

**Appendix:**  
**Study on scientific culture**

March 2024

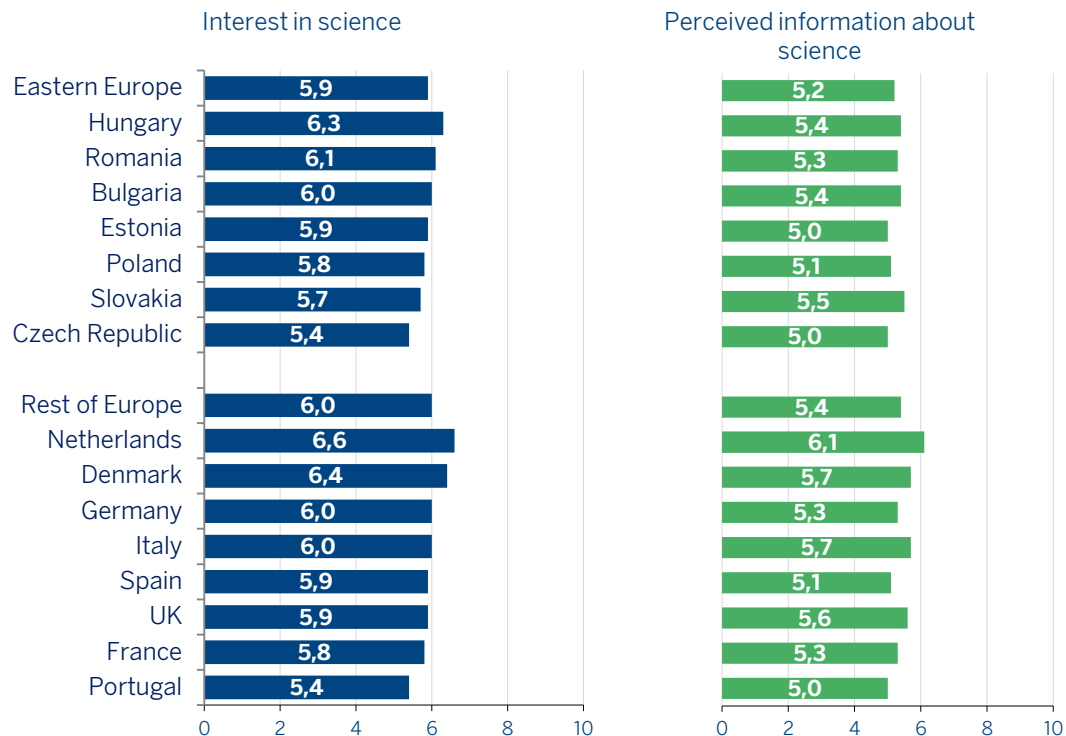
# Interest and information about science

Could you please tell me how **INTERESTED** you are in each of the issues I am going to read out? (Science)

Now I would like you to tell me how **INFORMED** you feel you are about these issues (science).

Average on a scale from 0 to 10, where 0 means that you have “no interest at all” and 10 that you have “a great deal of interest”.

Sample: total cases (27 068)

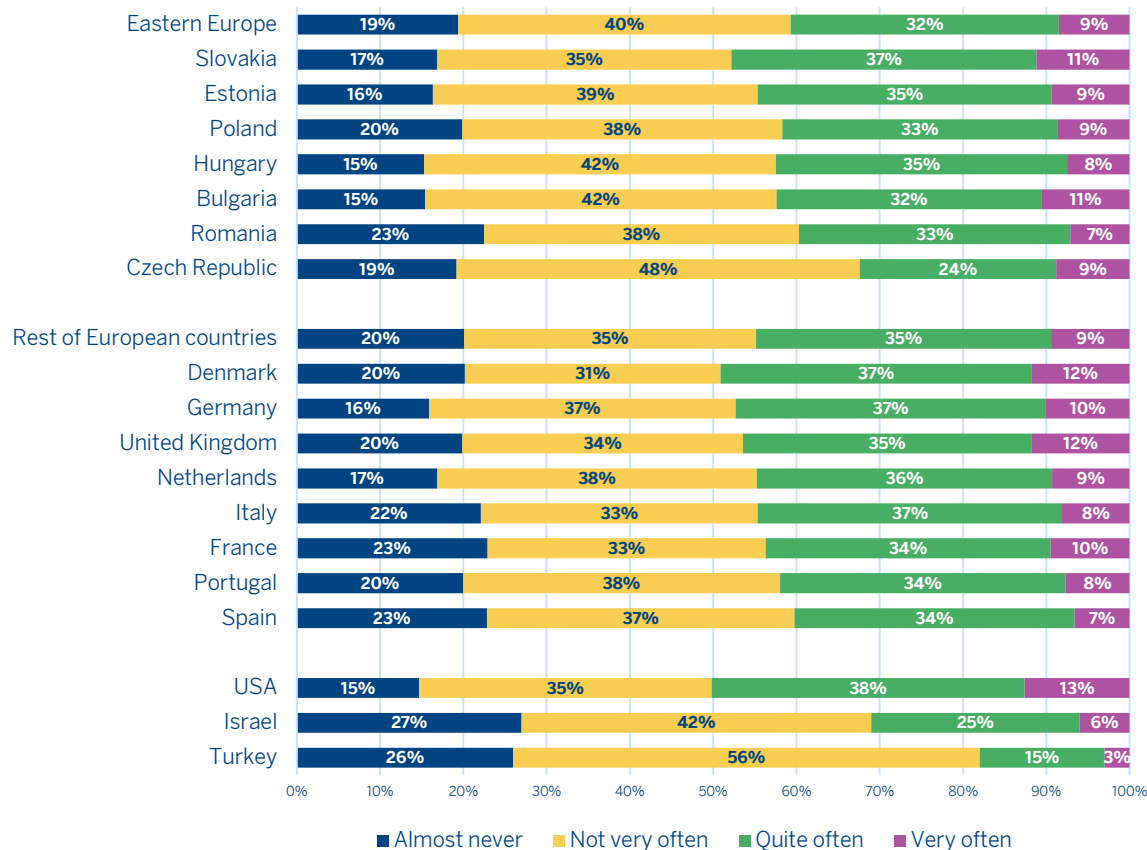


# Frequency with which science appears in conversations

In European countries as a whole, science and technology issues appear in conversations to a larger extent in Denmark, Germany and the United Kingdom and also in Slovakia, while they are less prominent in the Czech Republic, Portugal and Spain.

**Could you tell me how often science and technology issues form part of your conversations with family, friends or work colleagues?**

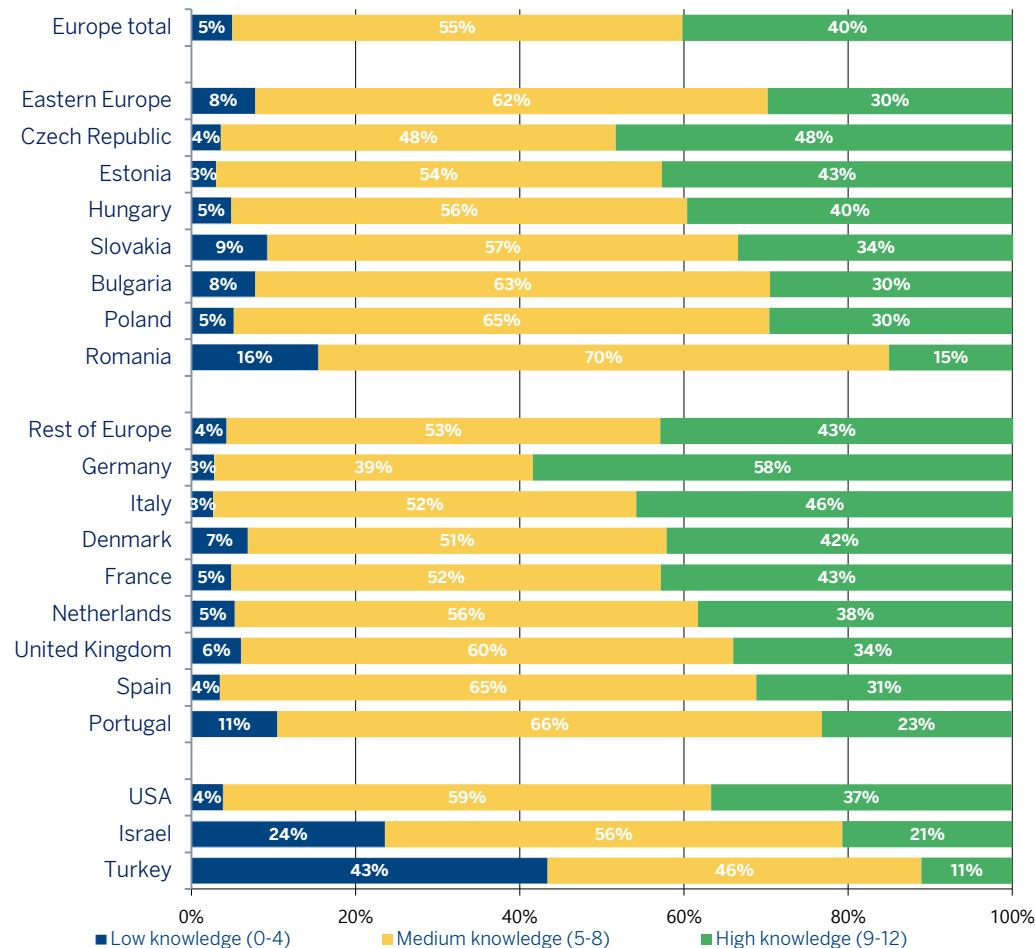
Sample: total of European cases (22 500)



## Level of knowledge by country

To get an informal measure of knowledge of science, respondents were asked to complete a “test” comprising a list of concepts (12), which they had to say were either true or false. The grouping of test responses into the three segments labeled “high knowledge” (9 to 12 correct answers), “medium knowledge” (5 to 8 correct answers) and “low knowledge” (0 to 4) reflects large differences between countries.

