Trust in scientists and their role in society across 67 countries

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Abstract

Scientific information is crucial for evidence-based decision-making. Public trust in science can help decision-makers act based on the best available evidence, especially during crises such as climate change or the COVID-19 pandemic[1,2]. However, in recent years the epistemic authority of science has been challenged, causing concerns about low public trust in scientists[3]. Here we interrogated these concerns with a pre-registered 67-country survey of 71,417 respondents on all inhabited continents and find that in most countries, a majority of the public trust scientists and think that scientists should be more engaged in policymaking. We further show that there is a discrepancy between the public's perceived and desired priorities of scientific research. Moreover, we find variations between and within countries, which we explain with individual- and country-level variables, including political orientation. While these results do not show widespread lack of trust in scientists, we cannot discount the concern that lack of trust in scientists by even a small minority may affect considerations of scientific evidence in policymaking. These findings have implications for scientists and policymakers seeking to maintain and increase trust in scientists.

Introduction

Public trust in science provides many benefits to people and society at large. It helps people make informed decisions (e.g., on health and nutrition) based on the best available evidence, provides the foundation for evidence-based policymaking, and warrants government spending on research. Trust in science is also vital for the management of global crises like the COVID-19 pandemic and climate change. Societies with high public trust in science dealt with the COVID-19 pandemic more effectively, as citizens were more likely to comply with non-pharmaceutical COVID-19 interventions[2] and had higher vaccine confidence[1]. People with high trust in science are also more likely to engage in individual and collective action on climate change[4,5].

Globally, most people trust science, and scientists are among the most trusted actors in society[6–8]. However, previous studies point to strong national and regional differences in trust in science, with anti-science attitudes and lower trust in science being more prevalent in some Latin American and African countries[7,9,10]. To avoid misleading inferences from Western to non-Western countries, more global, comparative research on trust in science is imperative.

While science is generally held in high esteem, its epistemic and cultural authority has been challenged by mis- and disinformation[11,12], historical failings of science[13], an alleged "reproducibility crisis"[14], conspiracy theories[15,16], and science-related populist attitudes[17,18]. Science-related populism has been conceptualised as a perceived antagonism between 'the ordinary people' and common sense versus academic elites and scientific expertise[17]. Unlike political populism, which criticises political elites and their political power claims, science-related populism criticises academic elites, challenges their decision-making authority in scientific research, and suggests that their epistemic truth claims are inferior to the common sense of 'the people'[17]. Anti-science attitudes, even if held by only a minority of people, raise concerns about a potential crisis of trust in science which could challenge the epistemic authority of science and the role of scientists in supporting evidence-based policymaking[9,17]. These concerns, which have been prominently discussed in leading news media, have been exacerbated as trust in scientists and their desired role in policymaking has become divided along partisan lines. A number of previous studies show that in the US and some other countries, conservatives and right-leaning individuals have low levels of trust in scientists, hold stronger anti-science attitudes, and express low confidence that scientists act in the best interest of the public, provide benefits to society, and apply reliable methods[9,10,19–21].

Overall, however, there is scant robust global comparative evidence on trust in science, and, in particular, the extent to which concern over a lack of trust in scientists is justified. This raises the risk of ill-informed science policies, and misconceptions about the state of science in society. These concerns call for a global study on the prevalence and correlates of trust in scientists and public expectations about scientists' role in society and policymaking.

There are only a few global studies on trust in scientists, and they have significant limitations[6–10,22,23]. They either focus on Western countries, assess a limited range of theoretical constructs, or do not assess normative perceptions of the role of scientists in society and policymaking—a central construct in our study. Our large-scale, pre-registered survey addresses these limitations by offering the first global dataset on trust in scientists post-Covid-19 pandemic[24]; being the first global study to investigate normative perceptions of scientists in policymaking; using a theoretically informed multidimensional trust measure[25]; examining demographic, attitudinal, and country-level factors that explain why trust varies across countries; surveying underrepresented countries and individuals in research[26]; and, in almost all countries, including local collaborators[27,28]. Our survey also goes beyond commonly studied correlates of trust in scientists by investigating people's desired research priorities.

Our study was a crowd-sourced Many Labs project with the same translated online questionnaire given to 71,417 respondents in k = 67 countries[i] on all inhabited continents (fig. S1[1]). The survey covered 31% of the world's countries that jointly make up 78% of the global population. Data were collected between November 2022 and August 2023, with quota samples that were weighted according to national distributions of age, gender, and education level, as well as country sample size. As recommended by other global studies on trust in science[7], we provided respondents with a definition of science and scientists to mitigate semantic variations across languages (see SI). For example, "science" does not translate precisely into German, Swedish, and Polish, where the term also encompasses the "humanities". We slightly deviated from the preregistration because of multicollinearity (exclusion of confidence in science as a model covariate) and sparsely populated sample strata in certain countries (collapsing neighbouring strata during post-hoc weighting; see SI).

Trust in scientists across the world

We assessed trust in scientists with an index composed from a 12-item scale measuring four established dimensions of trustworthiness: perceived competence, benevolence, integrity, and openness[25,29,30]. This is based on the most comprehensive review of trust measures used to assess perceptions of scientists[30]; was pre-tested to confirm its reliability; relies on accepted conceptual assumptions that we validated in factor analyses; and has high reliability across countries (see SI). However, confirmatory factor analyses show that we can only assume configural invariance and no metric or scalar invariance (see SI). This is a common caveat of multilingual survey research and to some extent unavoidable[31].

Globally, trust in scientists is moderately high (global M = 3.62, SD = 0.70; 1 = very low, 3 = neither high nor low, 5 = very high). No country surveyed revealed low trust in scientists overall (Fig. 1). Across the globe, people perceive scientists as having high competence (M = 4.02, SD = 0.71), moderate integrity (M = 3.59, SD = 0.78), and benevolent intentions (M = 3.55, SD = 0.82; table S1). Scientists' perceived openness to feedback is slightly lower (M = 3.33, SD = 0.86), with 23% believing that scientists pay only somewhat or very little attention to others' views (fig. S2). Globally, 75% agree that scientific research methods are the best way to find out if something is true or false. Trust in scientific methods moderately correlates with trust in

[1] Supplementary Information is available from the corresponding author upon request.

scientists ($r = 0.48$, $p < .001$), supporting previous findings on the multidimensionality of trust in science[32].

