool. Professors were fully taken into account and postdocs were selected disproportionately, i.e. with a greater probability than predocs. By design, such a disproportionately stratified sample means that the predocs are initially underrepresented. This must be taken into account in the analyses and compensated by weighting whenever an overall perspective of the scientific staff is adopted. The corresponding weights were generated and integrated into the data set (cf. chapter 2.4).

## 2.2 Field phase and response

On January 13, 2023, the initial mailing to the 105,655 addresses of the gross sample began. This included invitation emails with individualized links to the questionnaire. The field phase lasted until March 31, 2023. Following the invitations, the first reminders were sent to all status groups (professors, postdocs and predocs) between February 2 and 6, and a second reminder was sent to professors and postdocs between February 20 and 23. A few days after the reminders, a separate reminder was sent for persons who started but did not complete the questionnaire. The purpose of these reminders for non-completers was to send persons the direct link to resume the survey so that they did not have to access the survey again via the project website and the data protection policy.

[1] Lecturers, (part-time) private lecturers and honorary professors are therefore not included in the sample.

Table 1: Course of the field phase

| | Date | Effectiveness |
|---|---|---|
| Invitations | | 5,697 (50.1%) |
| Initial contact | January 13-18 | |
| Initial contact (delayed) | January 26 | |
| 1st Reminder | | 3,730 (32.8 %) |
| Reminder | February 2-6 | |
| Reminder (non-completers) | February 13 | |
| 2nd Reminder | | 1,944 (17.1 %) |
| Reminder[a] | February 20-23 | |
| Reminder (non-completers) | February 27 | |

[a] only for professors and postdocs

Figure 1: Course of the field phase

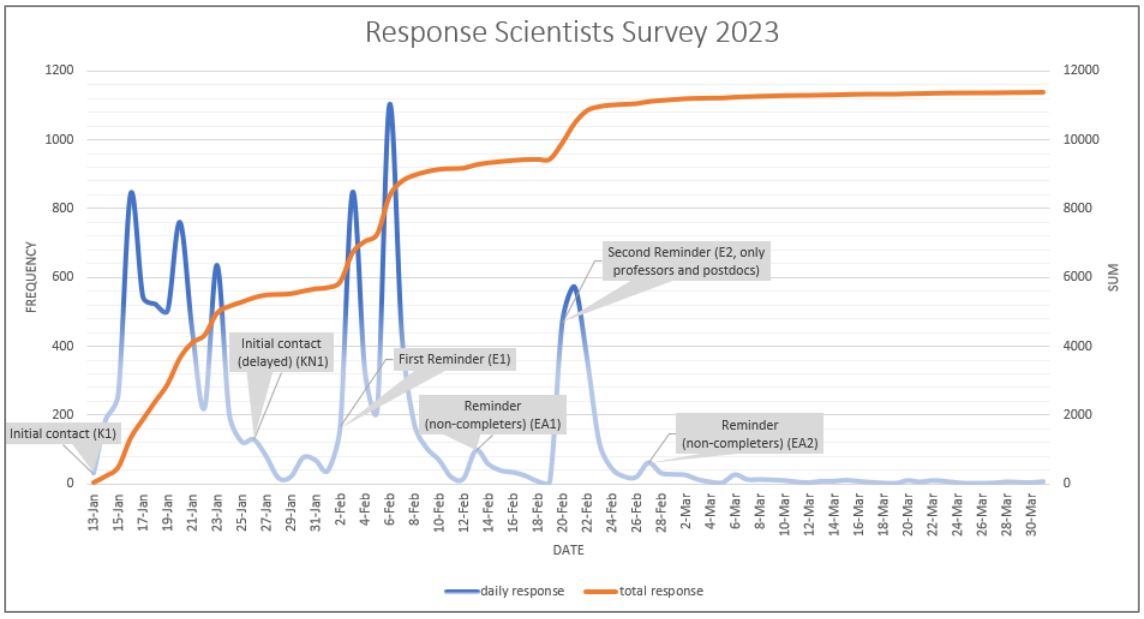



Table 1 and Figure 1 clearly show the positive effect of the reminders. The first reminder generated around 33 percent of the total response and the second reminder, with 1,944 finished and fully analyzable questionnaires, generated 17 percent of the total of 11,371 cases in the net sample.

Of the total of 105,655 cases in the gross address data, no contact could be realized via 15,152 of the addresses (bounced mails) due to outdated or incorrect e-mail addresses that could not be corrected. In addition, some of the initial participants did not belong to the targeted population and were therefore screened out in the questionnaire. Extrapolated to the gross address sample, this corresponds to an estimated size of 9,452 cases that did not belong to the population. The adjusted address sample thus comprises 81,051 cases (cf. Table 2).

Table 2: Response statistics

| | |
|---|---|
| Address sample (gross) [s1] | 105,655 |
| *Bounced mails* | -15,152 |
| Contacted sample [s2] | 90,503 |
| *Not belonging to population (extrapolation[2])* | -9,452 |
| Adjusted address sample [s3] | 81,051 |
| Initial response[3] [r1], thereof: | 14,057 |
| *Survey dropouts[4]* | -2,463 |
| *Incomplete or inconsistent[5]* | -223 |
| Net sample (finished, complete) [r2] | 11,371 |
| Response rate (RR1) [r2/s1] | 10.8 % |
| Response rate (RR2) [r2/s2] | 12.6 % |
| Response rate (RR3) [r2/s3] | 14.0 % |
| Completion rate (1 - dropout rate) | 80.9 % |

2,463 respondents opened the survey but dropped out during the processing. The data cleansing removed a further 223 cases that proved to be excessively incomplete and inconsistent or so-called "speeders". Finally, a net analysis sample of 11,371 scientists could be realized. The completion rate of almost 81 percent is extremely satisfactory for a survey of this length, without pre-acquisition and without material incentives (cf. Galesic & Bosnjak 2009). We attribute this result to the appropriate questions for the situation of the scientists surveyed and a consistent routing of the online questionnaire (cf. chapter 3). A similarly high completion rate was already achieved in the previous DZHW Scientists Survey.

At 14.0% (RR3), the response rate was around 2.5 percentage points lower than in the previous DZHW Scientists Survey in 2019 (cf. Ambrasat et al. 2022). External reasons for this may lie in an increased unwillingness to participate in surveys, in the context of massive hacker attacks on academic institutions and a persistently high survey load for scientists who receive a large number of invitations to (scientific and non-scientific) surveys. One internal reason for the comparatively lower response rate is the slightly lower data quality in the address data set. There was a greatly increased workload for the DZHW in acquiring addresses from more than twice as many higher education institutions (compared to the DZHW Scientists Survey 2019)[6], which resulted in the partial use of already available, newly verified address data from 2019 instead of conducting new research. Compared to the DZHW Scientists Survey 2016, however, the response rate was significantly increased (Neufeld & Johann 2018).

[2] The cases screened out in the questionnaire serve as the basis for extrapolation to the gross address sample, cf. AAPOR 2023.
[3] Respondents who have given their consent under data protection law and were at least on the first page of the questionnaire, minus those who – according to their responses – did not belong to the population.
[4] All respondents who did not reach the last question of the core questionnaire are counted as survey dropouts.
[5] All cases with more than 33 percent item non-response in the entire core questionnaire were deleted as incomplete. Cases are considered inconsistent if they exhibit anomalies such as "speeding", inconsistent biographical or other information on time periods and an inconsistent overall picture in the individual case review.
[6] The address information was researched at as a total of 132 higher education institutions for the DZHW Scientists Survey 2019 (Ambrasat et al. 2022), but the DZHW shared the research equally with the University of Zurich.

The net analysis sample consists of 3,377 professors as well as 4,901 scientists with a doctorate and 3,093 scientists without a doctorate (cf. Table 3).

