

SCIENCE+
BAROMETER

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Dear Sir or Madam,

How important is science for people in Germany? How do they get information about it? And what makes a good scientist in the eyes of the public?

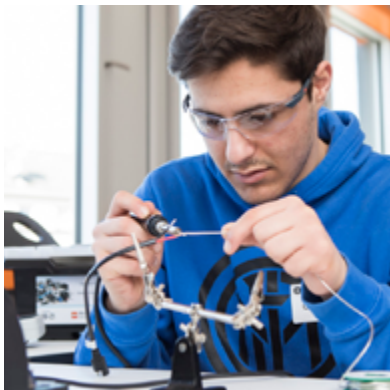
The current edition of the science barometer provides answers to these and many more questions. Thank you to the Robert Bosch Stiftung for making it possible and to our international advisory board for supporting the project.

The results of some new questions show that citizens have a nuanced view of science: Many respondents think it makes it difficult to judge which information is correct when scientists disagree. However, 64 per cent consider controversies between scientists as helping to ensure the right results prevail.

A clear picture can be drawn from the results regarding the orientation of research towards the public interest: Three quarters of respondents think that keeping public interest in mind is a characteristic a good scientist should possess. However, only 40 per cent believe that scientists work for the benefit of society, while 46 per cent are undecided in this regard. I consider this an encouragement as well as an obligation for the scientific community and wish you an informative read.



Markus Weißkopf
Managing Director *Wissenschaft im Dialog*



What is the science barometer?

Through the science barometer, *Wissenschaft im Dialog* annually surveys public attitudes towards science and research in Germany. Together with an international advisory board a questionnaire is designed annually which includes questions from previous survey waves but also new ones. For all results of the 2018 survey and all previous survey waves as well as further information, please visit www.sciencebarometer.com.

Who is responsible for the science barometer?

Wissenschaft im Dialog (WiD) is a non-profit organisation founded by the German science organisations. Our work focuses on the public discussion of science and research in Germany. *WiD* aims to arouse and strengthen interest in science among people of every age and background. We aim to achieve this by organising discussions, education projects for schools, exhibitions and competitions – all focused on science and research. We develop new formats for science communication and run events across Germany to reach diverse target groups. Our goal is for as many people as possible to be involved in discussions about research, including its controversial aspects. The results of the science barometer help us in doing so. www.wissenschaft-im-dialog.de

How strong is your interest in ...?

52 per cent of respondents state that their interest in science and research is somewhat strong or very strong. In the previous year, when asked this question, 58 per cent stated that they were interested in science and research. Especially respondents with a high level of education show an interest in science and research with 72 per cent answering that their interest is somewhat strong or very strong.

science and research



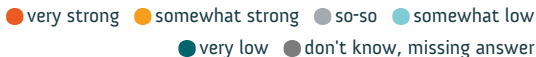
politics



sports



miscellaneous news such as on celebrities or human interest



Number of respondents: 1.008; Figures are in per cent. Numbers may not add up to 100 per cent due to rounding.

I occupy myself with science and research ...

More than half of respondents say that they occupy themselves with science and research to look for answers to specific questions or because they find science and research fascinating. 50 per cent do so to acquire useful knowledge for school or work and 41 per cent to have a say in conversations about science and research.

... because I look for answers to specific questions that concern me.



... because I find science and research fascinating.



... to acquire knowledge which is useful for school or work.



... to have a say in conversations about science and research.



- completely agree
- somewhat agree
- undecided
- somewhat disagree
- completely disagree
- don't know, missing answer

How often ...?

In 2018 TV continues to be the most important source of information regarding science and research which is used often or very often by most respondents compared to the other sources. The second most important source is the internet which has overtaken articles in newspapers and magazines compared to 2016 – although at that time a four-level response scale was used.

... do you watch TV programmes about science and research?
(regular programme, no streaming)



... do you get information about science and research
on the internet?



... do you talk about science and research
with friends or family?



... do you read articles on scientific topics
in newspapers or magazines? (print)



... does it happen that you listen to news or reports
about science and research on the radio?



... do you attend events like lectures or discussions
on science and research?



● very often ● often ● sometimes ● rarely ● never

Number of respondents: 1.008; Figures are in per cent. Numbers may not add up to 100 per cent due to rounding.

How often do you use the following sources to get information about science and research on the internet?

As in 2016, websites of news media are the source used most often to get information about science and research on the internet. Wikipedia, for which data was gathered for the first time this year, is used by 35 per cent of respondents often or very often to inform themselves about science and research. Both sources are used in particular by people with higher levels of education. Video platforms and social networks are especially important among students and 14- to 29-year-olds to get information about science and research on the internet.