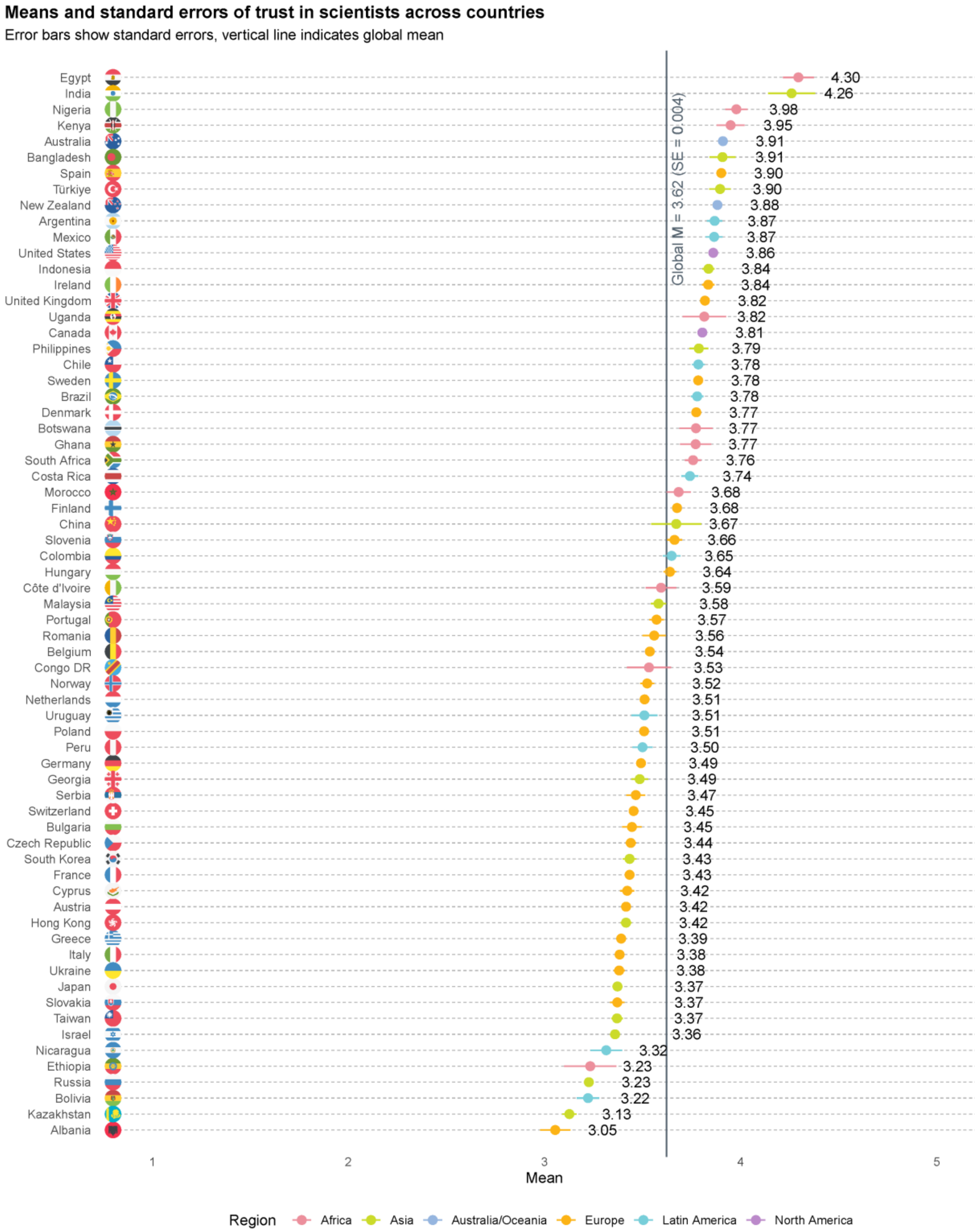

Fig. 1. Weighted means (*M*) for trust in scientists across countries and regions (1 = very low, 3 = neither high nor low, 5 = very high). Note. Vertical line denotes weighted global mean. Horizontal lines indicate standard errors (*SE*). Country-level SEs range between 0.008-0.133.

Country-level analyses show that trust in scientists differs considerably across countries and world regions (Fig. 1). For example, trust is highest in Egypt and India and lowest in Albania and Kazakhstan. Contrary to previous studies[7,8], we do not find a clear pattern that scientists are less trusted in Latin American and African countries. However, we do find patterns within specific regions. For example, Russia as well as several former Soviet republics and satellite states show relatively low trust in scientists.

Explanatory factors of trust in scientists and cross-country variations

To identify correlates of trust in scientists globally, we fitted linear random-intercept regression models that included post-stratification weights to provide estimates that were nationally representative in terms of gender, age, and education in almost all countries. Women, older people, residents of urban (versus rural) regions, people with higher income, as well as more religious, educated, liberal, and left-leaning people trust scientists more (Fig. 2, see also table S2). Differences across countries and sociodemographic groups can be explored with an online dashboard developed for this project.

We find a small positive relationship between tertiary education and trust in scientists across countries ($b = 0.029$, $p < .001$). Tertiary education has the strongest association with trust in scientists in the United States and Austria (fig. S3). In most other countries, we find no significant relationship between tertiary education and trust.

Globally, religiosity is positively associated with trust in scientists ($b = 0.048$, $p < .001$), but there are substantive differences depending on which particular religion is involved. In Muslim countries such as Türkiye, Bangladesh, and Malaysia (fig. S4), people did not perceive strong conflicts between scientific and religious epistemologies, and trust is positively associated with religiosity[33]. In contrast, religiosity is negatively related to trust in scientists in Israel and many Christian-majority European countries, in which a majority perceives disagreements between science and the teachings of their religion[33].