The highest level of knowledge is recorded among the population of the Western European countries and the United States, followed by the countries of Eastern Europe, Israel and, at a distance, Turkey.

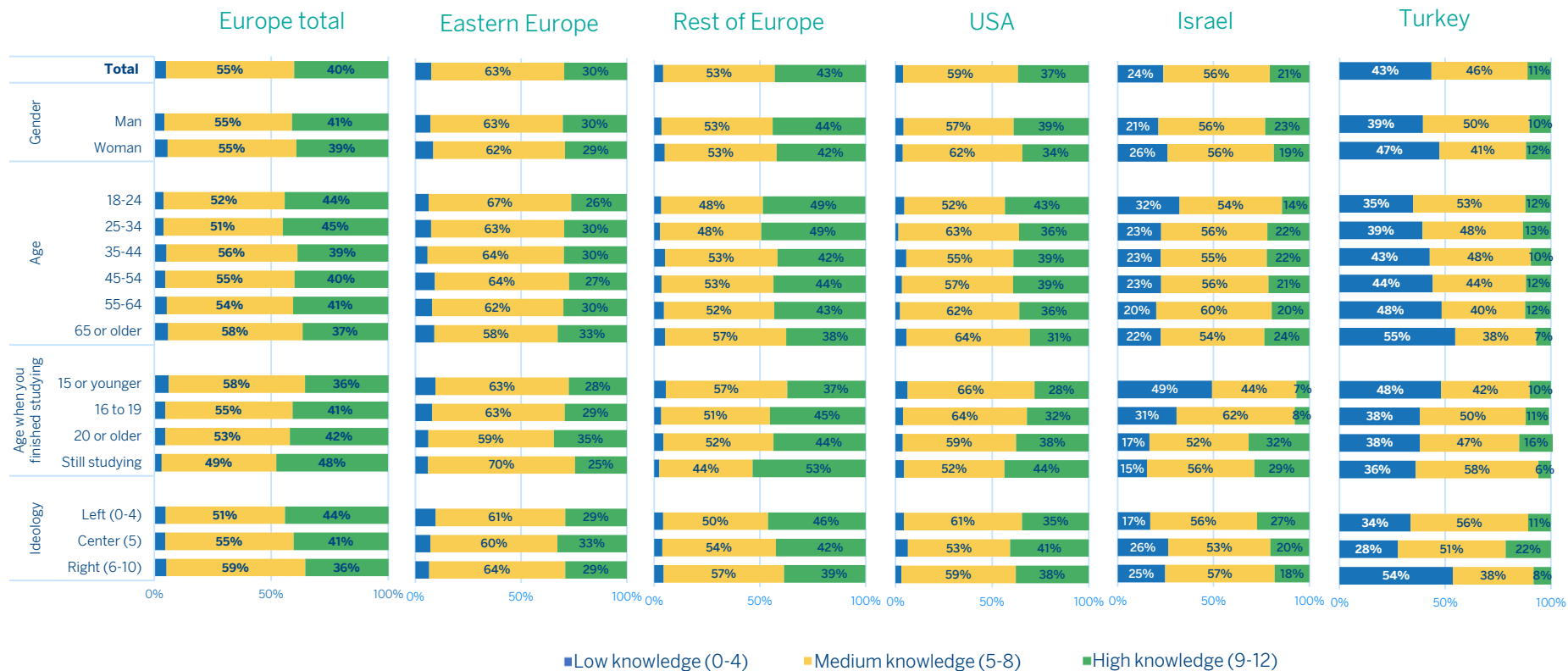


Distribution according to knowledge test. Scale: 0 to 12

Sample: total cases (27 068)

# Level of knowledge: aggregate measure by sociodemographic segments

Distribution according to a knowledge test.  
Scale: 0 to 12.  
Sample: total cases (27 068)



## Validation of scientific knowledge

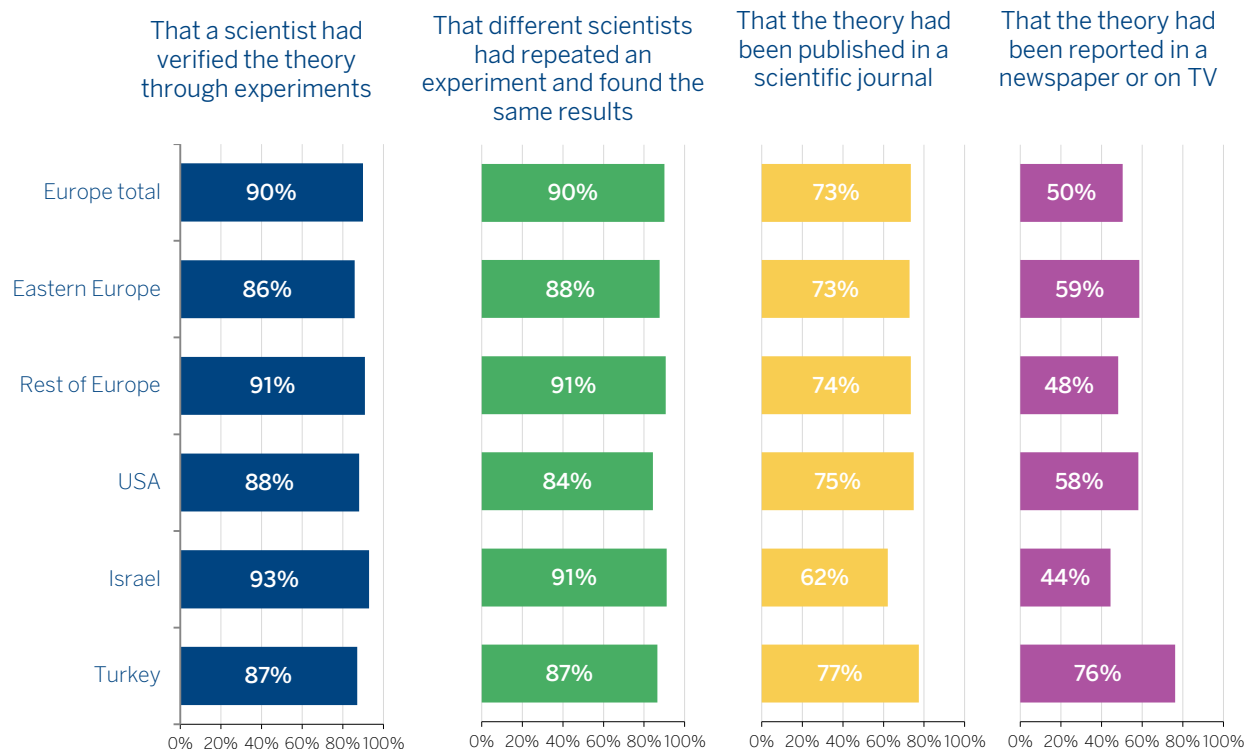
Another key dimension of scientific culture is an understanding of how scientific knowledge is produced and validated.

To decide whether a scientific theory is valid, respondents lay most store by the fact that it has been verified through experiments or observation, and that the experiment has been repeated by different scientists.

They also ascribe importance to a theory being published, but differentiate between it appearing in a scientific journal (more important) and being reported in a general news media (especially in Western European countries and Israel).