Note: These results are based on responses from 748 respondents who previously stated that they use the internet to get information about science and research.

websites of news media such as newspapers, magazines or TV channels



Wikipedia



Youtube or other video platforms



websites of scientific institutions or organisations



Facebook, Twitter or other social networks



blogs or online forums



podcasts



● very often ● often ● sometimes ● rarely ● never ● don't know, missing answer

Number of respondents: 748; Figures are in per cent. Numbers may not add up to 100 per cent due to rounding.

On social networks, how often do you ...?

19 per cent of respondents who use social networks to get information about science and research state that they like or favourite opinions about science and research often or very often. While 7 per cent indicate that they often comment on opinions about science and research, 47 per cent never do so.

Note: These results are based on responses from 333 respondents who previously stated that they use social media to get information about science and research on the internet.

like or favourite information or opinions about science and research



post or share information or opinions about science and research



comment on information or opinions about science and research



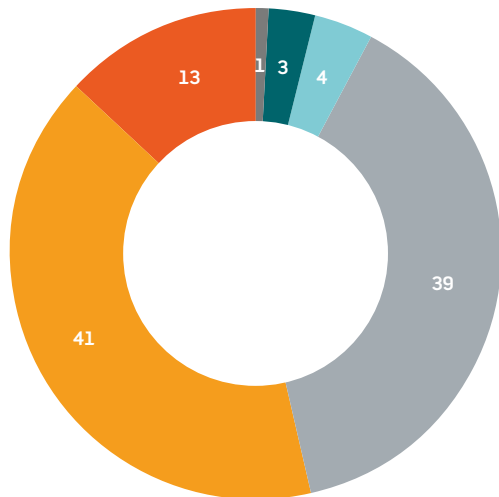
● very often ● often ● sometimes ● rarely ● never

How much do you trust science and research?

More than half of respondents indicate that they trust science and research somewhat or completely.

39 per cent are undecided, while 7 per cent of respondents state that they distrust science and research somewhat or completely. These results are comparable to 2017. At that time, half of respondents stated that they trusted science and research.

37 per cent were undecided and 12 per cent indicated that they distrust somewhat or completely.



- trust completely
- trust somewhat
- undecided
- distrust somewhat
- distrust completely
- don't know, missing answer

Number of respondents: 1.008; Figures are in per cent. Numbers may not add up to 100 per cent due to rounding.

Here are some reasons why you might trust scientists. To what extent do you personally agree with them?

As in the previous year, expertise is the most important reason to trust scientists according to respondents – followed by their integrity and their orientation towards the public interest.

Because scientists are experts in their field.



Because scientists work according to rules and standard procedures.



Because scientists do research in the public interest.



- completely agree
- somewhat agree
- undecided
- somewhat disagree
- completely disagree
- don't know, missing answer

Here are some reasons why you might distrust scientists. To what extent do you personally agree with them?

The proportions of respondents who consider mistakes or the adjustment of results to the scientists' expectations as reasons to distrust scientists are similar to the results of the science barometer 2017. With 67 per cent of respondents agreeing, dependence on funders is again the most significant reason for distrust in scientists. In 2017, 76 per cent agreed with the corresponding statement.

Because scientists are strongly dependent on the funders of their research.



Because scientists often adjust results to their own expectations.



Because scientists often make mistakes.



- completely agree
- somewhat agree
- undecided
- somewhat disagree
- completely disagree
- don't know, missing answer

To what extent do you agree with the following statements?

Newly added to the science barometer in 2018 is the statement that it is important to know about science and research in everyday life – 64 per cent of respondents agree with this. 40 per cent agree that scientists work for the benefit of society – in the previous year 48 per cent agreed with this.

It is important for me to know about science and research in my everyday life.



All in all, science and research will lead to a better life in the future.



Scientists work for the benefit of society.



Science and research change our living conditions too fast.



It should be allowed to conduct science and research into any area without restrictions.

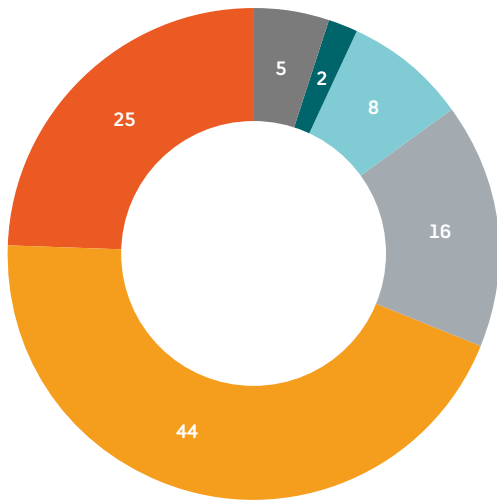


- completely agree
- somewhat agree
- undecided
- somewhat disagree
- completely disagree
- don't know, missing answer

Number of respondents: 1.008; Figures are in per cent. Numbers may not add up to 100 per cent due to rounding.