Table 3: Response by status group

| | Status group | | | |
|---|---|---|---|---|
| **Response status** | **Professor** | **Postdoc** | **Predoc** | **Total** |
| Contacted and belonging to the population | 25,635 | 24,781 | 30,635 | 81,051 |
| Finished | 3,377 | 4,901 | 3,093 | 11,371 |
| Rate (RR3) | 13.2 % | 19.8 % | 10.1 % | 14.0 % |

## 2.3 Sample description

The respondents are distributed relatively evenly across the scientific disciplines. 19.3 percent come from the humanities, 24.7 percent from the social and behavioral sciences, 16 percent from the life sciences, 20.2 percent from the natural sciences and 17.4 percent from the engineering sciences (cf. Table 4). The classification of the 49 fields of study that could be selected in the questionnaire was based on the DFG subject classification for the 2020-2024 term of office. Table 4 shows the DFG scientific disciplines with an additional subdivision into the humanities and social and behavioral sciences.

27.6 percent of participants in the sample are professors, 2.1 percent are junior professors and around 70 percent are research assistants (including research associates and assistant professors). Of the research associates (i. e. research assistants excluding assistant professors), 57.4 percent hold a doctorate and 42.6 percent do not hold a doctorate.

57.3 percent of respondents are male, 41.3 percent are female and just under 0.8 percent classify themselves as diverse.

Table 4: Sample statistics

| | Cases | Percent | Cumulative percent |
|---|---|---|---|
| Scientific discipline according to DFG | | | |
| Humanities | 2,193 | 19.29 | 19.29 |
| Social and behavioral sciences | 2,803 | 24.65 | 43.94 |
| Life sciences | 1,819 | 16.00 | 59.93 |
| Natural sciences | 2,299 | 20.22 | 80.15 |
| Engineering sciences | 1,983 | 17.44 | 97.59 |
| Not assigned | 274 | 2.41 | 100.00 |
| Total | 11,371 | 100.00 | |
| Position | | | |
| Professor | 3,141 | 27.62 | 27.62 |
| Junior professor | 236 | 2.08 | 29.70 |
| Assistant professor | 772 | 6.79 | 36.49 |
| Research associate | 7,222 | 63.51 | 100.00 |
| *thereof with a doctorate* | *4,143* | *57.37* | |
| *thereof without a doctorate* | *3,079* | *42.63* | |
| Total | 11,371 | 100.00 | |
| Gender | | | |
| Male | 6,511 | 57.26 | 57.26 |
| Female | 4,696 | 41.30 | 98.56 |
| Diverse | 87 | 0.77 | 99.32 |
| Not assigned | 77 | 0.68 | 100.00 |
| Total | 11,371 | 100.00 | |

The sample realized can also be compared with the higher education staff statistics published by the Federal Statistical Office of Germany. As the data for 2022/2023 is not yet available, we use the staff statistics of 2021 (cf. Statistisches Bundesamt [Federal Statistical Office of Germany] 2022) for the comparison (Table 5). The comparison shows that the various research areas and subject groups are very well represented across the board. Compared to the statistics of the Federal Statistical Office, the humanities and social/behavioral sciences as well as the natural sciences are slightly overrepresented in the sample, while engineers are slightly underrepresented.

Table 5: Subject distribution compared with the population

| | Staff statistics of the Federal Statistical Office 2021 | | | | | | DZHW Scientists Survey 2023 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Professors | | Research assistants | | Total | | Professors[a] | | Research Assistants[b] | | Total | |
| | N | % | N | % | N | % | N | % | N | % | N | % |
| Humanities | 6,985 | 28.7 | 19,750 | 14.6 | 26,735 | 16.8 | 799 | 24.3 | 1,394 | 17.9 | 2,193 | 19.8 |
| Social and behavioral sciences | 6,055 | 24.9 | 25,585 | 18.9 | 31,640 | 19.8 | 888 | 27.0 | 1,915 | 24.5 | 2,803 | 25.3 |
| Medicine (without clinics) | 1,105 | 4.5 | 12,995 | 9.6 | 14,100 | 8.8 | 245 | 7.4 | 532 | 6.8 | 777 | 7.0 |
| Agriculture, Forestry and Veterinary medicine | 605 | 2.5 | 4,530 | 3.4 | 5,135 | 3.2 | 53 | 1.6 | 152 | 1.9 | 205 | 1.8 |
| Natural sciences | 5,720 | 23.5 | 37,775 | 27.9 | 43,495 | 27.3 | 803 | 24.4 | 2,333 | 29.9 | 3,136 | 28.3 |
| Engineering sciences | 3,845 | 15.8 | 34,535 | 25.5 | 38,380 | 24.0 | 505 | 15.3 | 1,478 | 18.9 | 1,983 | 17.9 |
| Total | 24,315 | 100 | 135,170 | 100 | 159,485 | 100 | 3,293 | 100 | 7,804 | 100 | 11,097 | 100 |
| Not assigned | | | | | | | 84 | | 190 | | 274 | |

[a] incl. professors and junior professors; [b] incl. research associates and assistant professors

## 2.4 Weighting

Weighting is used to prevent inaccuracies in estimators that can be caused by known biases in the sample. There are two sources of such biases in the sample: selectivity due to the survey design and selectivity through deliberate participation or non-response on the part of the respondents (cf. Kroh et al. 2015, Schupp & Wolf 2015). We address both forms with a corresponding weighting.

**Design weighting**

The DZHW Scientists Survey 2023 was conducted as a disproportionately stratified random sample with higher sampling probabilities for professors and postdocs in order to ensure a sufficient number of cases in these groups for detailed analyses. Because the sampling probabilities of professors and postdocs were increased (oversampling), predocs are underrepresented. This design-related underrepresentation of predocs can be compensated for with a design weight. The design weight $w_D$ results directly from the disproportional stratification approach as the inverse of the sampling probability (cf. Table 6).

**Non-Response-Weighting**

To reduce possible biases in the sample resulting from the selective response behavior (non-response) of the respondents, we draw on the information from the gross address sample. Here we use the status groups that are known from the gross sample. The non-response weighting $w_A$ is an adjustment to the corresponding distribution in the *gross sample* and is calculated as the inverse probability of participation of the respective status groups.

**Combined design and non-response weight**

In a third step, we combine the design weighting and the non-response weighting in one weight. This combined probability weight $w_K$ thus adjusts the net sample directly to the sampling population and takes into account both the stratified design and the group-specific non-response. This effectively

corresponds to a combination of the design weight with the non-response weight, making the individual use of these two weights obsolete (cf. Table 6). In the scientific use file we offer both the combined probability weight $w_K$ and the normalized combined probability weight $w_N$.

Table 6: Design and non-response weights

| | Professors | Postdocs | Predocs | Total |
|---|---|---|---|---|
| Sampling population | 25,635 | 41,691 | 94,554 | 161,880 |
| Disproportionately stratified sample (adjusted) | 25,635 | 24,781 | 30,635 | 81,051 |
| Sampling probability | 1 | 0.59 | 0.32 | 0.5 |
| Design weight: $w_D$ | 1 | 2.014 | 4.032 | |
| Net sample | 3,377 | 4,901 | 3,093 | 11,371 |
| Probability of participation | 0.132 | 0.198 | 0.101 | 0.140 |
| Non-response weight: $w_A$ | 7.59 | 5.06 | 9.90 | |
| Combined probability weight: $w_K$ | 7.59 | 8.51 | 31.11 | 14.24 |
| Combined probability weight, normalized: $w_N$ | 0.533 | 0.598 | 2.186 | Mean=1 |

The weighting should be used when estimating average values for scientists across status groups. The weight is not required for analyses differentiating between status groups; nor in multivariate analyses, if the status groups are controlled for. As the information of the status groups differs significantly for the vast majority of the characteristics measured (scientific practices as well as attitudes), it is always advisable to take these group differences into account and report them. If the weights are used, the data are considered representative of the group of scientists defined as the sampling frame.

**Margin adjustment (calibration)**

Depending on the research question, an adjustment (post-stratification) can also be made to known margin distributions of the population. Data from the Federal Statistical Office can be used here. These report the annual figures for full-time academic and artistic staff (cf. Table 5).

The figures for 2023 are expected to be published at the end of 2024 and were not yet available at the editorial deadline for the data and methods report. If users of the scientific use file wish to make this margin adjustment, we recommend using the information on the highest higher education degree ("höchster Hochschulabschluss") (cf. Statistisches Bundesamt [Federal Statistical Office of Germany] 2022) in conjunction with the personnel group ("Personalgruppe"). Whether a margin adjustment makes sense depends on the specific research question and must be examined on a case-by-case basis (see Tirari & Hdioud 2018).