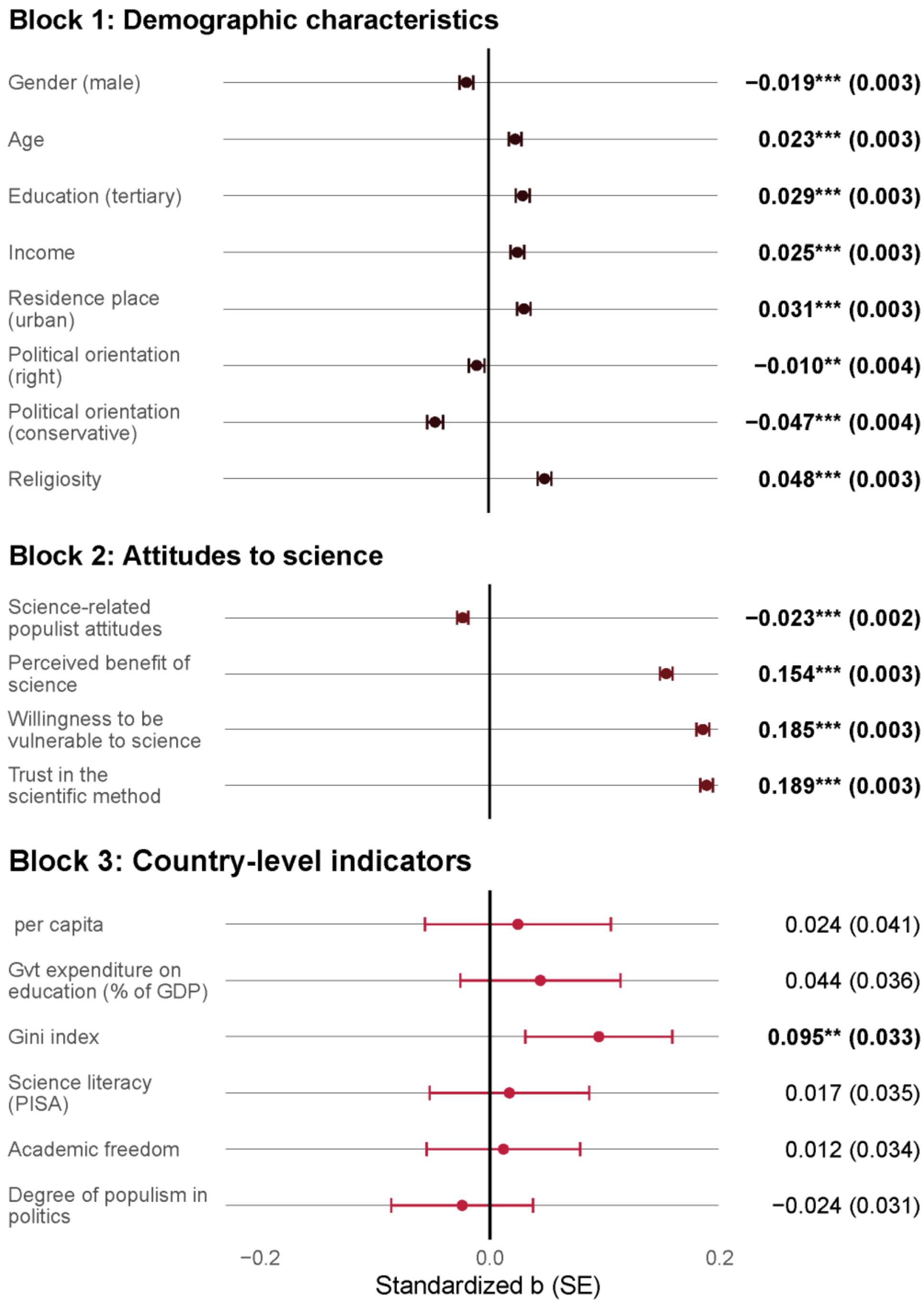

Fig. 2. Standardised estimates of weighted blockwise multilevel regression model testing the association of trust in scientists with demographic characteristics, attitudes, and country-level indicators (random intercepts across countries). Block 1 uses data from all 67 countries, block 2 uses data from 66 countries (all except Mexico), block 3 uses data from 52 countries (all except those where PISA's literacy scores were not available, see supplementary material). Full regression results are reported in table S2. ** $p < .01$, *** $p < .001$.

Previous studies, mostly focused on North America and Europe, have found right-leaning political orientation to be negatively associated with trust in scientists[9,21]. However, we find the relationship to be more complex. Overall, trust in scientists is slightly higher among people with left-leaning political orientations (b = -0.010, p = .003) than right-leaning orientation. However, this relationship varies substantially across countries (Fig. 3). Right-leaning political orientation is negatively associated with trust in scientists in several European and North American countries, as well as in Brazil and Israel, so previous research, which has disproportionally focused on these countries, has tended to stress right-leaning distrust. However, in most countries (k = 41), our data do not show a relationship between political orientation and trust in scientists. Furthermore, in some Eastern European, South-East Asian, and African countries, right-leaning individuals have higher trust in scientists.

These contrasting findings may be explained by the fact that in some countries right-leaning parties may have cultivated reservations against scientists among their supporters, while in other countries left-leaning parties may have done so[34] (see fig. S5). In other words, the attitudes of political leadership rather than peoples' political orientation may better explain politically correlated attitudes towards scientists (see SI for selected country-specific explanations). In any case, extrapolating findings from Western to non-Western countries may be misleading.