How important do you think the following criteria are in deciding whether a scientific theory is valid?  
Percent answering very important + fairly important

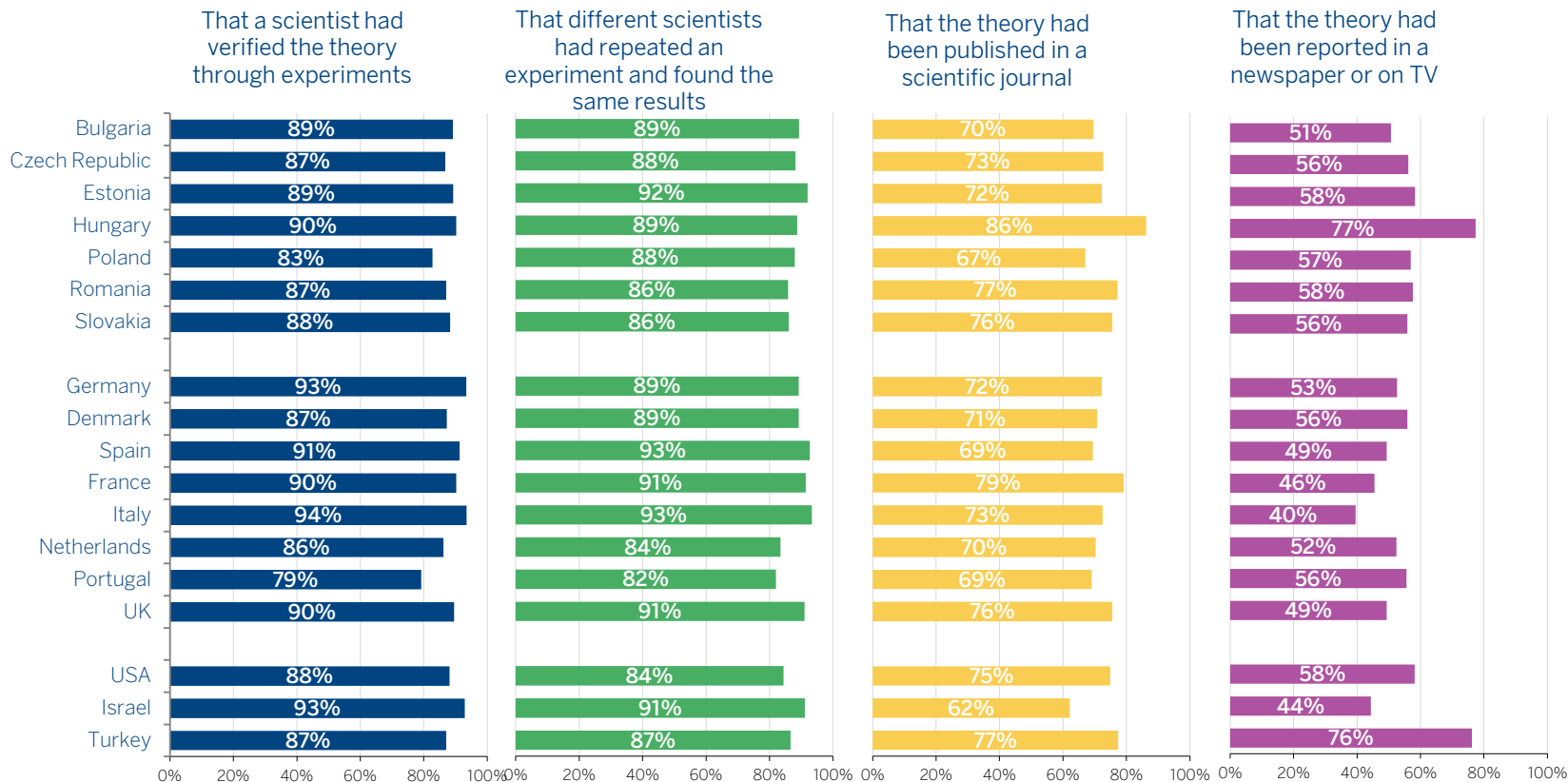
Sample: total cases (27 068)



# Validation of scientific knowledge

How important do you think the following criteria are in deciding whether a scientific theory is valid?  
Percent answering very important + fairly important

Sample: total cases (27 068)



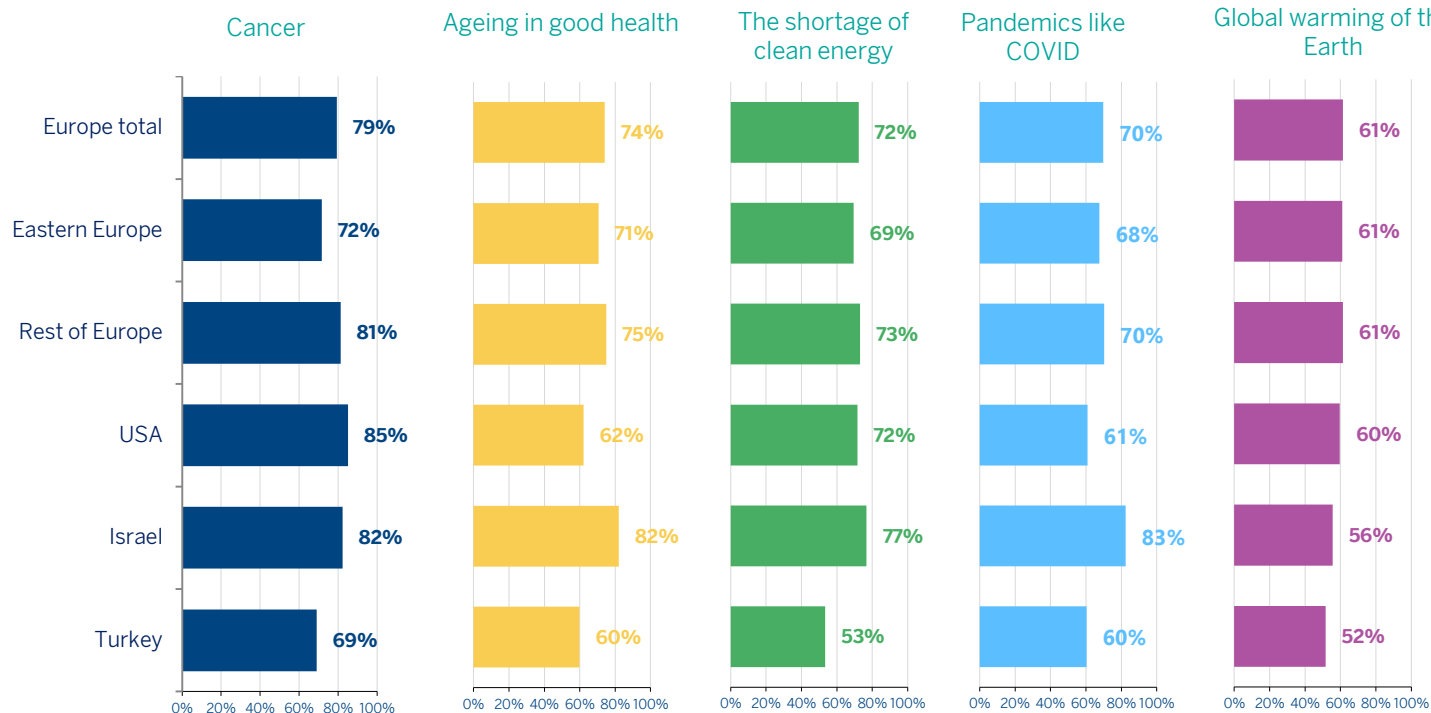
# Expectations towards the problem-solving potential of science and technology

Expectations regarding science and technology's power to solve different problems are highly favorable in the health field as concerns the treatment of cancer, ageing in good health and pandemics such as COVID. Prospects are also considered good with regard to the shortage of clean energy and, to a lesser extent, global warming.

**To what extent do you think science and technology can help solve the following issues?**

Percent answering "a lot" or "quite a lot"

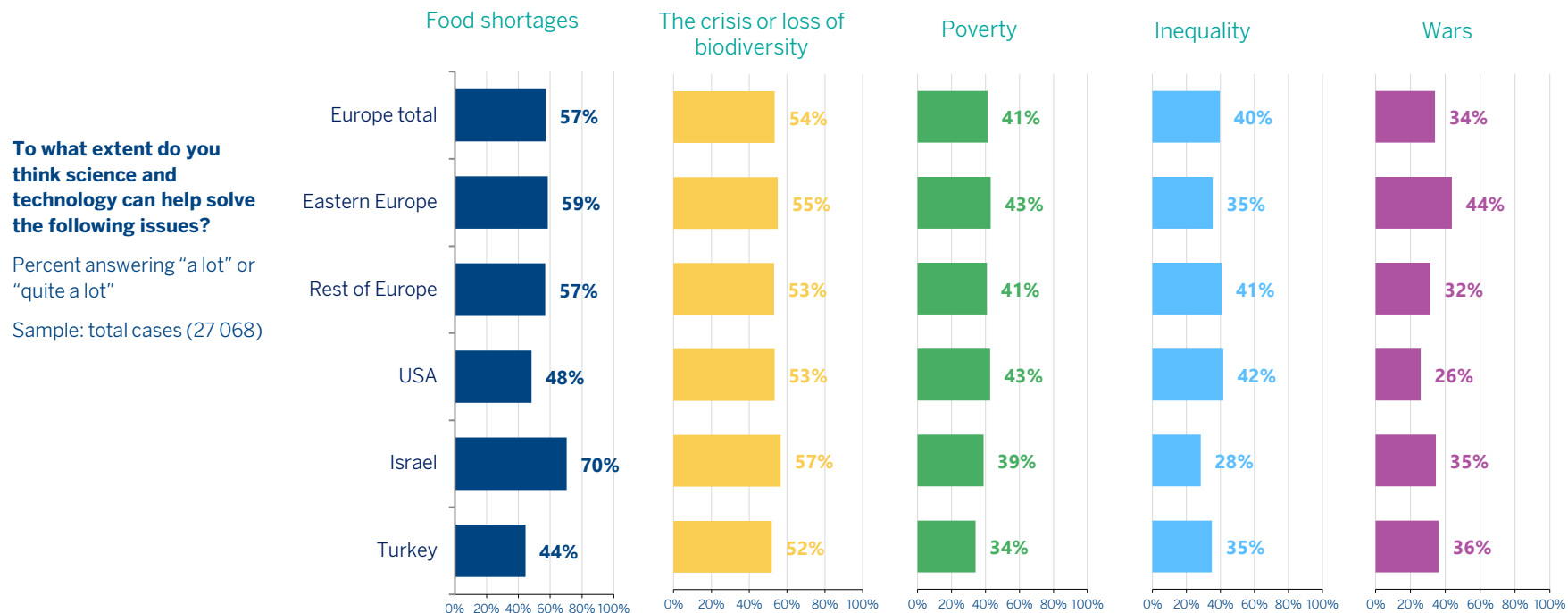
Sample: total cases (27 068)





# Expectations towards the problem-solving potential of science and technology

Expectations are also high, though more subduedly so, with regard to the potential of science and technology to solve problems like food shortages and the biodiversity crisis. At the other extreme, respondents express more reservations about its potential to address social problems like poverty and inequality, or to aid in the resolution of armed conflicts.

