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Public Attitudes

Science and Technology: Public Perceptions, Awareness, and Information Sources

Supplemental Tables

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Table SPPS-1

Public assessment of benefits and harms of scientific research: Selected years, 1979–2018

(Standard error)

Year	Benefits of scientific research strongly or slightly outweigh harmful results	Benefits of scientific research are about equal to harmful results	Harmful results of scientific research strongly or slightly outweigh benefits	Don't know
1979 (*n* = 1,635)	1.3	0.9	0.9	0.7
1981 (*n* = 1,581)	1.4	1.0	1.2	0.3
1985 (*n* = 1,986)	1.4	0.6	1.2	0.9
1988 (*n* = 1,021)	1.7	0.9	1.3	1.0
1990 (*n* = 2,005)	1.3	0.7	1.0	0.9
1992 (*n* = 974)	1.7	0.9	1.4	0.8
1995 (*n* = 2,006)	1.3	0.5	0.9	1.0
1997 (*n* = 2,000)	1.4	0.7	1.1	0.9
1999 (*n* = 1,882)	1.4	0.6	1.2	0.8
2001 (*n* = 1,574)	1.5	1.1	1.0	0.7
2004 (*n* = 2,025)	1.0	0.4	0.8	0.6
2006 (*n* = 1,864)	1.9	1.3	0.8	1.0
2008 (*n* = 2,021)	1.6	1.3	0.7	0.7
2010 (*n* = 1,434)	2.3	1.6	1.2	1.1
2012 (*n* = 2,256)	1.4	1.1	0.8	0.7
2014 (*n* = 2,130)	1.4	1.5	0.7	0.7
2016 (*n* = 1,390)	1.8	1.1	0.8	0.9
2018 (*n* = 1,175)	1.8	1.2	1.1	0.8

n = number of survey responses.

Note(s):
Table displays data for years when the question was proffered. Responses are to the following: *People have frequently noted that scientific research has produced benefits and harmful results. Would you say that, on balance, the benefits of scientific research have outweighed the harmful results, or have the harmful results of scientific research been greater than its benefits?*

Source(s):
Data are sourced from multiple surveys that used either identical or similar survey items. National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1979–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–18).

Science and Engineering Indicators

Table SPPS-2

Public assessment of whether science and technology result in more opportunities for the next generation: Selected years, 1985–2018

(Percent)

Assessment	1985 (*n* = 1,986)	1992 (*n* = 1,995)	1995 (*n* = 2,006)	1997 (*n* = 2,000)	1999 (*n* = 1,882)	2001 (*n* = 1,574)	2004 (*n* = 2,025)	2006 (*n* = 1,864)	2008 (*n* = 2,021)	2010 (*n* = 1,434)	2012 (*n* = 2,256)	2014 (*n* = 2,130)	2016 (*n* = 1,390)	2018 (*n* = 1,175)
Strongly agree or agree	77	82	81	81	84	84	85	90	89	91	87	89	91	92
Strongly disagree or disagree	19	16	15	16	14	13	13	9	8	7	10	9	8	7
Don't know	4	3	3	3	3	2	2	2	3	2	3	1	1	1

n = number of survey responses.

Note(s):
Percentages may not add to 100% because of rounding. See Table SPPS-5 for standard errors. Table displays data for years when the question was proffered. Responses are to the following: *Because of science and technology, there will be more opportunities for the next generation. Do you strongly agree, agree, disagree, or strongly disagree?*

Source(s):
Data are sourced from multiple surveys that used either identical or similar survey items. National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1985–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–18).