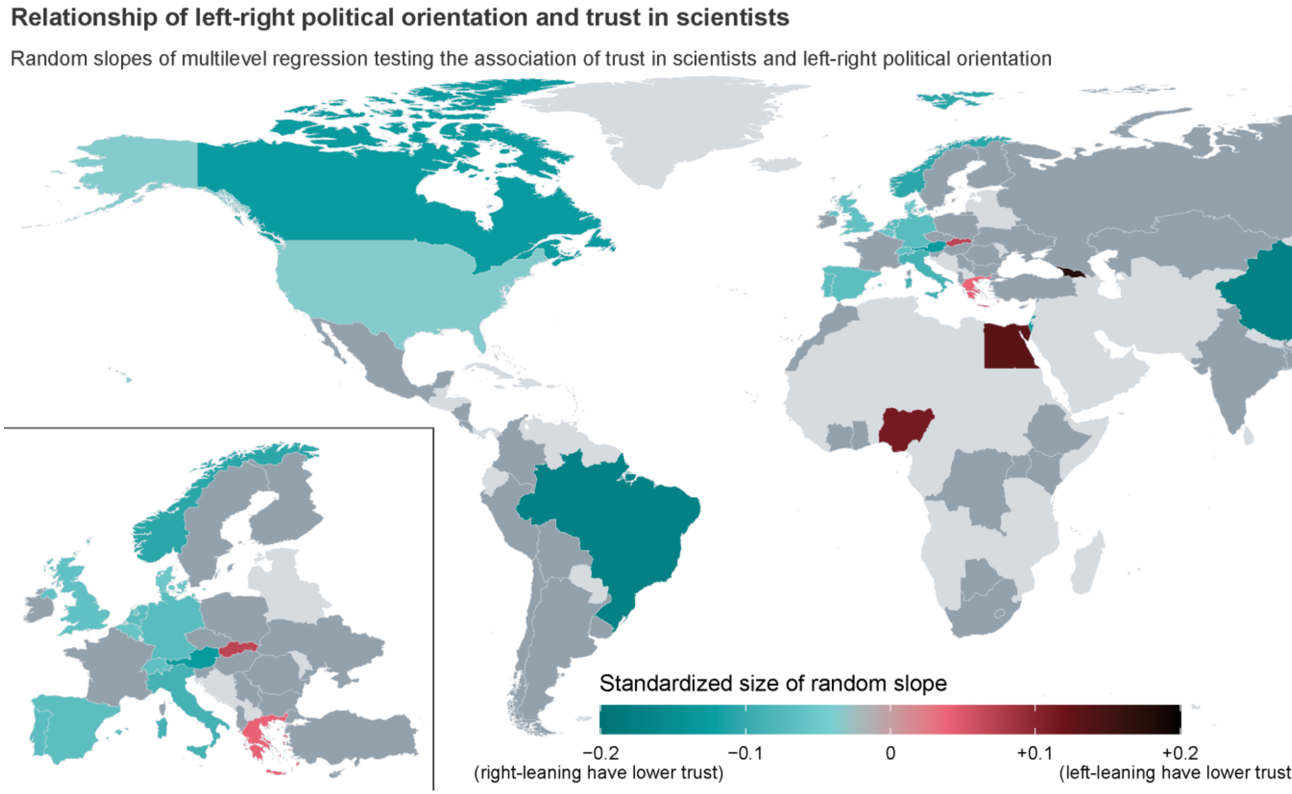

Fig. 3. Relationship of left-right political orientation and trust in scientists. Figure visualises standardised random slopes for political orientation (1 = left – 5 = right), which were extracted from a weighted linear multilevel regression model that explained trust in scientists (1 = very low, 3 = neither high nor low, 5 = very high) across countries and contained random intercepts and slopes of political orientation across countries. Countries with significant effects ($p < .05$) are displayed in colours: Countries coloured in shades of blue show a positive association of left-leaning orientation and trust in scientists (i.e., right-leaning have lower trust). Countries coloured in shades of red show a positive association of right-leaning orientation and trust in scientists (i.e., left-leaning have lower trust) Countries with non-significant effects are shaded in dark grey. Countries with no available data are shaded in light grey.

Trust is significantly associated with attitudes towards science. We find positive relationships between people's trust in scientists and their willingness to rely on scientific advice and thus make themselves vulnerable to scientists, the belief that science benefits people like them, and trust in scientific methods. We also find that science-related populist attitudes—that is, beliefs that people's common sense is superior to the expertise of scientists and scientific institutions—are associated with lower trust in scientists. We also tested pre-registered hypotheses assuming that trust in scientists is linked to country-level indicators, including GDP per capita, PISA's science literacy score, and the Academic Freedom index.

Contrary to the finding of the Wellcome Global Monitor[7], we find that trust is positively associated with the Gini index (i.e., trust is higher in countries with more income inequality). One possible explanation for the discrepancy between the two studies is that urban populations—which are more likely to trust scientists (Fig. 2)—were overrepresented in our samples from countries with high Gini scores, e.g., South Africa and Argentina. However, we suggest that the discrepancy may not just be methodological: people in countries with high inequality may see scientists as a trustworthy alternative to perceivably corrupt political and economic elites[35–37]. Mapping average trust levels against the Gini index (fig. S6) shows that the relationship between the two seems to be driven by countries scoring relatively high on Transparency International's Corruption Perceptions Index[38], primarily Latin American countries as well as Sub-Saharan African countries. We do not find that trust is higher in countries with higher science literacy scores and government expenditures on education, which challenges assumptions that public understanding of science and policy measures to increase it foster trust in scientists[39].

Normative perceptions of scientists' role in society and policymaking

Left-right divides in public opinion about science often centre on the question of whether scientists should take an active role in policymaking[40]. We find that the level of agreement with statements that scientists should engage in society and policymaking is moderately high (global M = 3.64, SD = 0.87, 1 = strongly disagree – 5 = strongly agree). Globally, a large majority (82%) agrees that scientists should communicate about science with the public, particularly in African countries. Globally, only a minority disagrees that scientists should actively advocate for specific policies (23%), communicate their findings to politicians (20%) and be more involved in the policymaking process (21%). However, perceptions differ across countries, with lowest agreement in Serbia and Slovenia (fig. S7).

About a quarter of the global sample selected the scale midpoints, therefore neither agreeing nor disagreeing on whether scientists should be more involved in policymaking and society (Fig. 4). People with high trust in scientists strongly favour scientists' engagement in society and policymaking (b = 0.273, p < .001), especially in English-speaking countries including the United States and Australia (fig. S8). Support for scientists' engagement in society and policymaking also varies both between and within countries. We find that people who are younger, have tertiary education and higher income, or live in urban areas, generally approve of scientists' engagement in policymaking (table S3). We also find that right-leaning people and conservatives disapprove of scientists' engagement in society and policymaking.

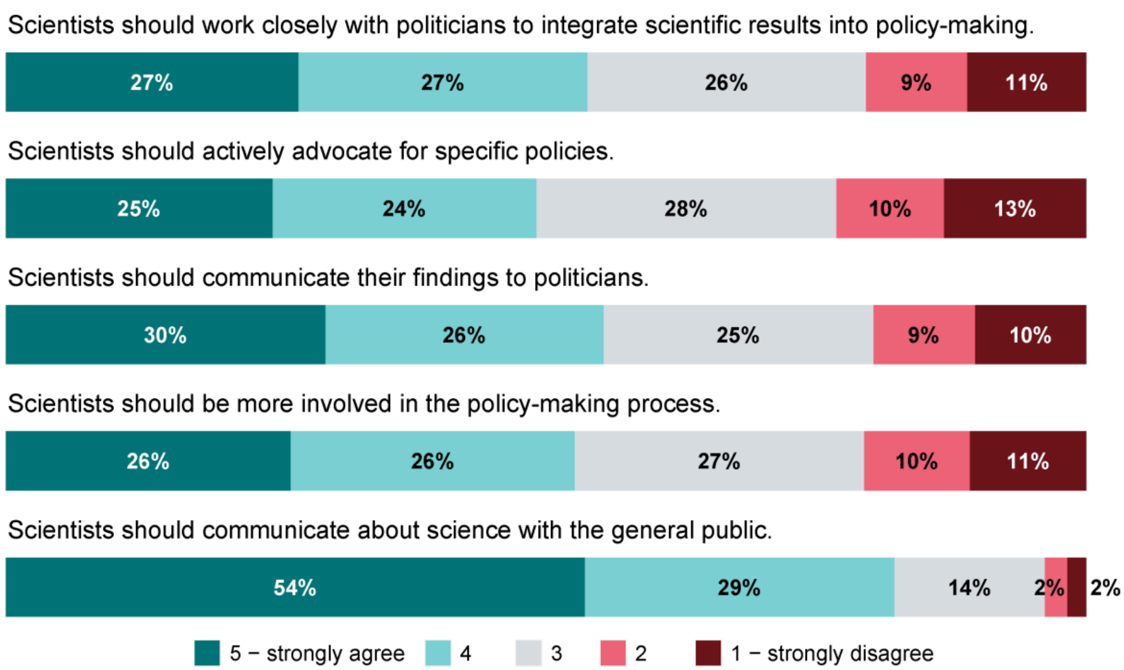

Fig. 4. Weighted response probabilities for single items measuring normative perceptions of scientists in society and policymaking.