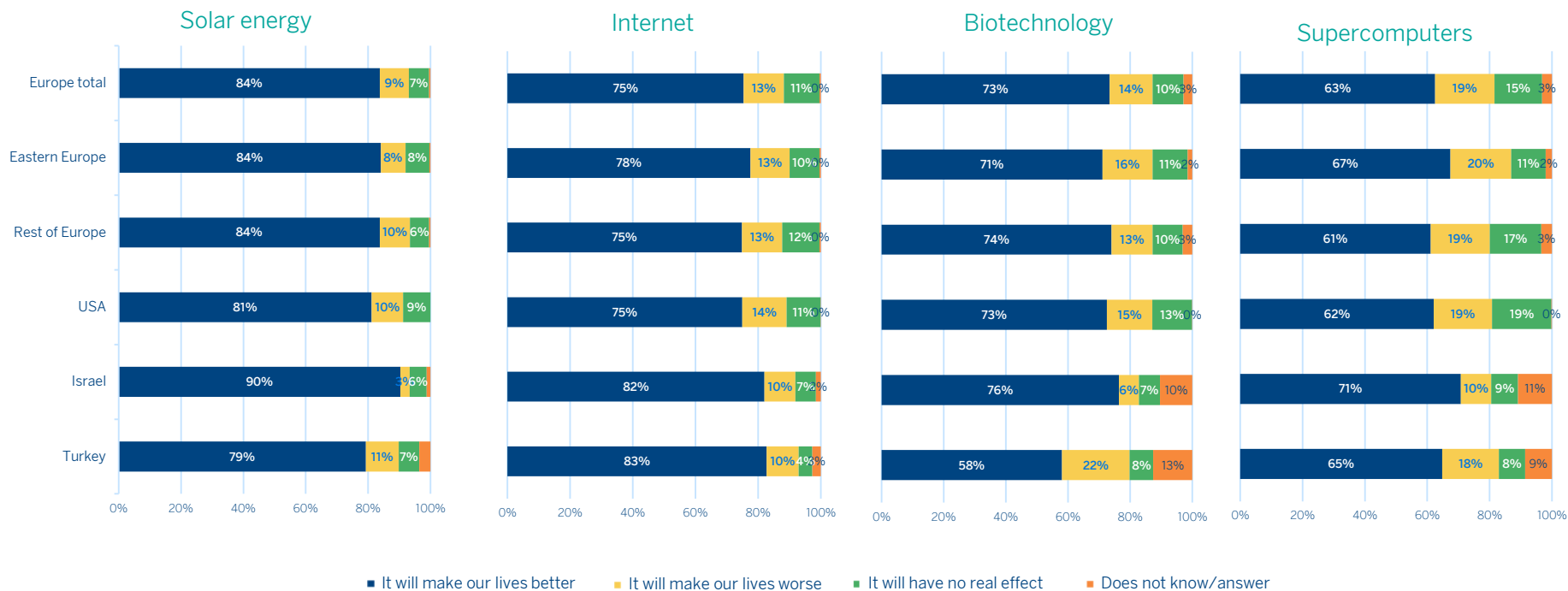


# Expectations towards applications and technologies

Expectations towards a series of technologies and scientific applications are predominantly positive. Respondents are most upbeat about solar energy, followed by Internet and biotechnology, but rather less so about supercomputers. Turkish citizens stand out for their more moderate expectations regarding biotechnology, while the Spanish together with the Israelis are the most optimistic about all these technoscientific fields.

**Do you think this technology or scientific application will make our lives better, worse or do you think it will have no real effect on our lives?**

Sample: total cases (27 068)

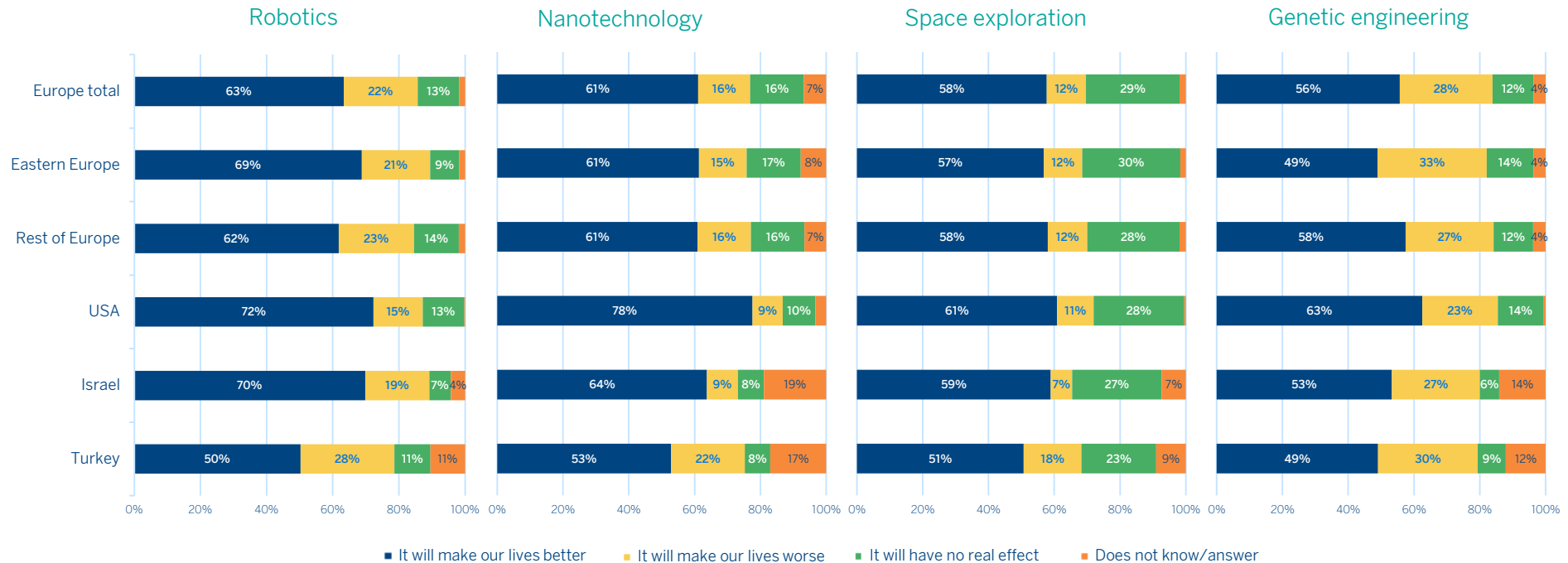


# Expectations towards technologies and applications

Although the majority believe that these applications will make our lives better in the coming years, expectations are rather more moderate regarding fields such as robotics, nanotechnology, space exploration and genetic engineering. While U.S. citizens are the most optimistic across the board, the Turks are significantly more restrained in their expectations. Eastern European respondents, meantime, see less favorable prospects for genetic engineering than their fellow Europeans.