Science and Engineering Indicators

Table SPPS-3

Public opinion on whether the federal government should fund basic scientific research: Selected years, 1985–2018

(Percent)

Opinion	1985 (*n* = 1,986)	1988 (*n* = 2,041)	1990 (*n* = 2,005)	1992 (*n* = 1,995)	1995 (*n* = 2,006)	1997 (*n* = 2,000)	1999 (*n* = 1,882)	2001 (*n* = 1,574)	2004 (*n* = 2,025)	2006 (*n* = 1,864)	2008 (*n* = 2,021)	2010 (*n* = 1,434)	2012 (*n* = 2,256)	2014 (*n* = 2,130)	2016 (*n* = 1,390)	2018 (*n* = 1,175)
Strongly agree or agree	79	81	80	76	78	79	82	81	82	87	84	82	83	84	83	84
Strongly disagree or disagree	16	15	16	20	18	18	15	16	16	10	12	13	13	13	15	13
Don't know	5	4	4	3	3	3	3	4	1	3	4	4	4	2	2	3

n = number of survey responses.

Note(s):
Percentages may not add to 100% because of rounding. See Table SPPS-6 for standard errors. Table displays data for years when the question was proffered. Responses are to the following: *Even if it brings no immediate benefits, scientific research that advances the frontiers of knowledge is necessary and should be supported by the federal government. Do you strongly agree, agree, disagree, or strongly disagree?*

Source(s):
Data are sourced from multiple surveys that used either identical or similar survey items. National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1985–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–18).

Science and Engineering Indicators

Table SPPS-4

Public assessment of whether science makes life change too fast: Selected years, 1979–2018

(Percent)

Assessment	1979 (*n* = 1,635)	1983 (*n* = 1,615)	1985 (*n* = 1,986)	1988 (*n* = 2,041)	1990 (*n* = 2,005)	1992 (*n* = 1,995)	1995 (*n* = 2,006)	1997 (*n* = 2,000)	1999 (*n* = 1,882)	2001 (*n* = 1,574)	2004 (*n* = 2,025)	2006 (*n* = 1,864)	2008 (*n* = 2,021)	2010 (*n* = 1,434)	2012 (*n* = 2,256)	2014 (*n* = 2,130)	2016 (*n* = 1,390)	2018 (*n* = 1,175)
Strongly agree or agree	53	48	44	40	37	38	37	36	41	39	33	44	46	51	42	52	51	49
Strongly disagree or disagree	44	50	53	59	60	60	60	61	57	59	66	53	51	47	55	47	47	50
Don't know	3	2	3	2	3	2	3	3	2	3	2	3	3	2	3	2	2	2

n = number of survey responses.

Note(s):
Percentages may not add to 100% because of rounding. See Table SPPS-7 for standard errors. Table displays data for years when the question was proffered. Responses are to the following: *Science makes our way of life change too fast. Do you strongly agree, agree, disagree, or strongly disagree?*

Source(s):
Data are sourced from multiple surveys that used either identical or similar survey items. National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1979–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–18).

Science and Engineering Indicators

Table SPPS-5

Public assessment of whether science and technology result in more opportunities for the next generation: Selected years, 1985–2018

(Standard error)

Assessment	1985 (*n* = 1,986)	1992 (*n* = 1,995)	1995 (*n* = 2,006)	1997 (*n* = 2,000)	1999 (*n* = 1,882)	2001 (*n* = 1,574)	2004 (*n* = 2,025)	2006 (*n* = 1,864)	2008 (*n* = 2,021)	2010 (*n* = 1,434)	2012 (*n* = 2,256)	2014 (*n* = 2,130)	2016 (*n* = 1,390)	2018 (*n* = 1,175)
Strongly agree or agree	1.3	1.0	1.1	1.2	1.1	1.1	0.9	1.1	0.7	1.4	0.9	0.8	1.0	0.9
Strongly disagree or disagree	1.2	1.0	1.0	1.2	1.0	1.1	0.9	0.9	0.6	0.8	0.9	0.8	1.0	0.8
Don't know	0.6	0.4	0.5	0.5	0.5	0.4	0.3	0.5	0.5	0.9	0.4	0.3	0.2	0.4

n = number of survey responses.