In your opinion, how strong is the influence of business on science?

69 per cent of respondents consider the influence of business on science to be somewhat or much too strong. In the science barometer 2017, 61 per cent gave comparable responses.



● much too strong ● somewhat too strong ● just right ● somewhat too low
● much too low ● don't know, missing answer

Number of respondents: 1.008; Figures are in per cent. Numbers may not add up to 100 per cent due to rounding.

In your opinion, which skills does someone have to possess to be a good scientist?

Thinking about the common good as well as communication skills and the ability to work in a team are important characteristics of a good scientist according to about three quarters of respondents. Differences can be identified in relation to different levels of education: respondents with a high level of education agree to a lesser extent. Especially in the group of students, a scientist's knowledge and the ability to work in a team are considered important.

... know a lot.



... must not be guided by the interests of third parties.



... think about the common good.



... be communicative.



... be a team player.



- completely agree
 somewhat agree
 undecided
 somewhat disagree
 completely disagree
 don't know, missing answer

Number of respondents: 1.008; Figures are in per cent. Numbers may not add up to 100 per cent due to rounding.

To what extent do you agree with the following statements?

39 per cent of respondents agree that science and research are so complicated that they do not understand much of it. 40 per cent state that they are or were not taught how science and research work at school. In the case of scientists giving conflicting statements, 56 per cent find it difficult to judge which information is correct. 64 per cent consider controversies between scientists as helping to ensure the right results prevail.

Controversies between scientists are helpful because they help ensure that the right research results prevail.



When scientists disagree, it is difficult for me to judge which information is correct.



Science and research are so complicated that I do not understand much of it.



At school I am or was taught how science and research work.



Science and research relate so little to everyday life that they are not relevant to me.



- completely agree
- somewhat agree
- undecided
- somewhat disagree
- completely disagree
- don't know, missing answer

Considering that scientific results could not be confirmed in replication studies, to what extent do you agree with the following statements?

Considering that scientific results could not be confirmed in replication studies, 78 per cent of respondents agree that errors and their corrections are part of science and research. 62 per cent regard this as quality control. 17 per cent state that one can not trust science and research in this field for this reason.

Note: This question was asked at the end of the interviews for science barometer 2018. Respondents were told that it is also part of the scientific research process to replicate the work of other scientists and to undertake studies in the same way again to see if they deliver equivalent results. In addition, it was explained that there had been recent reports about the fact that in various disciplines (split ballot between medicine, psychology, biology, economics) a certain number of such replication studies had not delivered the same results. Detailed results on the split ballot groups are available at www.sciencebarometer.com.

Errors and their corrections are part of science and research.



The replication shows that quality control takes place in science and research.



It shows that you can not trust science and research in this field.



- completely agree
- somewhat agree
- undecided
- somewhat disagree
- completely disagree
- don't know, missing answer

Data on the survey design of the science barometer 2018

Representative population survey

Population German-speaking residential population of the Federal Republic of Germany in private households from the age of 14 years and over

Number of respondents 1.008 respondents

Type and period of the survey The interviews were conducted as telephone interviews (dual frame of landlines/mobile phones, 80:20) from 6 to 13 August 2018. The interviews were part of an omnibus survey carried out centrally by Kantar Emnid.

Sampling The sampling was carried out according to ADM – i.e. using a telephone sample which was created by an initiative of the *Arbeitskreis Deutscher Marktforschungsinstitute (ADM)* using the *Gabler-Häder-Verfahren* and which also contains unlisted telephone numbers. Within the selected households from the landline sample, the target person was selected randomly. For the sample of mobile phones, no systematic selection of the target person took place since mobile phones are almost exclusively used by only one person.

Implementation The interviews were computer-assisted telephone interviews (CATI). The general working instructions, used by all interviewers at Kantar Emnid, were applied in order to conduct all the interviews consistently.

Weighting and representativeness The weighting took place in several steps: Firstly, a design weighting compensated for the different selection probabilities of the target persons caused by the numbers of landlines and mobile phone numbers as well as household sizes. Subsequently, the two samples of landlines and mobile phones were merged and weighted based on the characteristics of federal state, size of location, gender, age, occupation, formal education and household size. The weighting ensures that the structure of the sample on which the results are based matches the structure of the population. Therefore, the results of the survey are representative and can be generalised for the population within statistical margins of error. For this survey, the margin of error ranges from ± 1.4 (for a share of five per cent) to ± 3.1 (for a share of 50 per cent).

Documentation The original text of the questionnaire as well as results tables are available online via the following link:
www.sciencebarometer.com

Imprint

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