**Do you think this technology or scientific application will make our lives better, worse or do you think it will have no real effect on our lives?**

Sample: total cases (27 068)

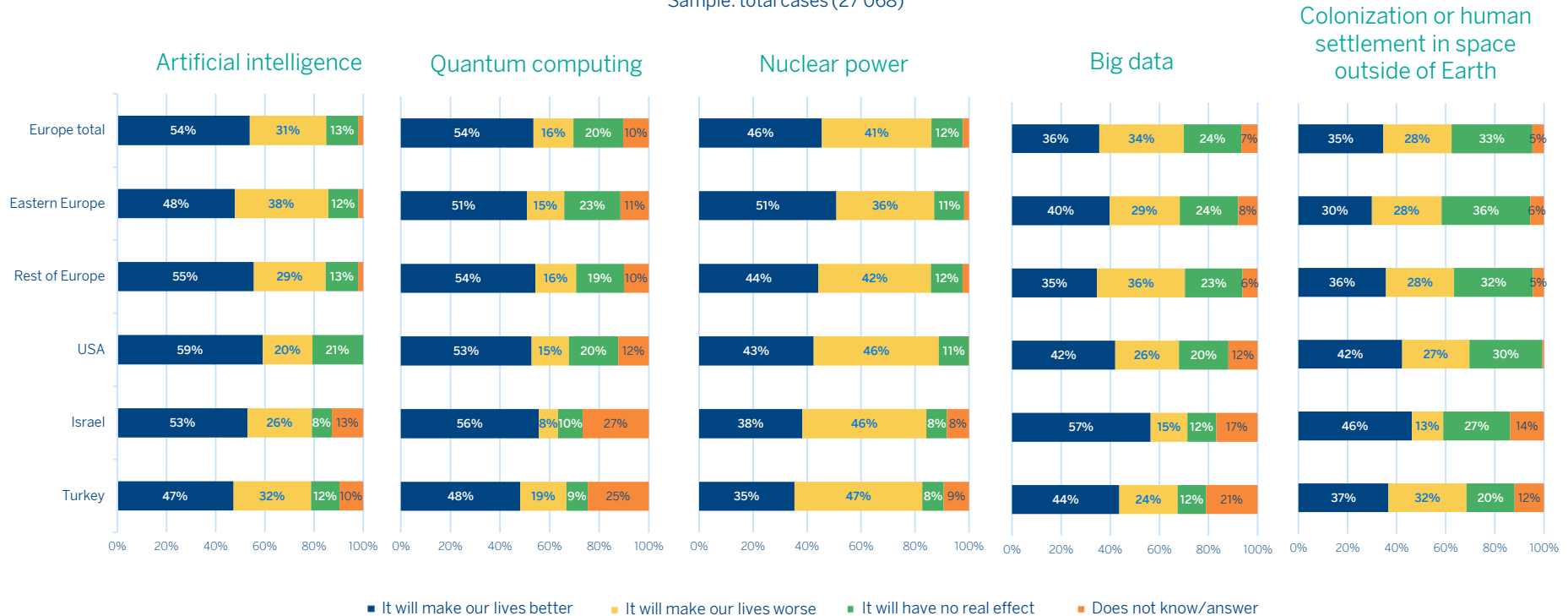


# Expectations towards applications and technologies

Artificial intelligence and quantum computing meet with less enthusiasm, while nuclear power, followed by Big Data, colonization or human settlement in space outside Earth are generally greeted with more reservations than optimism. The largest differences emerge with respect to nuclear power –with expectations highest in Eastern Europe and lowest in Turkey and Israel–, while the prospects for Big Data and the colonization of space are viewed most positively in Israel and most negatively in Europe.

**Do you think this technology or scientific application will make our lives better, worse or do you think it will have no real effect on our lives?**

Sample: total cases (27 068)



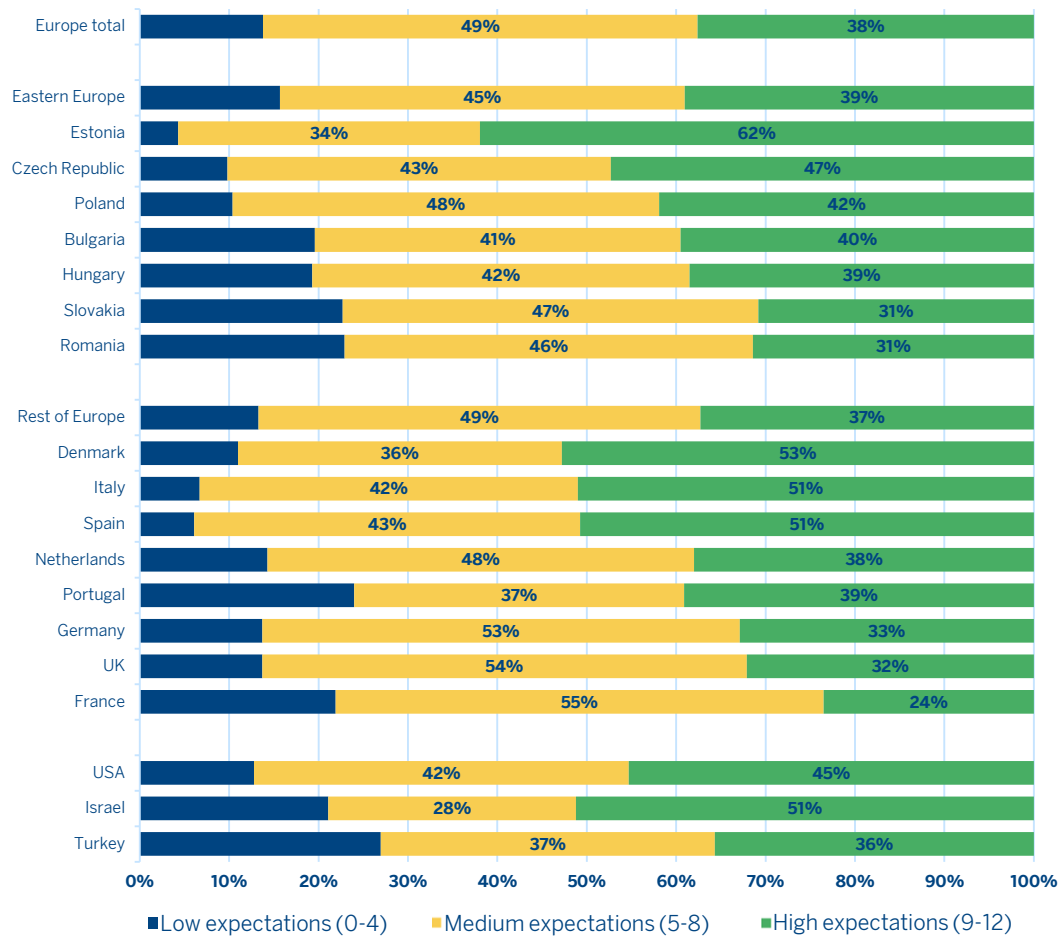
## Expectations towards applications and technologies. Aggregate indicator

In order to compare general expectations across societies, an aggregate indicator was constructed based on the number of applications that respondents say will make our lives better. As questions referred to 13 different fields, the resulting scale runs from 0 to 13. Segmenting it into three brackets, we see that the most favorable expectations correspond to Israel (albeit with a sizable segment expressing low expectations), followed by the United States, and the lowest expectations to Turkey.

Within Europe, the most upbeat citizens are those of Estonia, followed by the Danes, Italians and Spanish. At the other end of the scale stand the citizens of France, Slovakia and Romania.

### Segmentation according to the number of applications that are thought to make our lives better

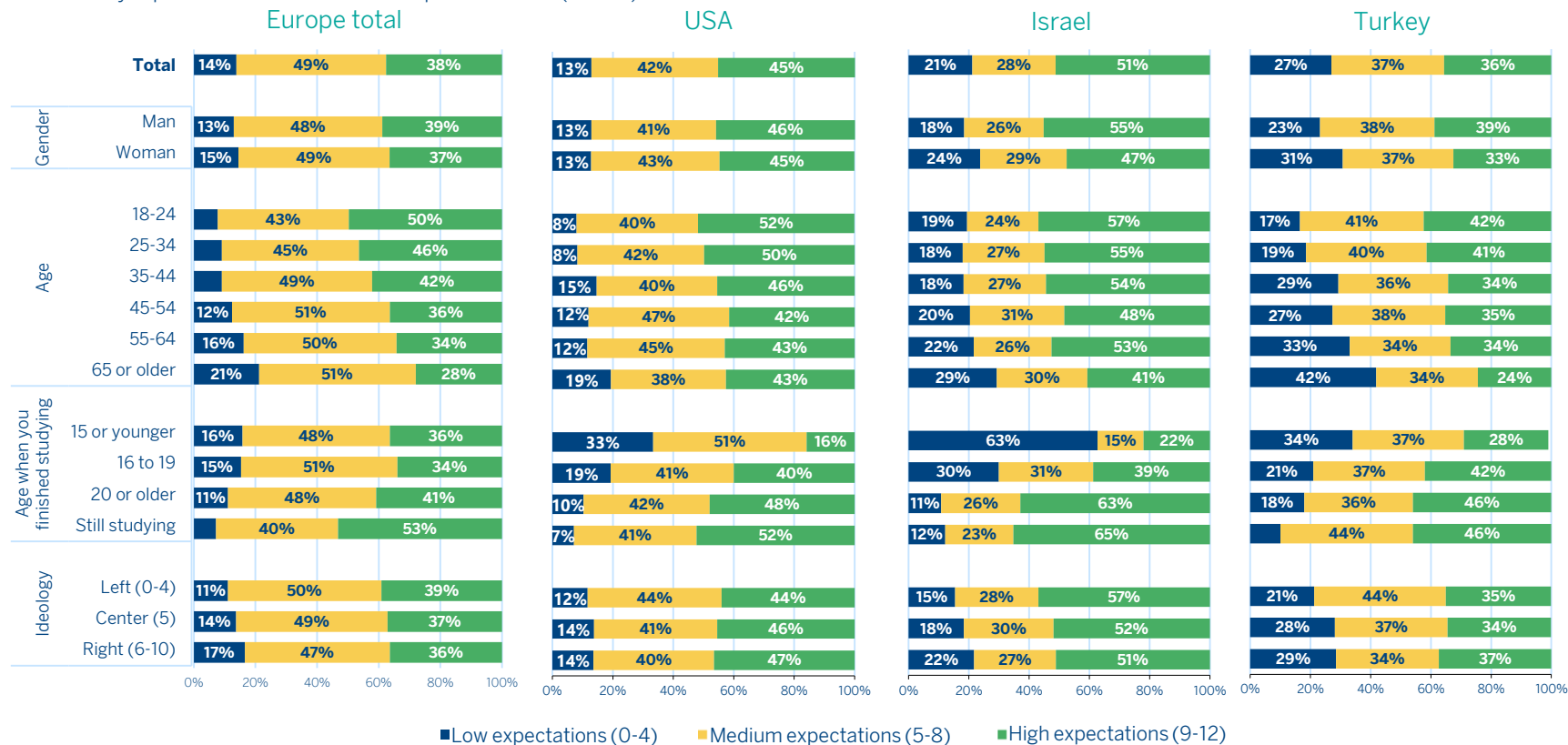
Sample: total cases (27 068)