# 3 Survey instrument

The survey instrument of the DZHW Scientists Survey 2023 was a standardized online questionnaire in German and English.[7] In the following, we first explain the basic structure of the questionnaire, in which it was possible to take many topics into account through modularization (chapter 3.1).This is followed by a more detailed description of the specific topics (chapter 3.2).

## 3.1 Modularization

The most important influencing factor for a high response rate and good data quality is an appealing, consistent and not too extensive questionnaire. In order not to make the questionnaire too long and so that the burden on the individual respondents was not too great, the questionnaire was systematically modularized and the modules were randomized. Thus, all respondents were presented with a "core questionnaire", but additionally only questions on one of seven focus topics in so-called "advanced modules". For this purpose, the respondents were randomly assigned to seven different groups A to G within the survey, each of which was assigned to an advanced module (cf. Figure 2).[8] In this way, the very complex survey program was to be reduced for the individual respondents.

A processing time of 25 minutes was announced. Of this time, approximately 20 minutes were set aside for completing the core questionnaire and 5 minutes for completing the advanced modules. Since the status groups (professors, postdocs, predocs) had very different expected processing times due to partially differentiated filtering, this announcement was geared towards the group of professors with the highest expected processing times.

The actual median[9] processing time was 23.2 minutes (cf. Table 7). Respondents who were assigned to advanced module group A had the longest median processing time among the advanced module groups at 24.4 minutes. At 22.0 minutes, respondents who were assigned to advanced module group C had the shortest median processing time.

Differentiated by status group, as expected, the median processing time for professors (24.8 minutes) is significantly longer than for postdocs (23.9 minutes) and predocs (20.3 minutes).

[7] Of the 11,371 respondents (see chapter 2.2), 91 percent completed the German questionnaire and 9 percent completed the English questionnaire. The language was selected at the beginning of the questionnaire and could not be changed during the course of the survey.

[8] It should be noted that the advanced module questions were generally asked in a separate block of questions following the core questionnaire, as shown in Figure 2, but that for the advanced modules D and G individual questions were integrated into the core questionnaire in order to keep the questionnaire more thematically consistent for the respondents. The specific questions can be identified from the filter routing in the questionnaire.

[9] As some respondents had processing times of over an hour, the arithmetic mean deviates significantly from the median. Such sporadically very long processing times are presumably due to interruptions where the survey was not technically terminated or interrupted. The median is more meaningful here as a location parameter than the arithmetic mean because, unlike the arithmetic mean, it is robust against outliers.

Figure 2: Modularization of the DZHW Scientists Survey 2023

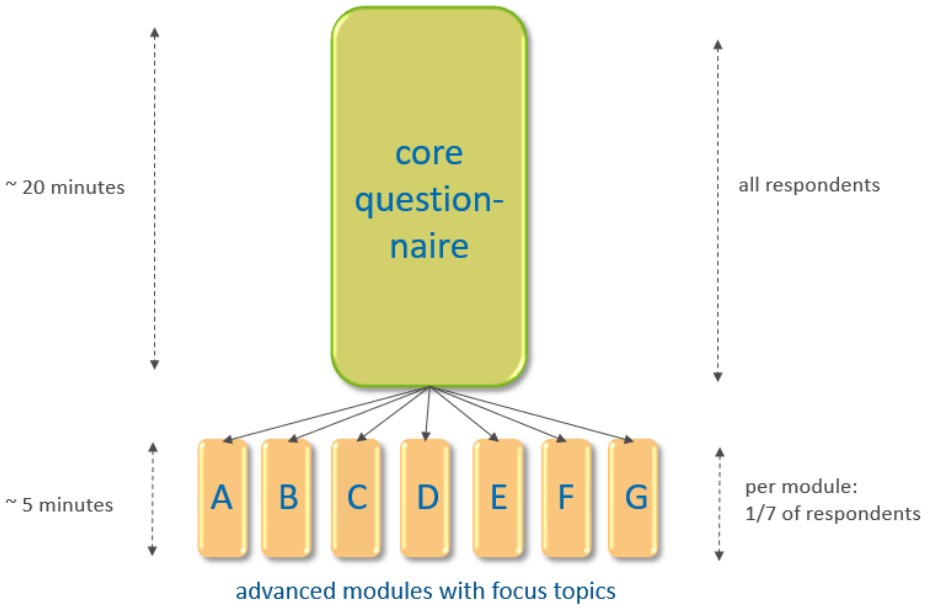



Table 7: Processing times by advanced module group and status group

| | Median | mean | sd | N |
|---|---|---|---|---|
| Advanced module group | | | | |
| Advanced module group A | 24.4 | 26.5 | 14.8 | 1,609 |
| Advanced module group B | 24.0 | 26.2 | 11.9 | 1,671 |
| Advanced module group C | 22.0 | 24.1 | 11.9 | 1,672 |
| Advanced module group D | 22.2 | 24.1 | 12.5 | 1,562 |
| Advanced module group E | 24.2 | 26.5 | 13.5 | 1,702 |
| Advanced module group F | 22.7 | 24.7 | 12.7 | 1,573 |
| Advanced module group G | 23.3 | 25.8 | 13.3 | 1,582 |
| Status group | | | | |
| Professor | 24.8 | 26.8 | 12.8 | 3,377 |
| Postdoc | 23.9 | 26.4 | 14.0 | 4,901 |
| Predoc | 20.3 | 22.5 | 12.0 | 3,093 |
| **Total** | **23.2** | **25.4** | **13.3** | **11,371** |

## 3.2 Topics

The core questionnaire of the DZHW Scientists Survey 2023 contains the following topic blocks:

- Key data on scientific biography
- Research and working conditions
  - Working conditions
  - Assessments of the field
  - Research practice
  - Supervision of young scientists
  - Continuing education courses in higher education didactics
- Research funding
  - Research funding and review
  - Organizational management
- Publication behavior and knowledge transfer
  - Publication behavior
  - Knowledge transfer
- Science policy topics and attitudes
  - Considerations on leaving academia
  - Science policy
  - Research during the corona pandemic
- Demography