Note(s):
Table displays data for years when the question was proffered. Responses are to the following: *Because of science and technology, there will be more opportunities for the next generation. Do you strongly agree, agree, disagree, or strongly disagree?*

Source(s):
Data are sourced from multiple surveys that used either identical or similar survey items. National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1985–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–18).

Science and Engineering Indicators

Table SPPS-6

Public opinion on whether the federal government should fund basic scientific research: Selected years, 1985–2018

(Standard error)

Opinion	1985 (*n* = 1,986)	1988 (*n* = 2,041)	1990 (*n* = 2,005)	1992 (*n* = 1,995)	1995 (*n* = 2,006)	1997 (*n* = 2,000)	1999 (*n* = 1,882)	2001 (*n* = 1,574)	2004 (*n* = 2,025)	2006 (*n* = 1,864)	2008 (*n* = 2,021)	2010 (*n* = 1,434)	2012 (*n* = 2,256)	2014 (*n* = 2,130)	2016 (*n* = 1,390)	2018 (*n* = 1,175)
Strongly agree or agree	1.2	1.2	1.1	1.1	1.1	1.3	1.2	1.2	1.0	0.9	1.2	1.3	1.0	1.1	1.1	1.2
Strongly disagree or disagree	1.1	1.1	1.0	1.1	1.1	1.2	1.1	1.1	0.9	0.8	0.9	0.9	1.0	1.0	1.0	1.2
Don't know	0.7	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.3	0.9	0.8	1.1	0.4	0.4	0.6	0.6

n = number of survey responses.

Note(s):
Table displays data for years when the question was proffered. Responses are to the following: *Even if it brings no immediate benefits, scientific research that advances the frontiers of knowledge is necessary and should be supported by the federal government. Do you strongly agree, agree, disagree, or strongly disagree?*

Source(s):
Data are sourced from multiple surveys that used either identical or similar survey items. National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1985–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–18).

Science and Engineering Indicators

Table SPPS-7

Public assessment of whether science makes life change too fast: Selected years, 1979–2018

(Standard error)

Assessment	1979 (*n* = 1,635)	1983 (*n* = 1,615)	1985 (*n* = 1,986)	1988 (*n* = 2,041)	1990 (*n* = 2,005)	1992 (*n* = 1,995)	1995 (*n* = 2,006)	1997 (*n* = 2,000)	1999 (*n* = 1,882)	2001 (*n* = 1,574)	2004 (*n* = 2,025)	2006 (*n* = 1,864)	2008 (*n* = 2,021)	2010 (*n* = 1,434)	2012 (*n* = 2,256)	2014 (*n* = 2,130)	2016 (*n* = 1,390)	2018 (*n* = 1,175)
Strongly agree or agree	1.4	1.5	1.4	1.4	1.4	1.3	1.3	1.4	1.4	1.5	1.2	1.7	1.7	1.7	1.6	1.4	1.5	1.9
Strongly disagree or disagree	1.4	1.5	1.4	1.4	1.4	1.3	1.3	1.4	1.4	1.6	1.2	1.9	1.8	1.9	1.5	1.3	1.5	1.9
Don't know	0.5	0.5	0.5	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.3	0.6	0.6	0.7	0.4	0.3	0.5	0.5

n = number of survey responses.

Note(s):
Table displays data for years when the question was proffered. Responses are to the following: *Science makes our way of life change too fast. Do you strongly agree, agree, disagree, or strongly disagree?*

Source(s):
Data are sourced from multiple surveys that used either identical or similar survey items. National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1979–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–18).