# Expectations towards applications and technologies by sociodemographic segment

The profile of respondents expressing the highest expectations is similar to that of those with most closeness to science: higher among the young population, those of a higher educational level and those still studying. In Spain particularly but in Israel also it tends to be greater among those identifying as on the left.

Distribution by expectations. Scale: 0 to 13. Sample: total cases (27 068)



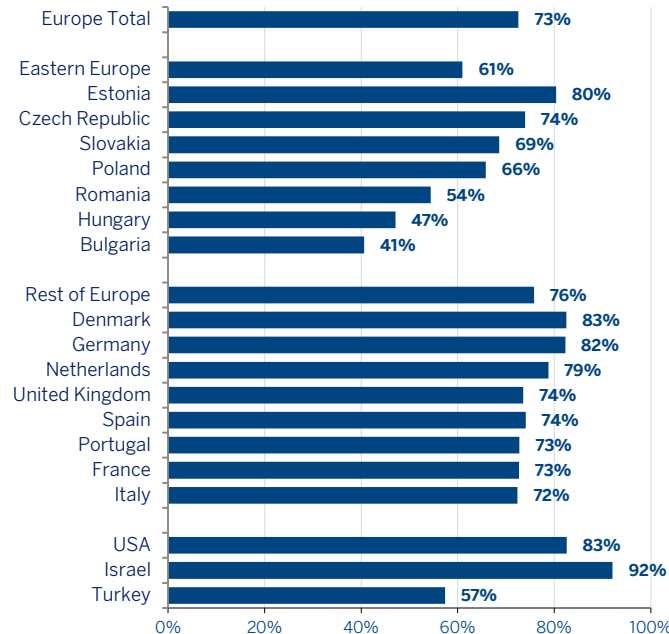
# Assessment of country's scientific and technological level & contribution

Differences in the assessment of their country's level of scientific and technological development are greater among the countries of Eastern Europe than the rest of the continent, while that of its contribution varies widely across both geographic areas. Hence while 73% of Britons take a favorable view of their country's contribution to global progress, the same is true of only 50% of the French and 52% of the Spanish.

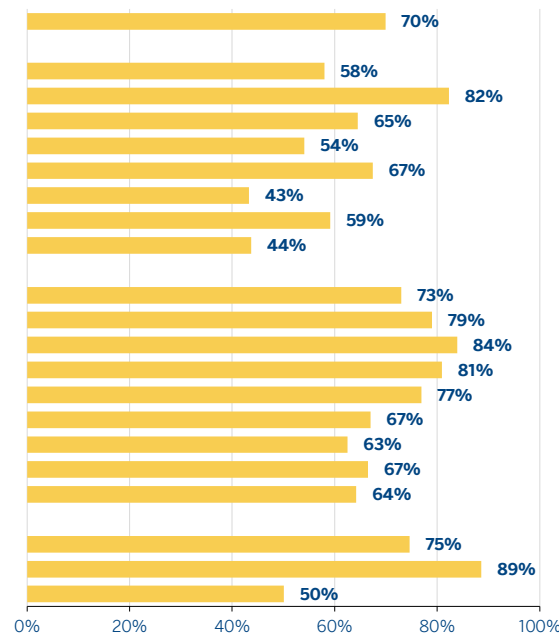
## How would you rate the existing level in (country) in each of the aspects that I am now going to read out to you?

Percent answering "very high" or "high". Sample: total cases (27 068)

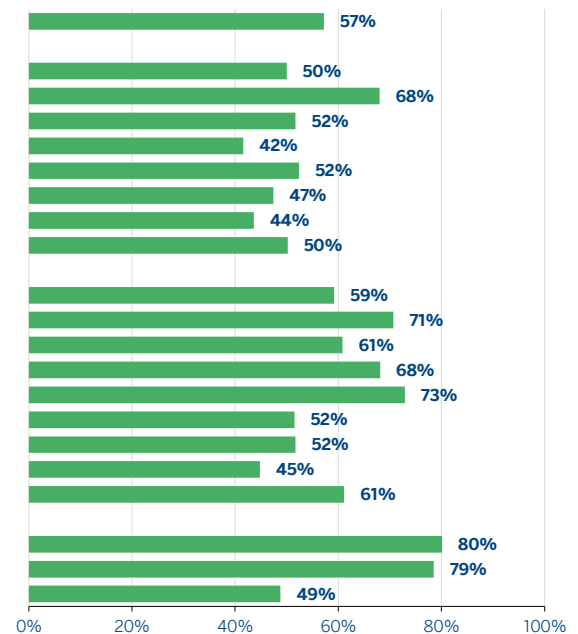
### The level of technological development



### The level of scientific development



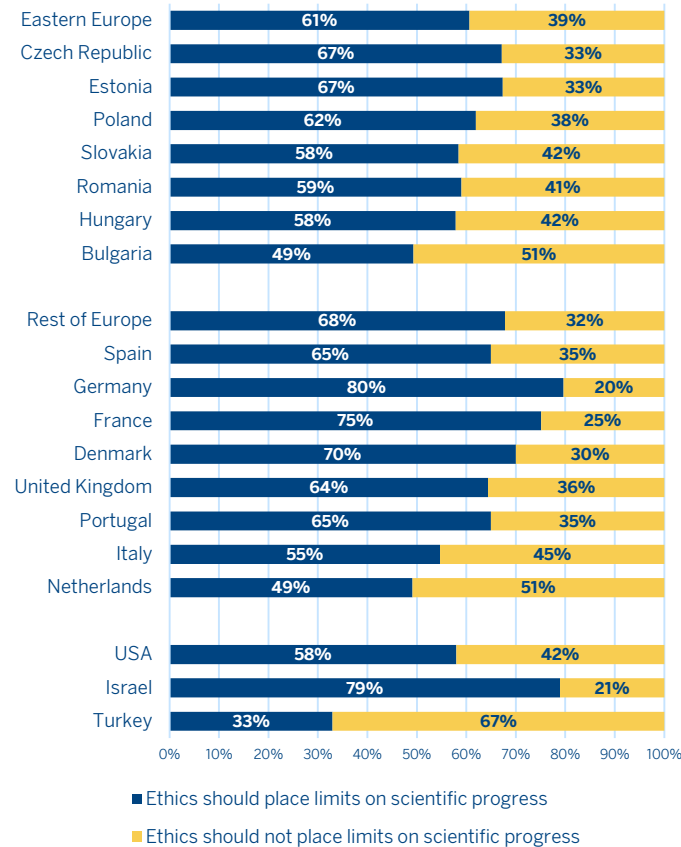
### Contribution to scientific progress on a global or international scale



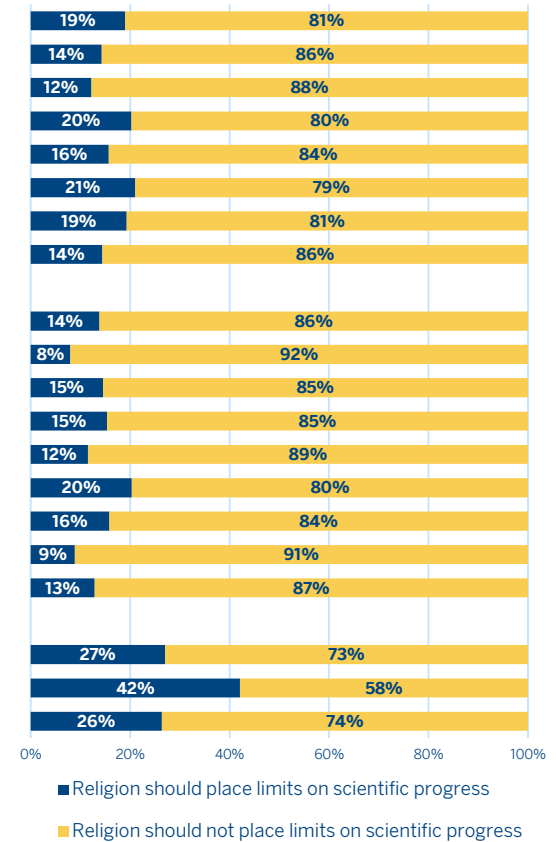
## Religion and ethics

Support for the idea that ethics should not place limits on scientific progress is stronger on average in Eastern Europe than the rest of the continent. Spain stands out for the strength of citizens' feelings that religion should not place limits on scientific progress.