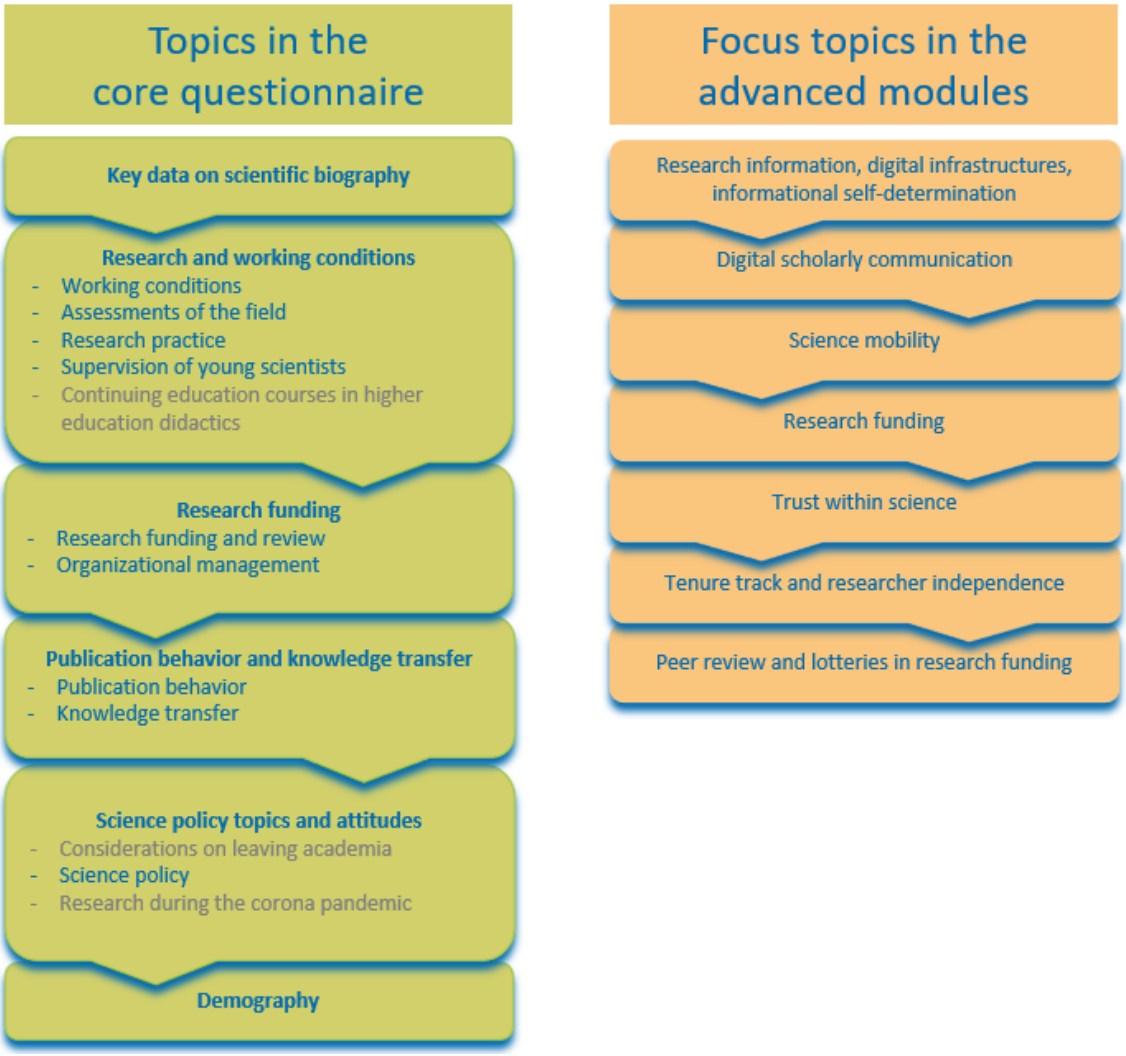
The topics “Continuing education courses in higher education didactics”, “Considerations on leaving academia“ and “Research during the corona pandemic” were included in the DZHW Scientists Survey 2023 for the first time. Within the other topics, a large proportion of the questions were taken from the previous Scientists Surveys of 2009, 2016 and 2019 to be able to analyze changes over time. It should be noted that some questions from the core questionnaire were used secondarily from other instruments – some unmodified, some modified. The sources used for the questions concerned are listed in appendix 6.1.

The advanced modules contain the following focus topics:

- Advanced module A: Research information, digital infrastructures, informational self-determination
- Advanced module B: Digital scholarly communication
- Advanced module C: Science mobility
- Advanced module D: Research funding
- Advanced module E: Trust within science
- Advanced module F: Tenure track and researcher independence
- Advanced module G: Peer review and lotteries in research funding

The number of focus topics was increased from four to seven compared to the DZHW Scientists Survey 2019.

Figure 3: Topics of the DZHW Scientists Survey 2023




Gray font: topic is included in the core questionnaire of a DZHW Scientists Survey for the first time

# 4 Anonymization

The EU General Data Protection Regulation (GDPR) and the Federal Data Protection Act (BDSG) in its revised version of 30 June 2017 apply to personal data[10] collected by the DZHW in voluntary surveys.[11] Accordingly, personal data for secondary scientific use (without a declaration of consent for secondary use of the personal data) must be processed "in such a manner that the personal data can no longer be attributed to a specific data subject without the use of additional information, provided that such additional information is kept separately and is subject to technical and organisational measures to ensure that the personal data are not attributed to an identified or identifiable natural person" (Art. 4 para. 5 GDPR; see also Art. 89 GDPR and Recital 26 GDPR).

At the FDZ-DZHW, the data protection of the respondents is ensured by a combination of legal-organisational, technical and statistical measures.[12] The combinations result in four potential access ways, which are summarized in Table 8.[13]

Table 8: Access ways at the FDZ-DZHW

| | Campus Use File (CUF): Download | Scientific Use File (SUF): Download | Scientific Use File (SUF): Remote-Desktop | Scientific Use File (SUF): On-Site |
|---|---|---|---|---|
| legal-organisational measures | very low | low | moderate | high |
| technical measures | very low | low | moderate | high |
| statistical measures | very high | high | moderate | low |

The more data access is legally-organisationally and technically controlled and restricted, the lower the risk of de-anonymization of the data. As a result, the data must be anonymized less by means of statistical measures, i.e. less information has to be removed from it – which means the greater its analysis potential remains.

For the data of the DZHW Scientists Survey 2023, only the access way "Scientific Use File (SUF): Remote-Desktop" is regularly available and the data is accordingly only prepared for this access way. However, persons who are employed by the DFG (German Research Foundation) at the time the data use agreement is concluded or who enter into an employment relationship with the DFG during the term of data use may only use the data via the "Scientific Use File (SUF): On-Site" access way. This is

[10] "'Personal data' means any information relating to an identified or identifiable natural person ('data subject'); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person" (Art. 4 para. 1 GDPR).

[11] The GDPR generally applies within the EU and therefore also to the DZHW. The BDSG in its new version of 30 June 2017 (Act to Adapt Data Protection Law to the Regulation (EU) 2016/679 and to Implement Directive (EU) 2016/680, (Data Protection Adaptation and Implementation Act-EU (DSAnpUG-EU)) also applies in part, as the DZHW GmbH is legally considered a public body of the federal government (sect. 2 para. 3 BDSG). The federal government holds the absolute majority of shares in DZHW GmbH and the institute fulfils public administration tasks for the federal government in the broadest sense.

[12] The FDZ's data protection concept is based on the portfolio approach of Lane, Heus and Mulcahy (2008, 6ff.), which is already used by the Leibniz Institute for Educational Trajectories (LIfBi) (cf. Koberg, 2016, 699ff.) and the RDC of the German Federal Employment Agency at the Institute for Employment Research (cf. Hochfellner, Müller, Schmucker & Roß, 2012, 9f.).

[13] For more detailed information, see https://www.fdz.dzhw.eu/en/data-usage

due to the fact that DFG employees have access to databases which, in conjunction with the individual data of the DZHW Scientists Survey 2023, represent an increased potential for de-anonymization. Provision via remote desktop is to be refused in this case in order to protect the anonymity of the survey participants. The FDZ-DZHW must be informed immediately of any new employment relationships of data users at the DFG that arise during the term of the data use agreement. The use of the access way "Scientific Use File (SUF): Remote-Desktop" is no longer permitted from the first day of employment at the DFG.

The specific statistical anonymization measures carried out are explained in more detail below.

As part of the statistical anonymization measures, all information was first checked whether it could be used to directly identify individuals. So-called direct identifiers, such as names, addresses and email addresses, were not collected. The original identification number was removed and replaced by a new randomly assigned identification number.

In addition, Ebel and Meyermann's recommendation to delete open responses was followed even if the questions themselves are unproblematic. This is because there is a risk that study participants may have disclosed critical information in actually harmless questions with open response option that could lead to identification (cf. Ebel & Meyermann, 2015, p. 5).

After that, quasi-identifiers were determined, i.e. information that, in combination or by adding external information, is suitable for indirectly identifying a person. To prevent unambiguous assignment of the data, these key characteristics are only available in an aggregated form or anonymized completely.

Finally, the data was checked for sensitive information, e.g. on health, sexual orientation and political attitudes, for which no additional consent for secondary use was obtained from the respondents. Although this is not necessarily suitable for the re-identification of individuals or institutions, the information can be useful in the event of de-anonymization (cf. Koberg, 2016, p. 694) and is therefore particularly worthy of protection (Art. 9 GDPR, Recital 51 GDPR). The sensitive information is anonymized completely.

The table in appendix 6.2 provides an overview of the variables from the data provided which are anonymized and which were newly generated as "substitute variables".

It should be noted that the variables for the advanced modules/focus topics are subject to an embargo period until the end of March 2025 and are therefore not included in the data provided. They will then (scheduled for the middle of 2025) be published in a new version of the scientific use file, provided there are no legal reasons not to do so. A corresponding review is currently still pending.