Desired research priorities and perceptions that these are tackled

We hypothesised that trust in scientists relates to another normative belief about science: Expectations about which societal goals scientists should prioritise[41]. We tested this and compared whether people's expectations match their perceptions of whether scientists actually tackle these goals.

Globally, people assign the highest priority to improving public health (*M* = 4.49, *SD* = 0.84, 1 = low – 5 = high), followed by solving energy problems (*M* = 4.38, *SD* = 0.91), and reducing poverty (*M* = 4.08, *SD* = 1.10). Responses suggest a substantial discrepancy between what they think scientists should prioritise (i.e., desired priorities) and what they perceive science is currently prioritising (i.e., perceived priorities), with poverty reduction showing the most substantial discrepancy (Fig. 5). The least desired research goal is developing defence and military technology (*M* = 3.10, *SD* = 1.36). Again, there are large differences between global regions (ranging from *M* = 1.88, *SD* = 1.21 in Uruguay to *M* = 4.07, *SD* = 1.52 in the Democratic Republic of Congo). In African and Asian countries, people often demand high priority for developing defence and military technology, as opposed to people in most European and Latin American countries (fig. S9). Overall, people tend to think science prioritises developing defence and military technology more than they desire.

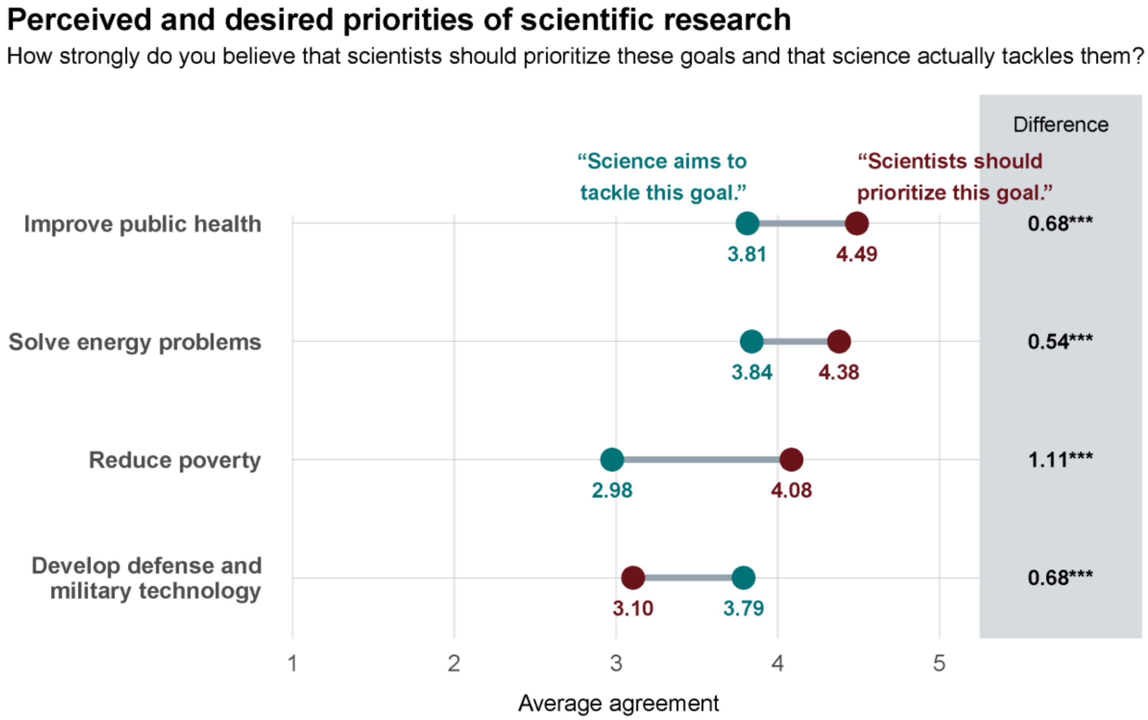

Fig. 5. Perceived research priorities for four goals of scientific research (blue) and desired research priorities (red). Grey horizontal lines indicate the discrepancy between desired priorities "Scientists should prioritize this goal") and perceived research priorities ("Science aims to tackle this goal"). Stars indicate results of weighted paired-samples t-tests for significant differences between perceptions and expectations, *** $p < .001$.

Trust in scientists is strongly associated with the discrepancy between people's desired research priorities and perceptions that science aims to tackle them (table S4). For people with higher trust in scientists, odds are higher that perceived priorities exceed desired priorities. This applies also to younger people, males, and people with right-leaning political orientation. However, people with lower trust in scientists, left-leaning views, and liberal political orientation are more likely to perceive that science prioritises developing defence and military technology development more than they desire. This is in line with existing research[42].

Discussion and recommendations

Our global, 67-country survey challenges concerns of a widespread lack of public trust in scientists. In most countries surveyed, scientists and scientific methods are trusted. Globally, scientists' perceived competence, benevolence, and integrity are high, but perceptions of scientists' openness are comparably lower. Therefore, scientists wishing to gain more public trust could work on being more receptive to feedback, transparent about their funding and data sources, and invest more effort into the types of public communication desired by a large majority of the public. Since many people think that scientists do not pay much attention to other people's views, we recommend avoiding top-down communication but encouraging public participation in genuine dialogue, in which scientists seek to consider the insights and needs of other societal actors[43]. While our cross-sectional data cannot speak to the causality of these recommendations, they are supported by the extensive literature on the determinants of trust in scientists (see e.g., [25,29,44]).

We find considerable differences of trust and its dimensions between and within countries, which demonstrate the importance of using multidimensional trust measures in comparative survey research[25]. It should be noted that our study assessed trust in scientists without distinguishing between different fields. In some countries, trust may depend on the scientists' discipline and the potential impacts of science on public policy[45,46].