Ethics should place limits on scientific progress



Religion should place limits on scientific progress



Sample: total of European cases (22 500)

\*Valid percent



## Relationship between science and religion

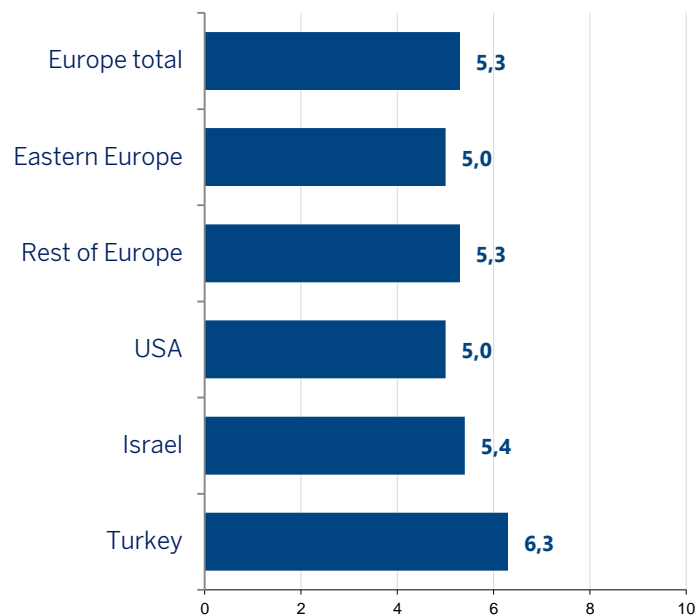
Opinions are divided between countries regarding the peaceful coexistence of science and religion. The Turkish are most predisposed to view the relationship as non-conflictive. Notably, respondents in all countries reject the idea that science negatively impacts people's religious beliefs.

**I would like you to tell me how much you agree or disagree with each of the following statements**

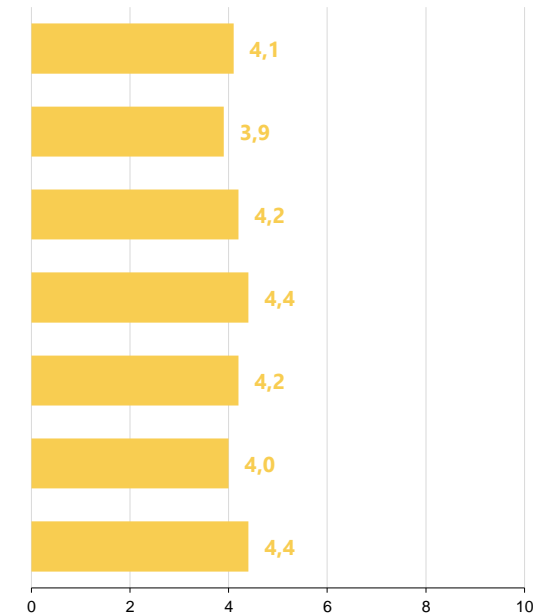
Average on a scale from 0 to 10, where 0 means you "completely disagree" and 10 that you "completely agree".

Sample: total cases (27 068)

Science and religion coexist today without problems



Science destroys people's religious beliefs



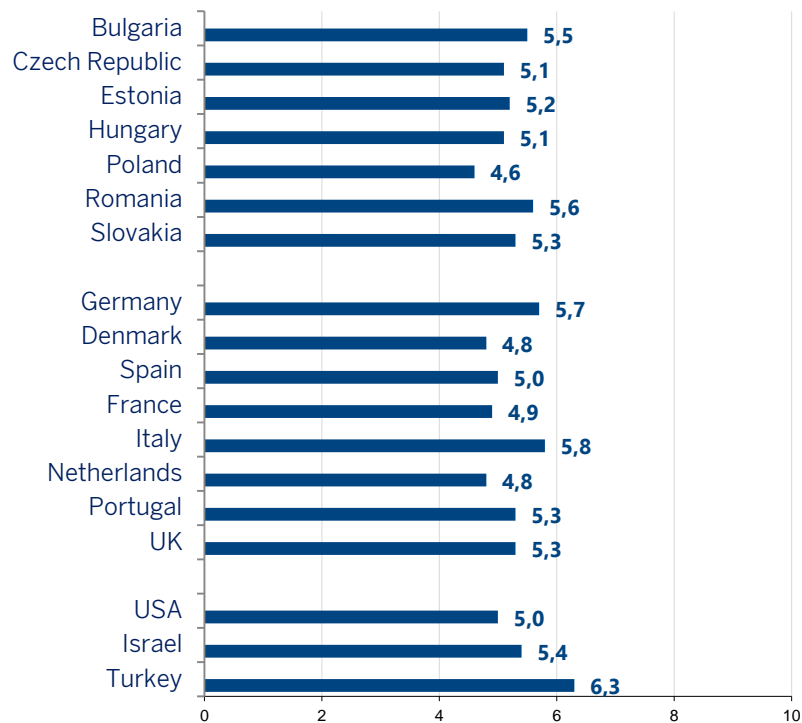
# Relationship between science and religion

I would like you to tell me how much you agree or disagree with each of the following statements

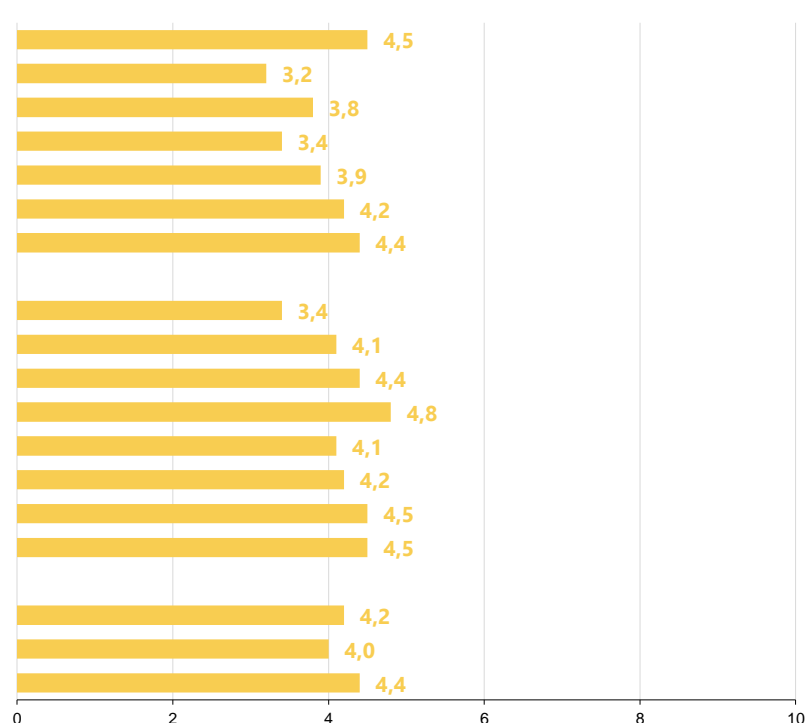
Average on a scale from 0 to 10, where 0 means you "completely disagree" and 10 that you "completely agree"

Sample: total cases (27 068)