# 5 Literature

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# 6 Appendix

## 6.1 Documentation of the origin of secondarily used questions

Table 9: Core questionnaire: Documentation of the origin of secondarily used questions

| Question number | Original (O)/ Modified (M) | Citation |
|---|---|---|
| fb11 | M | Enders, J. &Teichler, U. (1995). Berufsbild der Lehrenden und Forschenden an Hochschulen. Ergebnisse einer Befragung des Wissenschaftlichen Personals an westdeutschen Hochschulen. BMBF 1995, p. 85ff. |
| ff7 | M | Maier-Leibnitz, Heinz (1985). Schlussbericht der Umfrage zur Lage der Forschung an den Universitäten 1976/77-1984. Arbeitsbericht. Table A69.[14] |
| pv1 | M | German Centre for Higher Education Research and Science Studies (2024). National Academics Panel Study (Nacaps) 2018 – Survey 1. Data collection: 2019. Hanover: FDZ-DZHW. https://doi.org/10.21249/DZHW:nac2018:2.0.0. Questionnaire „Nacaps 2018. Variablenfragebogen zur National Academics Panel Study 2018 (1. Befragungswelle - Promovierende) (Deutsch)". Question B19, page 60. |
| pv2 | M | German Centre for Higher Education Research and Science Studies (2024). National Academics Panel Study (Nacaps) 2018 – Survey 1. Data collection: 2019. Hanover: FDZ-DZHW. https://doi.org/10.21249/DZHW:nac2018:2.0.0. Questionnaire „Nacaps 2018. Variablenfragebogen zur National Academics Panel Study 2018 (1. Befragungswelle - Promovierende) (Deutsch)". Question B20, page 61. |
| cov1 | M | FDZ-LIfBi (2020). Startkohorten 2-6. NEPS Corona und Bildung. Zusatzerhebung Mai 2020. Programmiervorlage CAWI, p. 15. https://www.neps-data.de/Portals/0/NEPS/Datenzentrum/Forschungsdaten/NEPS-C/NEPS-C_Q.zip (accessed on 03/11/2024).<br><br>German Centre for Higher Education Research and Science Studies (2024). National Academics Panel Study (Nacaps) 2018 – Survey 4. Data collection: 2022. Hanover: FDZ-DZHW. https://doi.org/10.21249/DZHW:nac2018:2.0.0. Questionnaire „Nacaps 2018. Variablenfragebogen zur National Academics Panel Study 2018 (4. Befragungswelle - Promovierende) (Deutsch)". Question D02, page 160. |
| cov2 | M | Delgado-Osorio, X., Gierke, M., Jaen, J., Kansiime, J., Lonken, D., Pérez-Bosch Quesada, E., Ramachandran, K., Rizzi, T. & Saxena, P. (2023). Being a Doctoral Researcher in the Leibniz Association: 2021 Leibniz PhD Network Survey Report, Question K2, p. 208. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-89848-5 (accessed on 08/21/2024).<br><br>German Centre for Higher Education Research and Science Studies (2024). National Academics Panel Study (Nacaps) 2018 – Survey 4. Data collection: 2022. Hanover: FDZ-DZHW. https://doi.org/10.21249/DZHW:nac2018:2.0.0. Questionnaire „Nacaps 2018. Variablenfragebogen zur National Academics Panel Study 2018 (4. Befragungswelle - Promovierende) (Deutsch)". Question D03, page 161. |
| cov3 | M | Rusconi, A., Netz, N. & Solga, H. (2020). Publizieren im Lockdown. Erfahrungen von Professorinnen und Professoren. WZB Mitteilungen, Issue 170, p. 25. https://bibliothek.wzb.eu/artikel/2020/f-23507.pdf (accessed on 08/21/2024). |
| de3 | M | Beigang, S., Fetz, K., Kalkum, D., & Otto, M. (2017). Diskriminierungserfahrungen in Deutschland. Ergebnisse einer Repräsentativ- und einer Betroffenenbefragung. Ed. by Antidiskriminierungsstelle des Bundes. Baden-Baden: Nomos. p. 96, Figure 11. https://www.antidiskriminierungsstelle.de/SharedDocs/downloads/DE/publikationen/Expertisen/expertise_diskriminierungserfahrungen_in_deutschland.pdf (accessed on 08/22/2024). |
| de13 | O | Beierlein, C., Kovaleva, A., Kemper, C. J., & Rammstedt, B. (2015). Kurzskala zur Erfassung der Risikobereitschaft (R-1). Zusammenstellung sozialwissenschaftlicher Items und Skalen (ZIS). https://doi.org/10.6102/zis236. |

[14] The instrument was used in consultation with the *Institut für Demoskopie Allensbach*. Further information and the original questionnaire are available on request from the archive of the *Institut für Demoskopie Allensbach*.

## 6.2 Overview: anonymized and generated variables

The overview only lists the variables which are anonymized (i.e. they only contain the missing "anonymized") or which may have been newly generated as "substitute variables" for anonymized variables. All other variables contained in the data but not listed here can be used without restriction.

In some cases, reference is made to specific lists/additional information, which can be found here:

- Destatis classification of states and territories (as at 01/01/2023): https://www.destatis.de/DE/Methoden/Klassifikationen/Staat-Gebietsystematik/Staatsangehoerigkeitsgebietsschluessel_xls.xlsx (accessed on 07/03/2024)
- List of EU member states of the Federal Foreign Office: https://www.auswaertiges-amt.de/de/aussenpolitik/europa/eu-mitgliedstaaten-node (accessed on 07/03/2024)
- Destatis overview of the countries' accession years to the European Community (EC) and the European Union (EU) over time: https://www.destatis.de/Europa/DE/Staat/EU-Staaten/_EU_EZ_Zeitverlauf.html (as at 09/26/2024)
- DFG classification of scientific disciplines, research areas, review boards and subject areas (2020-2024): https://www.dfg.de/resource/blob/175334/89ba4a3464c99aaea40fdef47367e7b2/fachsystematik-2020-2024-de-grafik-data.pdf (accessed on 10/25/2024)

Table 10: Core questionnaire: anonymized and generated variables

| Variable name | Variable label | Anonymized vs. available in Remote-Desktop-SUF | Generation procedure |
|---|---|---|---|
| pid | Identification number (randomized) | available | randomized numbering of cases |
| wb2_r | Position, incl. recodings based on open responses | **anonymized** | Source variable:<br>wb2 (variable not included in the published data)<br><br>Coding of texts from open responses:<br>to existing categories of the source variable<br>(The category "other academic position" is therefore no longer applicable.) |
| wb3 | Type of professorship | **anonymized** | - |
| wb5 | Doctorate | **anonymized** | - |
| posi | Status group (3 categories) | available | Source variables:<br>wb2_r; wb5<br><br>Aggregation of information from several numeric variables:<br>to the categories<br>- "Prof", if "professor" / "junior professor"<br>- "Postdoc", if "assistant professor" / "research associate" and doctorate<br>- "Predoc", if "assistant professor" / "research associate" and no doctorate (yet) |
| wb6y | Habilitation (year) | **anonymized** | - |
| wb6y_r | Habilitation (year), aggregated | available | Source variable:<br>wb6y<br><br>Recoding:<br>to the categories<br>- "2010 and earlier"<br>- "2011-2015"<br>- "2016-2020"<br>- "2021 and later" |
| wb7a | Current junior research group leadership | **anonymized** | - |
| wb7b | Former junior research group leadership | **anonymized** | - |