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Table SPPS-8

Trust in science, by country: 2018

(Standard error)

Country	A lot	Some	Not much	Not at all	Don't know or refused
Weighted percentage among all top 16 R&D countries (*n* = 18,688)	0.7	0.7	0.4	0.2	0.4
Belgium (*n* = 1,004)	1.7	1.7	0.7	0.1	0.5
Norway (*n* = 1,000)	1.9	1.9	0.7	0.1	0.5
Denmark (*n* = 1,000)	1.7	1.7	0.7	0.2	0.0
Finland (*n* = 1,000)	1.9	1.9	0.8	0.4	0.2
Germany (*n* = 1,000)	1.9	1.8	0.6	0.6	0.3
Netherlands (*n* = 1,001)	1.9	1.8	1.2	0.4	0.0
United States (*n* = 1,006)	2.0	1.9	0.8	0.6	1.1
Sweden (*n* = 1,000)	1.9	0.2	0.6	0.4	0.5
Austria (*n* = 1,000)	1.8	1.8	1.0	0.6	0.4
France (*n* = 1,000)	1.9	2.0	0.8	0.4	0.4
Israel (*n* = 1,010)	1.7	1.8	1.2	0.4	0.6
Switzerland (*n* = 1,000)	1.8	2.0	1.0	0.6	0.8
China (*n* = 3,649)	0.9	1.0	0.5	0.2	0.6
South Korea (*n* = 1,014)	1.5	1.7	0.9	0.3	0.5
Japan (*n* = 1,004)	1.5	1.8	0.9	0.3	0.9
Taiwan (*n* = 1,000)	1.2	1.9	1.1	0.5	1.5

n = number of survey responses.

Note(s):
Countries are those with top 16 gross domestic expenditures on R&D as a percentage of gross domestic product in 2017, listed in order of percentages that trust science "a lot" from highest to lowest. (See *Science and Engineering Indicators 2020* "[2020] Research and Development: U.S. Trends and International Comparisons" report: Table 4-5.) Responses are to the following: *In general, would you say that you trust science a lot, some, not much, or not at all?*

Source(s):
Gallup, Wellcome Global Monitor, 2019.

Science and Engineering Indicators

Table SPPS-9

Public perception of scientists: Selected years, 1983–2018

(Percent and mean)

Perception	1983 (*n* = 1,615)	1985 (*n* = 1,986)	1988 (*n* = 2,041)	1990 (*n* = 2,005)	1992 (*n* = 1,995)	1995 (*n* = 2,006)	1997 (*n* = 2,000)	1999 (*n* = 1,882)	2001 (*n* = 1,574)	2012 (*n* = 1,152)	2016 (*n* = 1,390)	2018 (*n* = 1,175)
Scientists work for the good of humanity												
Strongly agree	na	na	na	na	na	na	na	na	11	19	26	26
Agree	na	na	na	na	na	na	na	na	74	69	63	63
Disagree	na	na	na	na	na	na	na	na	9	6	8	7
Strongly disagree	na	na	na	na	na	na	na	na	1	1	1	1
Don't know	na	na	na	na	na	na	na	na	4	5	2	2
Mean	na	na	na	na	na	na	na	na	3.0	3.1	3.2	3.2
Scientists help to solve problems												
Strongly agree	na	na	na	na	na	na	na	na	17	21	28	27
Agree	na	na	na	na	na	na	na	na	79	74	66	66
Disagree	na	na	na	na	na	na	na	na	2	1	4	5
Strongly disagree	na	na	na	na	na	na	na	na	*	1	1	*
Don't know	na	na	na	na	na	na	na	na	1	3	2	1
Mean	na	na	na	na	na	na	na	na	3.1	3.2	3.2	3.2
Scientists want to make life better for the average person												
Strongly agree	na	4	5	6	10	7	11	8	11	14	24	22
Agree	na	76	74	74	66	68	69	75	78	72	64	67
Disagree	na	15	17	15	20	20	15	14	8	8	9	8
Strongly disagree	na	1	1	1	2	1	2	1	1	1	*	1
Don't know	na	4	3	4	2	4	4	2	3	5	2	2
Mean	na	2.9	2.9	2.9	2.9	2.8	2.9	2.9	3.0	3.0	3.1	3.1
Scientists are odd and peculiar												
Strongly agree	1	na	na	na	na	na	na	na	2	4	9	10
Agree	31	na	na	na	na	na	na	na	22	32	42	40
Disagree	59	na	na	na	na	na	na	na	63	51	37	39
Strongly disagree	4	na	na	na	na	na	na	na	8	6	7	7
Don't know	4	na	na	na	na	na	na	na	4	8	4	4
Mean	2.3	na	na	na	na	na	na	na	2.2	2.4	2.6	2.5

* = value < 0.5% responded. na = not applicable; question was not asked.

n = number of survey responses.