Science and religion coexist today without problems



Science destroys people's religious beliefs

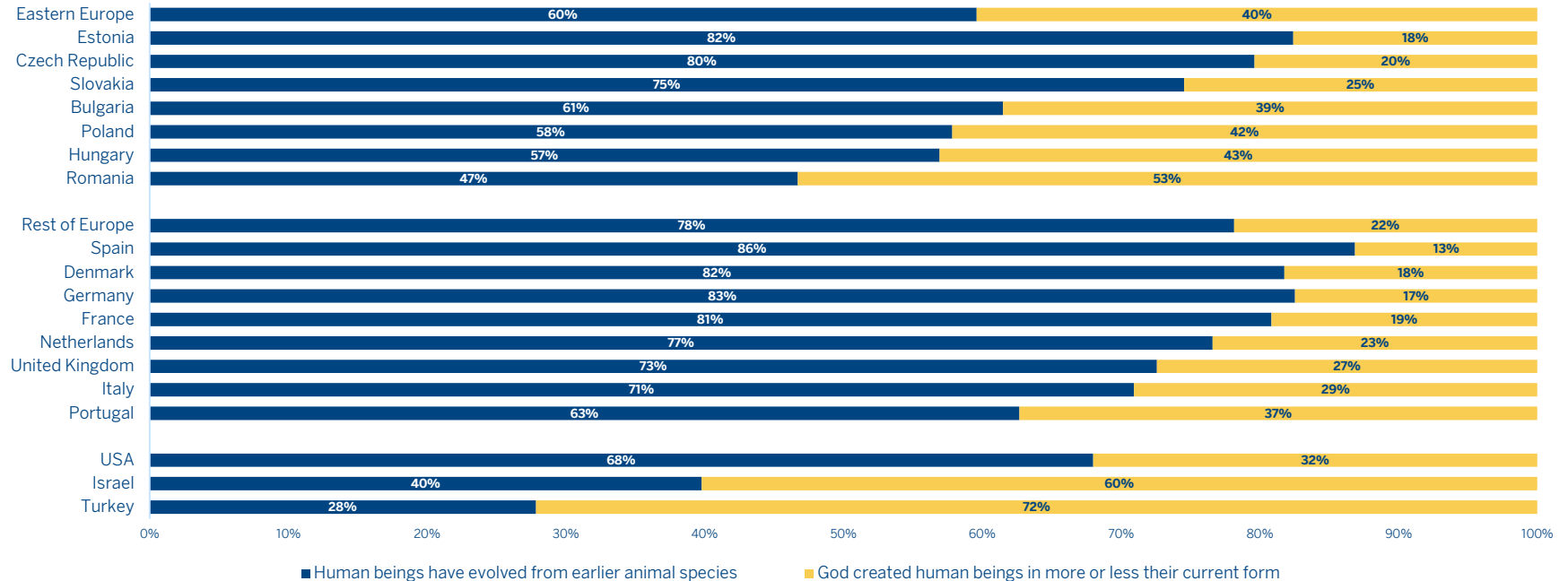


# Origin and evolution of human beings segmented by country

Within Europe, the creationist view of human origins wins out solely in Romania, but also finds sizable though not majority support (42%-37%) in Hungary, Poland, Bulgaria and Portugal.

Which of the following statements best reflects your opinion about the origin and evolution of human beings?

Sample: total of European cases (22 500) \*Valid percent

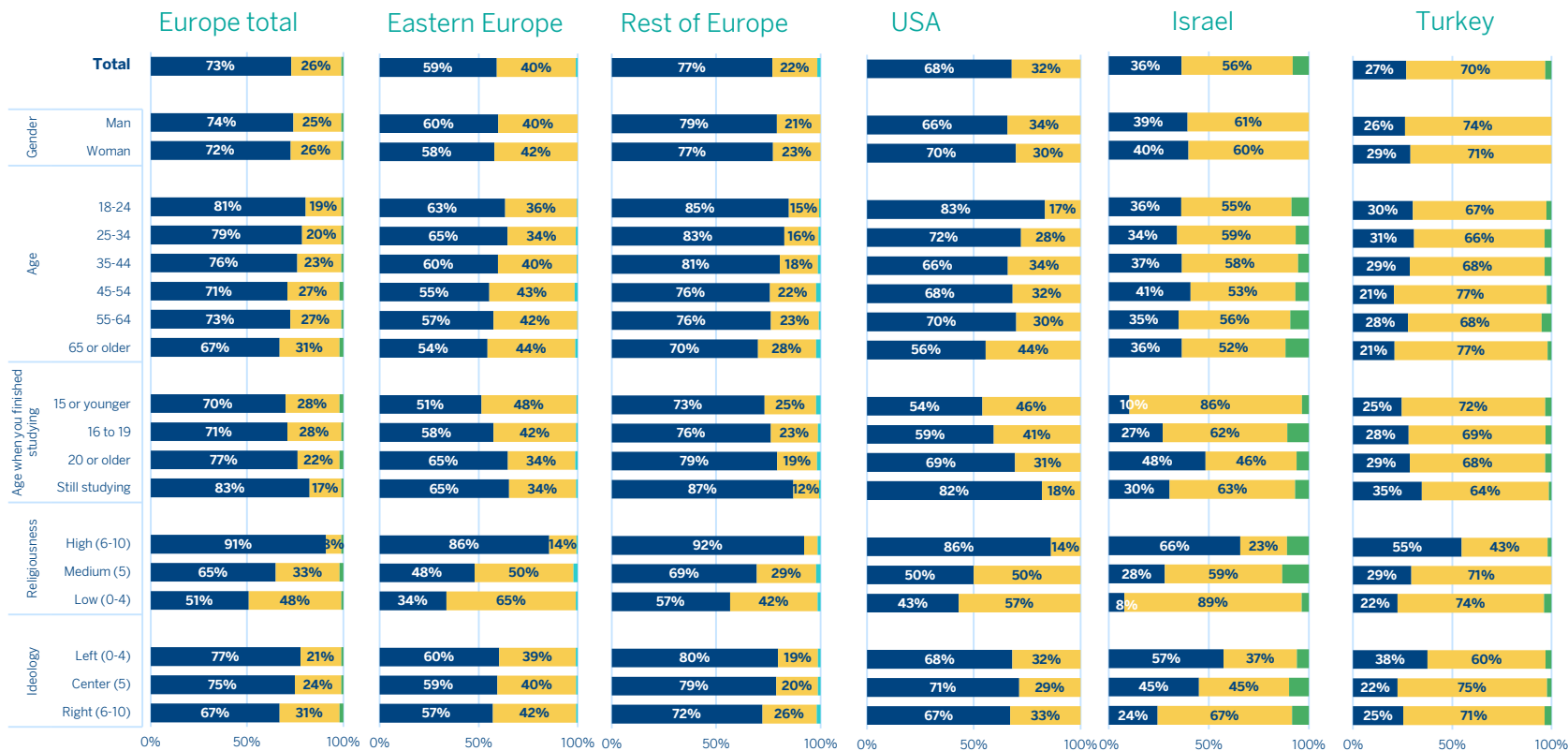


# Origin and evolution of human beings by segment

The scientific explanation of the origins and evolution of human beings tends to gain ground with decreasing age, increasing educational level and decreasing religiosity.

**Which of the following statements best reflects your opinion about the origin and evolution of human beings?** Sample: total cases (27 068)

- Human beings have evolved from earlier animal species
- God created human beings in more or less their current form
- Does not know/answer



# Science and independence

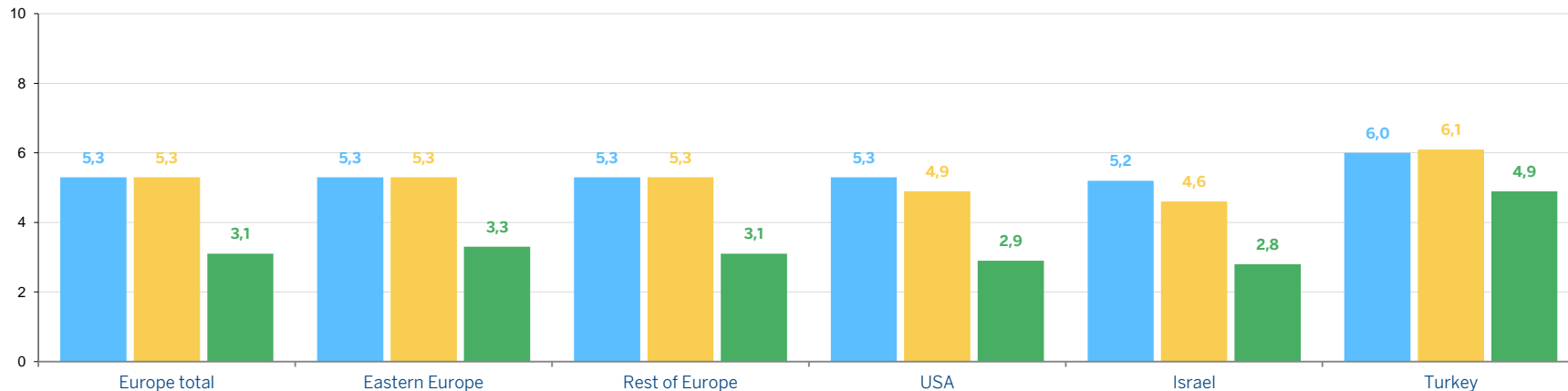
Opinions are fairly divided across survey countries regarding scientists' independence from corporate and political interests. A majority believe that scientists are not influenced by religion, except in Turkey where the issue generates greater division.

## How much do you agree or disagree with the following sentences about science and scientific careers?

Average on a scale from 0 to 10, where 0 means you completely disagree and 10 means you completely agree.

Sample: total cases (27 068)

- Scientists are influenced in their conclusions by corporate interests
- Scientists are influenced in their conclusions by political interests
- Scientists are influenced in their conclusions by religion



# Regulation of science

Countries vary in their stances on the control of scientific research. Citizens in Eastern Europe, the United States and Turkey tend to the view that it should be controlled by scientists themselves, while in the rest of Europe opinions are divided, 46% believing it should be controlled by scientists, 36% by society and 17% by the State. This last option also finds support among 37% of Israelis and 32% of Turks. Majorities or relative majorities in almost all European countries say scientific research should be controlled by scientists. In France there is an even split between those believing it should be controlled by scientists and those favoring control by society. A relative majority of Germans support the idea that it should be society that exercises control over scientific research.

**Do you believe that scientific research should be controlled by the scientists themselves, should it be controlled by the State or should it be controlled by society?**

Sample: total cases (27 068)