While we find that no country has low trust in scientists on average, lack of trust in scientists by even a small minority needs to be taken seriously, as it may affect considerations of scientific evidence in policymaking, as well as decisions by individuals that can affect society at large. Future research should investigate the size of these distrusting minorities across countries and their characteristics.

Not only how much trust but also its correlates, such as right-leaning political orientation, education, and religiosity, vary clearly across countries. This exemplifies the need for more international research that includes underrepresented countries and understudied subpopulations. Given these findings, we urge scholars to be cautious when generalising findings from Western or Anglophone countries.

In nearly all countries, a majority of people want scientists to take part in policymaking. Future global comparative research should analyse whether opinions differ depending on a scientist's expertise regarding a policy issue[47] and public support for the policy in question[48–50]. Future studies should also examine whether normative perceptions of science in policymaking shift when specific scientific disciplines or policy issues are mentioned in real-world settings.

A majority of the public want scientists to prioritise research on public health and solving energy problems. Yet, most people believe that scientists are currently not tackling these issues sufficiently and think that defence and military technology are prioritised too much. As the perceived benefits of science are strongly correlated with trust in scientists, greater consideration of public research priorities in scientific research and public funding presents an important avenue to increase trust.

Newspapers, opinion pieces, and books[3] have spread narratives of low public trust in scientists. However, such claims remain largely unsubstantiated by empirical evidence. Our Many Labs study provides decision-makers, scientists, and the public with large-scale and open public opinion data on trust in scientists that can help these stakeholders maintain, and potentially increase, trust in scientists.

Methods

Overview

The data underlying the analyses were collected in a global, pre-tested, pre-registered, cross-sectional online survey (N = 71,417 participants in k = 67 countries) between November 2022 and August 2023 as part of the TISP Many Labs project ("Trust in Science and Science-Related Populism"). TISP is an international, multidisciplinary consortium of 239 researchers from 167 institutions across all continents. Researchers conducted surveys within 87 post-hoc weighted quota samples in 67 countries, using the same questionnaire translated into 37 languages. In the following, we will describe the procedures used to collect and analyse the data. Further details are available in the SI.

Institutional Review Board (IRB) Approval

Our questionnaire was considered exempt from full IRB review from the Harvard University-Area Committee on the Use of Human Subjects (protocol # IRB22-1046) in August 2022. A modified IRB application was submitted and considered exempt from full IRB review by the Harvard University-Area Committee on the Use of Human Subjects in November 2022 (protocol # IRB22-1046). All authors have informed themselves whether IRB approval was required from their institutions and obtained IRB approval if necessary.

Pre-test

A pre-test with *n* = 401 was conducted in the United States in October 2022 to validate the measures used in the questionnaire. Average completion time was 14 minutes. The questionnaire was slightly modified and two questions were added to the survey after the pre-test. Data from the pre-test was not included in the final analyses.

Questionnaire

In total, we measured 111 variables. No identifiable information was collected. The complete questionnaire (in English) is available at the Open Science Framework. The core questionnaire contained the components described in the following. Participants were presented with these components in the order in which they are explained below, but the order of questions and items of multi-item scales was randomised.

Consent form

Participants were asked to carefully read a consent form (approved under IRB protocol # IRB22-1046), which included some general information about the study and the anonymity of the data.

Demographic data - Part I

Participants who consented to participating in the study were then asked to indicate their gender (0 = Female, 1 = Male, 2 = Prefer to self-describe, 99 = prefer not to say), age, and level of education (1 = Did not attend school, 2 = Primary education, 3 = Secondary education (e.g., high school), 4 = Higher education (e.g., university degree or higher education diploma)).

Attention check I

The first attention check asked participants to write the number “213” into a comment box. Participants who failed the attention check were redirected to the end of the survey and were not remunerated. See SI for details on how many respondents failed this attention check in the overall sample and across countries.

Definition of science and scientists

Participants were presented with a definition of science and scientists: *When we say “science”, we mean the understanding we have about the world from observation and testing. When we say* *"scientists", we mean people who study nature, medicine, physics, economics, history, and psychology, among other things.* This definition was based on the Wellcome Global Monitor[7]. We added it because in-depth interviews conducted by the Monitor[7] suggested that including a definition would improve the reliability of cross-country comparisons.

Media use and engagement with science

Participants were asked how often they had come across information about science in ten different places (e.g., in news articles in printed newspapers or magazines) and how often they had engaged with science in four different ways (e.g., have conversations with friends) in the last 12 months (1 = *never*, 7 = *once or more per day*).

Open-ended questions

Participants were randomly assigned to answer one of two open-ended questions. One question asked participants to write who they think benefits the most from science and why, and the second question asked about their opinion on what makes a scientist trustworthy.

Perceived benefits of science

Participants were asked how much they perceived that scientific research benefits people like themselves in their country (1 = not at all, 5 = very strongly), and which geographic region benefits the most and the least from the work that scientists do (1 = Africa, 2 = Asia, 3 = Australia and Oceania, 4 = Europe, 5 = Latin America, 6 = North America).

Desired and perceived goals of science

Participants were asked what goals scientists should prioritize (four items, 1 = very low priority, 5 = very high priority), and how strongly they believed that science aims to tackle these goals (1 = not at all, 5 = very strongly).

Normative perceptions of science and society

Participants rated their agreement to six statements (e.g., scientists should be more involved in the policy-making process) (1 = strongly disagree, 5 = strongly agree). Five of these statements were taken from[40].

Willingness to be vulnerable to scientists

Participants' willingness to be vulnerable to scientific guidance was assessed with three items (1 = not at all, 5 = very strongly). Willingness to be vulnerable has been conceptualized as a behavioural trust measure as it reflects the ceding of authority[51].

Trust in scientists

Trust in scientists was assessed with 12 questions on four different dimensions of trustworthiness (i.e., competence, integrity, benevolence, openness) (1 = very [unqualified], 5 = very [qualified]), based on Besley et al.[51]. Psychometric analyses (e.g., scale reliability, exploratory and confirmatory factor analyses, measurement invariance tests) can be found in the SI.

Trust in scientific methods

Participants indicated their level of agreement on whether scientific research methods are the best way to find out if something is true or false (1 = strongly disagree, 5 = strongly agree).

General trust in scientists

A single question taken from Funk et al.[52] was used to measure participants' level of confidence in scientists (1 = no confidence at all, 5 = a great deal of confidence).

Outspokenness about science

Three items based on McKeever et al.[53] were used to measure outspokenness about science (e.g., I will share my opinions about scientific issues, regardless of what others think of them) (1 = strongly disagree, 5 = strongly agree).