| | | | |
|---|---|---|---|
| wb7c | No junior research group leadership | **anonymized** | - |
| wb7_r | Junior research group leadership, aggregated | available | Source variables:<br>wb7a; wb7b; wb7c<br><br>Aggregation of information from several numeric variables:<br>to the categories<br>- "No", if no current and no former junior research group leadership mentioned<br>- "Yes", if current or former junior research group leadership mentioned |
| wb8a1 | Academic CV: university degree: year | **anonymized** | - |
| aage_hsa | Academic age based on university degree, only predocs | available | Source variables:<br>wb8a1; posi<br><br>Recoding:<br>to the categories<br>- "anonymized", if prof or postdoc<br>- "Up to 1 year", if predoc and date of university degree up to 1 year before survey year<br>- "2 to 3 years", if predoc and date of university degree 2-3 years before survey year<br>- "4 to 5 years", if predoc and date of university degree 4-5 years before survey year<br>- "6 to 7 years", if predoc and date of university degree 6-7 years before survey year<br>- "8 to 9 years", if predoc and date of university degree 8-9 years before survey year<br>- "10 years and more", if predoc and date of university degree at least 10 years before survey year<br>(calculation based on the years: 2023 minus year of university degree, therefore not accurate to the month/day) |
| wb8a2 | Academic CV: university degree: country | **anonymized** | - |
| wb8a2_r | Academic CV: university degree: country, aggregated | available | Source variables:<br>wb8a2; wb8a1<br><br>Recoding:<br>to the categories<br>- "Germany"<br>- "EC/EU"<br>- "Europe without EC/EU"<br>- "Other"<br>according to Destatis classification of states and territories (as at 01/01/2023) and the list of EU member states on the website of the Federal Foreign Office (as at 07/03/2024) in combination with the Destatis overview of the countries' accession years to the European Community (EC) and the European Union (EU) over time (as at 09/26/2024)<br>(If the year was not specified, the assignment was based on the status at the time of the survey.) |
| wb8b1 | Academic CV: doctorate: year | **anonymized** | - |
| aage_prom | Academic age based on doctorate | available | Source variable:<br>wb8b1<br><br>Recoding:<br>to the categories<br>- "Up to 2 years", if date of doctorate up to 2 years before survey year |

| | | | |
|---|---|---|---|
| | | | - "3 to 5 years", if date of doctorate 3-5 years before survey year<br>- "6 to 10 years", if date of doctorate 6-10 years before survey year<br>- "11 to 15 years", if date of doctorate 11-15 years before survey year<br>- "16 to 20 years", if date of doctorate 16-20 years before survey year<br>- "21 to 30 years", if date of doctorate 21-30 years before survey year<br>- "31 years and more", if date of doctorate at least 31 years before survey year<br>(calculation based on the years: 2023 minus year of doctorate, therefore not accurate to the month/day) |
| wb8b2 | Academic CV: doctorate: country | **anonymized** | - |
| wb8b2_r | Academic CV: doctorate: country, aggregated | available | Source variables:<br>wb8b2; wb8b1<br><br>Recoding:<br>to the categories<br>- "Germany"<br>- "EC/EU"<br>- "Europe without EC/EU"<br>- "Other"<br>according to Destatis classification of states and territories (as at 01/01/2023) and the list of EU member states on the website of the Federal Foreign Office (as at 07/03/2024) in combination with the Destatis overview of the countries' accession years to the European Community (EC) and the European Union (EU) over time (as at 09/26/2024)<br>(If the year was not specified, the assignment was based on the status at the time of the survey.) |
| wb8c1 | Academic CV: first appointment: year | **anonymized** | - |
| wb8c1_r | Academic CV: first appointment: year, aggregated | available | Source variable:<br>wb8c1<br><br>Recoding:<br>to the categories<br>- "1991 and earlier"<br>- "2022/2023"<br>(1992-2021 still shown separately) |
| wb8c2 | Academic CV: first appointment: country | **anonymized** | - |
| wb8c2_r | Academic CV: first appointment: country, aggregated | available | Source variables:<br>wb8c2; wb8c1<br><br>Recoding:<br>to the categories<br>- "Germany"<br>- "EC/EU"<br>- "Europe without EC/EU"<br>- "Other"<br>according to Destatis classification of states and territories (as at 01/01/2023) and the list of EU member states on the website of the Federal Foreign Office (as at 07/03/2024) in combination with the Destatis overview of the countries' accession years to the European Community (EC) and the European Union (EU) over time (as at 09/26/2024) |

| | | | |
|---|---|---|---|
| | | | (If the year was not specified, the assignment was based on the status at the time of the survey.) |
| wb9_r | DFG Review Board | **anonymized** | Source variable:<br>wb9 (variable not included in the published data)<br><br>Coding of texts from open responses:<br>to existing categories of the source variable (categories correspond to the review boards according to the DFG classification of scientific disciplines, research areas, review boards and subject areas for the 2020-2024 term of office) |
| dfg10 | DFG10 subject classification: research area, engineering sciences aggregated | available | Source variable:<br>wb9_r<br><br>Recoding:<br>to DFG research areas according to the DFG classification of scientific disciplines, research areas, review boards and subject areas for the 2020-2024 term of office, but with aggregated category "Engineering Sciences" (if "Production Technology", "Mechanics and Constructive Mechanical Engineering", "Process Engineering, Technical Chemistry", "Fluid Mechanics, Technical Thermodynamics and Thermal Energy Engineering", "Materials Engineering", "Materials Science", "Systems Engineering", "Electrical Engineering and Information Technology", "Computer Science" or "Construction Engineering and Architecture"; this corresponds to the scientific discipline "Engineering Sciences") (10 categories) |
| dfg5 | DFG5 subject classification: scientific disciplines, humanities separately | available | Source variable:<br>wb9_r<br><br>Recoding:<br>to DFG scientific disciplines according to the DFG classification of scientific disciplines, research areas, review boards and subject areas for the 2020-2024 term of office, but with more detailed categories within the DFG scientific discipline “Humanities and Social Sciences” ("Humanities" and "Social and Behavioural Sciences" listed separately; this corresponds to the research areas) (5 categories) |
| dfg4 | DFG4 subject classification: scientific disciplines | available | Source variable:<br>wb9_r<br><br>Recoding:<br>to DFG scientific disciplines (4 categories) according to the DFG classification of scientific disciplines, research areas, review boards and subject areas for the 2020-2024 term of office |
| wb11c | Functional role: organs of the DFG | **anonymized** | - |
| fb2y | Year of first permanent contract research associates | **anonymized** | - |
| fb2y_r | Year of first permanent contract research associates, aggregated | available | Source variable:<br>fb2y<br><br>Recoding:<br>to the categories<br>- "2000 and earlier"<br>- "2001-2007" |

| | | | |
|---|---|---|---|
| | | | - "2022 and later"<br>(2008-2021 still shown separately) |
| fb3y | Year of first tenured professorship | **anonymized** | - |
| fb3y_r | Year of first tenured professorship, aggregated | available | Source variable:<br>fb3y<br><br>Recoding:<br>to the categories<br>- "1999 and earlier"<br>- "2022 and later"<br>(2000-2021 still shown separately) |
| fb4 | Duration of contract | **anonymized** | - |
| fb4_r | Duration of contract, aggregated | available | Source variable:<br>fb4<br><br>Recoding:<br>to the categories<br>- "More than 4 to under 5 years"<br>- "5 to under 6 years"<br>- "6 and more years"<br>(0-48 still shown separately) |
| fb6 | Number of fixed-term contracts | **anonymized** | - |
| fb6_r | Number of fixed-term contracts, top-coded | available | Source variable:<br>fb6<br><br>Recoding:<br>to the category "More than 20 contracts"<br>(0-20 still shown separately) |
| fb7 | Weekly working hours: contractual | **anonymized** | - |
| fb7_r | Weekly working hours: contractual, rounded | available | Source variable:<br>fb7<br><br>Recoding:<br>rounding of decimal places |
| fb8 | Weekly working hours: actual | **anonymized** | - |
| fb8_r | Weekly working hours: actual, rounded | available | Source variable:<br>fb8<br><br>Recoding:<br>rounding of decimal places |
| wn1 | Supervision of PhD students total: number | **anonymized** | - |
| wn1_r | Supervision of PhD students total: number, top-coded | available | Source variable:<br>wn1<br><br>Recoding:<br>to the category "More than 10"<br>(0-10 still shown separately) |
| wn2 | First-time supervision of PhD students: number | **anonymized** | - |
| wn2_r | First-time supervision of PhD students: number, top-coded | available | Source variable:<br>wn2<br><br>Recoding:<br>to the category "More than 10"<br>(0-10 still shown separately) |
| ff1a | Number of applications submitted: DFG | **anonymized** | - |
| ff1a_r | Number of applications submitted: DFG, agg. | available | Source variable:<br>ff1a<br><br>Recoding:<br>to the categories |