Note(s):
Mean score is based on a 4-point scale, where 4 equals "strongly agree" and 1 equals "strongly disagree." Percentages may not add to 100% because of rounding. See Table SPPS-10 for standard errors. Table displays data for years when questions were proffered. Responses are to the following: *Scientific researchers are dedicated people who work for the good of humanity*; *Scientists are helping to solve challenging problems*; *Most scientists want to work on things that will make life better for the average person*; and *Scientists are apt to be odd and peculiar people*.

Source(s):
Data are sourced from multiple surveys that used either identical or similar survey items. National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1983–2001); NORC at the University of Chicago, General Social Survey (2012–18).

Science and Engineering Indicators

Table SPPS-10

Public perception of scientists: Selected years, 1983–2018

(Standard error)

Perception	1983 (*n* = 1,615)	1985 (*n* = 1,986)	1988 (*n* = 2,041)	1990 (*n* = 2,005)	1992 (*n* = 1,995)	1995 (*n* = 2,006)	1997 (*n* = 2,000)	1999 (*n* = 1,882)	2001 (*n* = 1,574)	2012 (*n* = 1,152)	2016 (*n* = 1,390)	2018 (*n* = 1,175)
Scientists work for the good of humanity												
Strongly agree	na	na	na	na	na	na	na	na	1.0	1.7	1.5	1.7
Agree	na	na	na	na	na	na	na	na	1.3	1.9	1.5	1.9
Disagree	na	na	na	na	na	na	na	na	0.9	0.8	0.8	0.9
Strongly disagree	na	na	na	na	na	na	na	na	0.3	0.4	0.4	0.3
Don't know	na	na	na	na	na	na	na	na	0.6	0.9	0.5	0.5
Mean	na	na	na	na	na	na	na	na	0.02	0.02	0.02	0.02
Scientists help to solve problems												
Strongly agree	na	na	na	na	na	na	na	na	1.1	1.4	1.7	1.6
Agree	na	na	na	na	na	na	na	na	1.2	1.7	1.8	1.5
Disagree	na	na	na	na	na	na	na	na	0.5	0.4	0.6	0.7
Strongly disagree	na	na	na	na	na	na	na	na	*	0.4	0.2	*
Don't know	na	na	na	na	na	na	na	na	0.4	0.8	0.4	0.5
Mean	na	na	na	na	na	na	na	na	0.01	0.02	0.02	0.02
Scientists want to make life better for the average person												
Strongly agree	na	0.5	0.6	0.6	0.8	0.7	1.0	0.8	0.9	1.4	1.7	1.5
Agree	na	1.1	1.2	1.2	1.3	1.3	1.4	1.2	1.2	1.8	1.5	1.5
Disagree	na	1.0	1.0	1.0	1.1	1.1	1.0	1.0	0.8	1.0	0.9	1.0
Strongly disagree	na	0.2	0.2	0.3	0.3	0.3	0.6	0.3	0.3	0.5	*	0.3
Don't know	na	0.5	0.4	0.5	0.4	0.5	0.5	0.4	0.4	1.0	0.4	0.5
Mean	na	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02
Scientists are odd and peculiar												
Strongly agree	0.3	na	na	na	na	na	na	na	0.5	0.6	0.9	0.9
Agree	1.4	na	na	na	na	na	na	na	1.3	2.1	1.4	1.9
Disagree	1.5	na	na	na	na	na	na	na	1.5	1.9	1.5	1.8
Strongly disagree	0.6	na	na	na	na	na	na	na	0.8	0.9	0.8	0.9
Don't know	0.6	na	na	na	na	na	na	na	0.6	1.2	0.7	0.7
Mean	0.02	na	na	na	na	na	na	na	0.02	0.03	0.02	0.03

* = value < 0.5% responded. na = not applicable; question was not asked.

n = number of survey responses.