Science-related populism

Science-related populist attitudes were assessed with the SciPop Scale[18], which comprises eight items (1 = strongly disagree, 5 = strongly agree).

Attention check II

In the second attention check, participants were instructed to select "strongly disagree" to a question. Participants who did not select "strongly disagree" were redirected to the of the survey and were not remunerated. See SI for details on how many respondents failed this attention check in the overall sample and across countries.

Social dominance orientation

To assess social dominance orientation, we used four items from Pratto et al.[54] (1 = extremely opposed, 10 = extremely favour).

Trust in climate scientists

Participants were asked how much they trust in scientists in their country who work on climate change (1 = not at all, 5 = very strongly).

Emotions about climate change

Nine different emotions (e.g., helpless) were assessed (1 = not at all, 5 = very strongly).

Perception of government action on climate change

Participants were asked about their perception of government action on climate change with seven items (1 = strongly disagree, 5 = strongly agree)[55].

Support for climate policies

Participants indicated their support for five policies (1 = not at all, 3 = very much; 4 = not applicable, which was recoded as missing).

Perceptions of extreme weather events

Participants indicated to what extent they believe that climate change has increased the impact of six weather events over the last decades (1 = not at all, 5 = very much). They also indicated whether they expected that climate change will increase the impact of these events in the future (1 = not at all, 5 = very much).

Demographic data - Part II

Participants indicated their household's yearly net income (in local currency), their political orientation on a spectrum from liberal to conservative (1 = strongly liberal, 5 = strongly conservative, 99 = I don't know) and on a spectrum from left-leaning to right-leaning (1 =

strongly left-leaning, 5 = strongly right-leaning, 99 = I don't know), their religiosity (1 = not religious at all, 5 = very strongly religious), and whether they live in a rural or urban area.

Collaborators were allowed to add questions at the end of the survey. Additional questions did not have to be approved by the lead author.

Translations

The original English survey was translated into the local language where necessary. Translations were done by native speakers who were familiar with the study background and, in many cases, had expertise on survey research and/or the conceptual underpinning of the measures. Minor linguistic adjustments were made to the survey if deemed necessary. Major changes in the wording of the original survey instrument had to be approved by the project lead. In total, the survey instrument was translated into 36 languages and dialects (see SI).

Preregistration

We submitted a comprehensive preregistration prior to the data collection to the Open Science Framework (OSF). It included detailed descriptions of our research questions and hypotheses, instruments, data collection, and analytical procedures. Please see SI for deviations from the preregistration.

Power analysis

To determine our minimum target sample size, we ran simulation-based power analyses using the R package simr (v1.0.7)[56], which is designed to conduct power analyses for generalized linear mixed models such as those we used in the main study (for detailed information see SI).

Procedure and final sample

Data were collected in surveys that used quotas for age (five bins: 20% 18-29 years, 20% 30-39 years, 20% 40-49 years, 20% 50-59 years, 20% 60 years and older) and gender (two bins: 50% male, 50% female). Participants had to be 18 years of age or older and provide informed consent to participate in the study. Data were collected between November 2022 and August 2023. See fig. S20 for an overview of survey periods across countries. The median completion time was 18 minutes.

The surveys were programmed in Qualtrics. Participants that completed the survey were remunerated according to the market research company's local rates. All data was collected via online surveys, except for the Democratic Republic of Congo, where participants were interviewed in face-to-face interviews and responses recorded in Qualtrics by the interviewers. Collaborators were instructed to work with the market research company Bilendi & Respondi, except for most African countries, where collaborators collected data with MSi. Convenience samples were not accepted.

A total of n = 71,629 individuals from 87 samples across k = 67 countries completed the survey (n = 71,417 after exclusion of duplicate respondents). See table S12 for an overview of all included countries and valid sample sizes across countries (i.e., after exclusion of duplicate respondents) and SI for detailed characteristics of the final sample and the representativeness of surveyed countries by income and regions (Tables S10-11).

Exclusion of non-completes and data quality test

We excluded all respondents who did not complete the survey, because they cancelled participation during the survey, were filtered as their gender × age quota was already full, or because they did not pass one of the two attention checks. 4.24% of respondents who reached the first attention check did not pass it ("Please write the number 213 into the comment box"). 24.42% of respondents who reached the second attention check did not pass it ("To show us that you are still paying attention, please select 'strongly disagree'"; see Table S14). We excluded all respondents who managed to complete the survey more than once despite countermeasures (e.g., IP address checks). In total, we excluded 212 duplicate respondents (Table S15).

Outlier value removal

We removed extreme outlier values for age and household income: Age outliers were defined as values smaller than 18 and bigger than 100. Income outliers were defined as values that were smaller than zero, equal to zero, or outside 5 × the interquartile range of the log-transformed income distribution within each country after exclusion of values smaller than zero or equal to zero. This led to the removal of the age values of 8 respondents and the removal of the income values of 2,454 respondents (1,362 respondents indicated income values equal to or smaller than 0; 1,092 respondents indicated income values outside 5 × the interquartile range of the log-transformed income distribution within each country after exclusion of values equal to or smaller than 0).

Post-hoc weighting

We computed post-stratification weights with the R package survey (v4.2-1)[57] to ensure that our models would estimate parameters that are representative for target populations in terms of gender, age, and education and have more precise standard errors (SEs). We used raking[58] to compute four kinds of weights, i.e. (A) post-stratification weights at country level, (B) sample size weights for each country, (C) post-stratification weights for the complete sample, and (D) rescaled post-stratification weights for multilevel analyses (see Table S16 and SI for more information).

Scale reliability

Scales were combined into indices and psychometric properties were assessed for all indices (see SI), including scale reliability (Cronbach's Alpha and Omega) and cross-country measurement invariances. Scale reliability was good for all scales (see Tables S17-18 and SI for details).

Analyses

Factors explaining trust in scientists

To investigate explanatory factors of trust in scientists and explore how their influence varies across countries, we ran a block-wise linear multilevel regression analysis with the R package lme4 (v1.1-34)[59]. The model included rescaled post-stratification weights[60].

All independent variables in the first and second block were scaled by country means and country SDs. All independent variables in the third block were scaled by grand means and grands SDs.