| | | | |
|---|---|---|---|
| | | | - "4 to 10"<br>- "More than 10"<br>(0-3 still shown separately) |
| ff1b | Number of applications submitted: excellence strategy | **anonymized** | - |
| ff1b_r | Number of applications submitted: excellence strategy, agg. | available | Source variable:<br>ff1b<br><br>Recoding:<br>to the category "More than 2"<br>(0-2 still shown separately) |
| ff1c | Number of applications submitted: BMBF | **anonymized** | - |
| ff1c_r | Number of applications submitted: BMBF, agg. | available | Source variable:<br>ff1c<br><br>Recoding:<br>to the categories<br>- "4 to 10"<br>- "More than 10"<br>(0-3 still shown separately) |
| ff1d | Number of applications submitted: Europ. Union | **anonymized** | - |
| ff1d_r | Number of applications submitted: Europ. Union, agg. | available | Source variable:<br>ff1d<br><br>Recoding:<br>to the categories<br>- "2 to 10"<br>- "More than 10"<br>(0-1 still shown separately) |
| ff1e | Number of applications submitted: national non-profit foundations | **anonymized** | - |
| ff1e_r | Number of applications submitted: national non-profit foundations, agg. | available | Source variable:<br>ff1e<br><br>Recoding:<br>to the categories<br>- "2 to 10"<br>- "More than 10"<br>(0-1 still shown separately) |
| ff1f | Number of applications submitted: other sponsors from industry/business | **anonymized** | - |
| ff1f_r | Number of applications submitted: other sponsors from industry/business, agg. | available | Source variable:<br>ff1f<br><br>Recoding:<br>to the categories<br>- "2 to 10"<br>- "More than 10"<br>(0-1 still shown separately) |
| ff1g | Number of applications submitted: other | **anonymized** | - |
| ff1g_r | Number of applications submitted: other, agg. | available | Source variable:<br>ff1g<br><br>Recoding:<br>to the categories<br>- "2 to 10"<br>- "More than 10"<br>(0-1 still shown separately) |
| ff1h | Number of applications approved: DFG | **anonymized** | - |

| | | | |
|---|---|---|---|
| ff1h_r1 | Number of applications approved: DFG, agg. (prof) | available | Source variables:<br>ff1h; posi<br><br>Recoding:<br>If predoc or postdoc: to the category "does not apply"<br>If prof: to the categories<br>- "4 to 10"<br>- "More than 10"<br>(0-3 still shown separately) |
| ff1h_r2 | Number of applications approved: DFG, agg. (post-doc + predoc) | available | Source variables:<br>ff1h; posi<br><br>Recoding:<br>If prof: to the category "does not apply"<br>If predoc or postdoc: to the category "More than 2"<br>(0-2 still shown separately) |
| ff1i | Number of applications approved: excellence strat-egy | **anonymized** | - |
| ff1i_r1 | Number of applications approved: excellence strat-egy, agg. (prof + postdoc) | available | Source variables:<br>ff1i; posi<br><br>Recoding:<br>If predoc: to the category "does not apply"<br>If prof or postdoc: to the categories<br>- "2 to 10"<br>- "More than 10"<br>(0-1 still shown separately) |
| ff1i_r2 | Number of applications approved: excellence strat-egy, agg. (predoc) | available | Source variables:<br>ff1i; posi<br><br>Recoding:<br>If prof or postdoc: to the category "does not apply"<br>If predoc: to the category "1 and more"<br>(0 still shown separately) |
| ff1j | Number of applications approved: BMBF | **anonymized** | - |
| ff1j_r1 | Number of applications approved: BMBF, agg. (prof) | available | Source variables:<br>ff1j; posi<br><br>Recoding:<br>If predoc or postdoc: to the category "does not apply"<br>If prof: to the categories<br>- "4 to 10"<br>- "More than 10"<br>(0-3 still shown separately) |
| ff1j_r2 | Number of applications approved: BMBF, agg. (postdoc) | available | Source variables:<br>ff1j; posi<br><br>Recoding:<br>If prof or predoc: to the category "does not apply"<br>If postdoc: to the category "More than 3"<br>(0-3 still shown separately) |
| ff1j_r3 | Number of applications approved: BMBF, agg. (predoc) | available | Source variables:<br>ff1j; posi<br><br>Recoding:<br>If prof or postdoc: to the category "does not apply"<br>If predoc: to the category "More than 2"<br>(0-2 still shown separately) |

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| ff1k | Number of applications approved: Europ. Union | **anonymized** | - |
| ff1k_r | Number of applications approved: Europ. Union, agg. | available | Source variable:<br>ff1k<br><br>Recoding:<br>to the category "More than 2"<br>(0-2 still shown separately) |
| ff1l | Number of applications approved: national non-profit foundations | **anonymized** | - |
| ff1l_r | Number of applications approved: national non-profit foundations, agg. | available | Source variable:<br>ff1l<br><br>Recoding:<br>to the category "More than 2"<br>(0-2 still shown separately) |
| ff1m | Number of applications approved: other sponsors from industry/business | **anonymized** | - |
| ff1m_r1 | Number of applications approved: others industry/business, agg. (prof + postdoc) | available | Source variables:<br>ff1m; posi<br><br>Recoding:<br>If predoc: to the category "does not apply"<br>If prof or postdoc: to the categories<br>- "4 to 10"<br>- "More than 10"<br>(0-3 still shown separately) |
| ff1m_r2 | Number of applications approved: others industry/business, agg. (predoc) | available | Source variables:<br>ff1m; posi<br><br>Recoding:<br>If prof or postdoc: to the category "does not apply"<br>If predoc: to the category "More than 2"<br>(0-2 still shown separately) |
| ff1n | Number of applications approved: other | **anonymized** | - |
| ff1n_r | Number of applications approved: other, agg. | available | Source variable:<br>ff1n<br><br>Recoding:<br>to the category "More than 4"<br>(0-4 still shown separately) |
| ff1o | Number of applications rejected: DFG | **anonymized** | - |
| ff1o_r | Number of applications rejected: DFG, agg. | available | Source variable:<br>ff1o<br><br>Recoding:<br>to the categories<br>- "4 to 10"<br>- "More than 10"<br>(0-3 still shown separately) |
| ff1p | Number of applications rejected: excellence strategy | **anonymized** | - |
| ff1p_r | Number of applications rejected: excellence strategy, agg. | available | Source variable:<br>ff1p<br><br>Recoding:<br>to the categories<br>- "2 to 10"<br>- "More than 10"<br>(0-1 still shown separately) |
| ff1q | Number of applications rejected: BMBF | **anonymized** | - |

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| ff1q_r | Number of applications rejected: BMBF, agg. | available | Source variable:<br>ff1q<br><br>Recoding:<br>to the categories<br>- "4 to 10"<br>- "More than 10"<br>(0-3 still shown separately) |
| ff1r | Number of applications rejected: Europ. Union | **anonymized** | - |
| ff1r_r | Number of applications rejected: Europ. Union, agg. | available | Source variable:<br>ff1r<br><br>Recoding:<br>to the categories<br>- "4 to 10"<br>- "More than 10"<br>(0-3 still shown separately) |
| ff1s | Number of applications rejected: national non-profit foundations | **anonymized** | - |
| ff1s_r | Number of applications rejected: national non-profit foundations, agg. | available | Source variable:<br>ff1s<br><br>Recoding:<br>to the categories<br>- "2 to 10"<br>- "More than 10"<br>(0-1 still shown separately) |
| ff1t | Number of applications rejected: other sponsors from industry/business | **anonymized** | - |
| ff1t_r | Number of applications rejected: other sponsors from industry/business, agg. | available | Source variable:<br>ff1t<br><br>Recoding:<br>to the categories<br>- "2 to 10"<br>- "More than 10"<br>(0-1 still shown separately) |
| ff1u | Number of applications rejected: other | **anonymized** | - |
| ff1u_r | Number of applications rejected: other, agg. | available | Source variable:<br>ff1u<br><br>Recoding:<br>to the categories<br>- "4 to 10"<br>- "More than 10"<br>(0-3 still shown separately) |
| pu1a | Number of publications: original articles | **anonymized** | - |
| pu1a_r1 | Number of publications: original articles, agg. (prof + postdoc) | available | Source variables:<br>pu1a; posi<br><br>Recoding:<br>If predoc: to the category "does not apply"<br>If prof or postdoc: to the categories<br>- "5 to 19"<br>- "20 to 34"<br>- "35 to 49"<br>- "50 to 64"<br>- "65 to 79"<br>- "More than 79"<br>(0-4 still shown separately) |