We first tried to fit a model with random intercepts and random effects for all independent variables. However, this model failed to converge with three negative eigenvalues and also had a singular fit, i.e., some random effects correlations were close to -1/+1, and some random effects variances were close to 0. This was likely because the random effects structure was too complex. Therefore, we simplified the model as follows: To test global effects of the

independent variables on trust in scientists, we fitted a model that contained random intercepts across countries (but no random effects) and inspected fixed effects estimates. To investigate how the influence of independent variables varies across countries, we fitted separate models, each of which contained random intercepts across countries and random effects for one particular independent variable. For example, we fitted a regression model with random intercepts across countries and random effects for political orientation (but no random effects for all other independent variables) to assess how the effect of political orientation on trust in scientists varies across countries. This entire procedure was completely in line with our preregistration.
Before we fitted the multilevel models, we confirmed that they would fit the data better than fixed-effects models. First, we inspected intra-class correlations for trust in scientists (ICC = 0.170). Second, we ran a likelihood-ratio tests: It showed that a random-intercept null model explaining trust in scientists had significantly better fit than a fixed-effects null model (χ^2 = 5,990.4, $p < .001$).

Moreover, we tested for multicollinearity of independent variables for the most complex model, i.e., after inclusion of all three blocks of independent variables (see table S24). All variance inflation factors (VIF) were well below even a very conservative threshold value of 4[61].

Normative perceptions of science in policymaking

To examine whether the public demands that scientists should take an active role in society and policymaking, we ran two analyses: First, we computed weighted probabilities of responses to the five items measuring these perceptions. This analysis provided estimates that are approximately representative with regards to gender, age, education, and country sample size. Second, we tested explanatory factors of normative perceptions of science in policy-making and society: We fitted a linear multilevel regression model with the R package lme4 (v1.1-34)[59], which explained the average agreement to the five individual items measuring those perceptions, included the rescaled post-stratification weights, and contained trust in scientists, science-related populist attitudes, and sociodemographic variables as independent variables, i.e. gender (binary; 1 = male), age (continuous), education (binary; 1 = tertiary education), annual household income in US dollar (continuous, log-transformed), place of residence (binary; 1 = urban), right-leaning political orientation (continuous), conservative political orientation (continuous), and religiosity. All independent variables were scaled by country means and country SDs.

We specified random intercepts across countries and random effects for trust in scientists and science-related populist attitudes. Significance tests of regression estimates relied on the Satterthwaite method[62]. Before we fitted the multilevel model, we confirmed that it would fit the data better than a fixed-effects model. First, we inspected the intra-class correlation of the normative perceptions index (ICC = 0.103). Second, we ran a likelihood-ratio test, which showed that a random-intercept null model had significantly better fit than a fixed-effects null model ($\chi^2 = 3756.0$, $p < .001$). Moreover, we tested for multicollinearity of independent variables (see table S25). All VIF values were well below even a very conservative threshold value of 4[61].

Perceived and desired priorities of scientific research

To explore desires that scientists should prioritize four specific goals (improving public health, solving energy problems, reducing poverty, developing defences and military technology) as well as perceptions that science actually tackles these goals, we ran three analyses: First, we inspected weighted mean values of responses to the four items measuring priority desires as well as weighted mean values of responses to the four items measuring perceptions that science actually devote efforts to the four goals.

Second, we ran weighted paired-samples *t*-tests to analyse if mean values of desires and perceptions differed significantly from each other. These analyses provided estimates that are approximately representative with regards to gender, age, education, and country sample size. Third, we tested explanatory factors of the discrepancy between the desire that scientists should prioritize the four goals and perceptions that science actually tackles them. To do so, we ran four block-wise linear multilevel regression analyses with the R package lme4 (v1.1-34)[59]. Each model explained the discrepancy between desires that scientists should prioritize one of the four goals and perceptions that science actually tackles them, with higher outcome variable values indicating that perceptions are more likely to exceed desires and lower outcome variable values indicating that perceptions are more likely to stay behind desires. All models included rescaled post-stratification weights[60].

For each of the four models, we specified random intercepts across countries and random effects for trust in scientists and science-related populist attitudes. Significance tests of regression estimates relied on the Satterthwaite method[62]. Before we fitted the multilevel models, we confirmed that they would fit the data better than fixed-effects models. First, we inspected the intra-class correlations of the four discrepancy scores (health: ICC = 0.113; energy: ICC = 0.080;

poverty: ICC = 0.135; defence: ICC = 0.108). Second, we ran likelihood-ratio tests, which showed that random-intercept null models had significantly better fit than fixed-effects null models (health: $\chi^2 = 3230.2$, $p < .001$; energy: $\chi^2 = 2255.0$, $p < .001$; poverty: $\chi^2 = 4811.4$, $p < .001$; defence: $\chi^2 = 3646.5$, $p < .001$). Moreover, we tested for multicollinearity of independent variables for the most complex models (see table S26). All VIF values were well below even a very conservative threshold value of 4[61].

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[i] The term "country" in this article refers to both sovereign states and territories not recognized as such.

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Visualization: VC, NM

Investigation: VC, NM, NIAA, SA, NAS, BA, IA, EA, AA, MA, MA, RMA, RA, TA, DA, FA, AB, RB, KB, EB, AYB, OB, KB, AB, OB, PCA, FC, ACV, TC, RKC, SC, GC, SDP, RD, SD, CDC, LDS, KD, SD, KMD, CD, DD, MD, UKHE, TWE, MF, AFB, ZF, XF, CF, CF, MF, SF, HF, JF, MF, SF, AG, PGV, MGV, WG, OG, OG, TG, JG, EG, MG, CGB, HG, DG, GMG, LG, HH, LNH, PH, ACHM, AH, GH, MH, MH, NI, MI, MTI, YJ, TJ, CAJ, SJ, DJ, MZK, JK, SK, JRK, MK, TKR, OK, HK, AK, LK, EK, LK, AK, LSK, PK, SK, TK, AK, EAK, CL, AL, AL, JBL, ZL, NL, AL, GL, AL, ALO, CLV, NML, CHL, KLT, MDM, SM, HM, JM, TLM, JM, PM, FMR, MM, IM, ZM, JN, EJN, JPN, FLNC, DN, TO, JPH, MP, PP, PPS, MPC, MP, YP, ARP, MP, KP, MP, JP, DP, AP, KP, EP, KP, DMQ, PR, AR, FGR, CRS, GR, JR, SR, JPR, RMR, IR, OS, RRS, PS, BS, AS, JSN, ES, NS, LS, BS, OS, SKS, GS, SS, BS, ES, MT, CTE, CTE, BT, AKT, RT, DTF, MT, OMU, ICU, JVN, CV, SV, IV, AVB, IW, IW, MW, TW, MW, FW, ADW, ZX, JX, EZP, AZ, RAZ

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