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| pu1a_r2 | Number of publications: original articles, agg. (pre-doc) | available | Source variables:<br>pu1a; posi<br><br>Recoding:<br>If prof or postdoc: to the category "does not apply"<br>If predoc: to the categories<br>- "5 to 19"<br>- "20 to 34"<br>- "More than 34"<br>(0-4 still shown separately) |
| pu1b | Number of publications: review articles | **anonymized** | - |
| pu1b_r | Number of publications: review articles, agg. | available | Source variable:<br>pu1b<br><br>Recoding:<br>to the categories<br>- "4 to 10"<br>- "More than 10"<br>(0-3 still shown separately) |
| pu1c | Number of publications: monographs | **anonymized** | - |
| pu1c_r | Number of publications: monographs, agg. | available | Source variable:<br>pu1c<br><br>Recoding:<br>to the category "More than 1"<br>(0-1 still shown separately) |
| pu1d | Number of publications: book contributions | **anonymized** | - |
| pu1d_r1 | Number of publications: book contributions, agg. (prof + postdoc) | available | Source variables:<br>pu1d; posi<br><br>Recoding:<br>If predoc: to the category "does not apply"<br>If prof or postdoc: to the categories<br>- "3 to 5"<br>- "6 to 10"<br>- "More than 10"<br>(0-2 still shown separately) |
| pu1d_r2 | Number of publications: book contributions, agg. (predoc) | available | Source variables:<br>pu1d; posi<br><br>Recoding:<br>If prof or postdoc: to the category "does not apply"<br>If predoc: to the categories<br>- "3 to 5"<br>- "More than 5"<br>(0-2 still shown separately) |
| pu1e | Number of publications: special issues | **anonymized** | - |
| pu1e_r | Number of publications: special issues, agg. | available | Source variable:<br>pu1e<br><br>Recoding:<br>to the category "More than 2"<br>(0-2 still shown separately) |
| pu1f | Number of publications: commentaries | **anonymized** | - |
| pu1f_r | Number of publications: commentaries, agg. | available | Source variable:<br>pu1f<br><br>Recoding:<br>to the category "More than 2"<br>(0-2 still shown separately) |

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| pu1g | Number of publications: editorials | **anonymized** | - |
| pu1g_r | Number of publications: editorials, agg. | available | Source variable:<br>pu1g<br><br>Recoding:<br>to the category "More than 2"<br>(0-2 still shown separately) |
| pu1h | Number of publications: manuals | **anonymized** | - |
| pu1h_r | Number of publications: manuals, agg. | available | Source variable:<br>pu1h<br><br>Recoding:<br>to the category "More than 2"<br>(0-2 still shown separately) |
| pu8a | Assessor activity: journal articles | **anonymized** | - |
| pu8a_r | Assessor activity: journal articles, agg. | available | Source variable:<br>pu8a<br><br>Recoding:<br>to the categories<br>- "11 to 15"<br>- "16 to 20"<br>- "21 to 30"<br>- "More than 30"<br>(0-10 still shown separately) |
| pu8b | Assessor activity: grant applications | **anonymized** | - |
| pu8b_r | Assessor activity: grant applications, agg. | available | Source variable:<br>pu8b<br><br>Recoding:<br>to the categories<br>- "3 to 10"<br>- "11 to 19"<br>- "More than 19"<br>(0-2 still shown separately) |
| pu8c | Assessor activity: participation in evaluation procedures | **anonymized** | - |
| pu8c_r | Assessor activity: participation in evaluation procedures, agg. | available | Source variable:<br>pu8c<br><br>Recoding:<br>to the categories<br>- "2 to 4"<br>- "More than 4"<br>(0-1 still shown separately) |
| pu8d | Assessor activity: participation in accreditation procedures | **anonymized** | - |
| pu8d_r | Assessor activity: participation in accreditation procedures, agg. | available | Source variable:<br>pu8d<br><br>Recoding:<br>to the category "More than 2"<br>(0-2 still shown separately) |
| pu8e | Assessor activity: appeal procedures | **anonymized** | - |
| pu8e_r | Assessor activity: appeal procedures, agg. | available | Source variable:<br>pu8e<br><br>Recoding:<br>to the category "More than 3"<br>(0-3 still shown separately) |

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| pu8f | Assessor activity: doctoral theses | **anonymized** | - |
| pu8f_r | Assessor activity: doctoral theses, agg. | available | Source variable:<br>pu8f<br><br>Recoding:<br>to the categories<br>- "3 to 10"<br>- "More than 10"<br>(0-2 still shown separately) |
| pv2b | Leaving academia: health problems | **anonymized** | - |
| de1 | Gender | **anonymized** | - |
| de1_r | Gender, without diverse | available | Source variable:<br>de1<br><br>Recoding:<br>to the category "diverse or question not answered", if "diverse" or "question not answered"<br>("Male" and "Female" still shown separately) |
| de2 | Year of birth | **anonymized** | - |
| de3a | Experiences of discrimination: ethnic origin | **anonymized** | - |
| de3b | Experiences of discrimination: gender/gender identity | **anonymized** | - |
| de3c | Experiences of discrimination: religion or belief | **anonymized** | - |
| de3d | Experiences of discrimination: age | **anonymized** | - |
| de3e | Experiences of discrimination: sexual orientation | **anonymized** | - |
| de3f | Experiences of discrimination: disability or chronic illness | **anonymized** | - |
| de3g | Experiences of discrimination: social background | **anonymized** | - |
| de3h | Experiences of discrimination: none | **anonymized** | - |
| de5_r | Country of birth, recoded | **anonymized** | Source variables:<br>de5a; de5o (variable not included in the published data)<br><br>Step 1: Coding of texts from open responses: to countries<br><br>Step 2: Aggregation of information from several numeric variables:<br>- if born “In Germany” or if born “In another country” and open response coded to category “Germany (incl. FRG & GDR before 1990)”, the category “Germany (incl. FRG & GDR before 1990)” was assigned<br>- if born “In another country” and open response coded to another category than “Germany (incl. FRG & GDR before 1990)”, this country category was adopted |
| de5b_r | Country of birth recoded, aggregated | available | Source variables:<br>de5_r; de2<br><br>Recoding:<br>to the categories<br>- "Germany"<br>- "EC/EU"<br>- "Europe without EC/EU"<br>- "Other" |

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| | | | according to Destatis classification of states and territories (as at 01/01/2023) and the list of EU member states on the website of the Federal Foreign Office (as at 07/03/2024) in combination with the Destatis overview of the countries' accession years to the European Community (EC) and the European Union (EU) over time (as at 09/26/2024)<br>(If the year was not specified, the assignment was based on the status at the time of the survey.) |
| de4 | Migration: year of arrival in Germany | **anonymized** | - |
| de10 | Children: number | **anonymized** | - |
| de10_r | Children: number, aggregated | available | Source variable:<br>de10<br><br>Recoding:<br>to the category "3 and more children"<br>(0-2 still shown separately) |
| de11a | Children: age 1st child, categorized | **anonymized** | - |
| de11b | Children: age 2nd child, categorized | **anonymized** | - |
| de11c | Children: age 3rd child, categorized | **anonymized** | - |
| de11d | Children: age 4th child, categorized | **anonymized** | - |
| de11e | Children: age 5th child, categorized | **anonymized** | - |
| de11f | Children: age 6th child, categorized | **anonymized** | - |
| de11_r | Children: age, aggregated | available | Source variables:<br>de10_r; de11a; de11b; de11c; de11d; de11e; de11f<br><br>Aggregation of information from several numeric variables:<br>to the categories<br>- "No children or no age specified", if no children or no age specified for child/children<br>- "At least one child 12 or younger", if at least one child <= 12 years old<br>- "No child 12 or younger", if no child <= 12 years old |