Note(s):
Mean score is based on a 4-point scale, where 4 equals "strongly agree" and 1 equals "strongly disagree." Table displays data for years when questions were proffered. Responses are to the following: *Scientific researchers are dedicated people who work for the good of humanity*; *Scientists are helping to solve challenging problems*; *Most scientists want to work on things that will make life better for the average person*; and *Scientists are apt to be odd and peculiar people*.

Source(s):
Data are sourced from multiple surveys that used either identical or similar survey items. National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1983–2001); NORC at the University of Chicago, General Social Survey (2012–18).

Science and Engineering Indicators

Table SPPS-11

Confidence in scientists to act in the best interests of the public, by demographic characteristics: 2020

(Standard error)

Characteristic	Level of confidence in scientists			
	A great deal	A fair amount	Not too much	None at all
All adults (*n* = 6,283)	1.0	1.1	0.8	0.4
Sex				
Male (*n* = 2,799)	1.5	1.6	1.1	0.6
Female (*n* = 3,435)	1.3	1.4	1.1	0.5
Race or ethnicity				
White (*n* = 4,311)	1.1	1.2	0.8	0.5
Black (*n* = 507)	3.1	3.3	3.1	1.1
Hispanic (*n* = 999)	3.0	3.3	2.3	0.9
Asian (*n* = 180)	5.4	5.4	2.7	0.3
Family income category[a]				
Upper income (*n* = 1,848)	1.8	1.8	1.1	0.4
Middle income (*n* = 2,925)	1.4	1.5	1.0	0.5
Lower income (*n* = 1,251)	2.1	2.3	1.8	0.8
Education				
Postgraduate (*n* = 1,714)	1.6	1.6	1.0	0.3
College graduate (*n* = 1,841)	1.6	1.6	0.9	0.3
Some college (*n* = 1,833)	1.7	1.8	1.1	0.7
High school or less (*n* = 884)	2.0	2.2	1.7	0.8

n = number of survey responses.

[a] Income tiers are based on 2019 family incomes that have been adjusted for household size and cost of living in respondents' geographic region. Middle income includes respondents whose family incomes are between two-thirds of and double the median adjusted family income among the panel of respondents. For a three-person household, upper income is approximately $116,801 and above, middle income is $38,900–$116,800, and lower income is less than $38,900.

Note(s):
Responses are to the following: *How much confidence, if any, do you have in [scientists] to act in the best interests of the public?*

Source(s):
Pew Research Center, American Trends Panel (2020), Wave 79, conducted 18–29 November 2020. Data provided to the authors by the center prior to public release.

Science and Engineering Indicators

Table SPPS-12

Answers to viruses factual knowledge question: Selected years, 1988–2018

(Standard error)

Question	1988 (*n* = 2,041)	1990 (*n* = 2,005)	1992 (*n* = 1,995)	1995 (*n* = 2,006)	1997 (*n* = 2,000)	1999 (*n* = 1,882)	2001 (*n* = 1,574)	2004 (*n* = 2,025)	2006 (*n* = 1,864)	2008 (*n* = 2,021)	2010 (*n* = 1,932)	2012 (*n* = 2,256)	2014 (*n* = 2,130)	2016 (*n* = 1,390)	2018 (*n* = 1,175)
Antibiotics kill viruses as well as bacteria (Correct answer: false)	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.3	1.7	1.6	1.9	1.5	1.5	1.8	2.2

n = number of survey responses.

Note(s):
Table displays data for years when the question was proffered.

Source(s):
Data are sourced from multiple surveys that used either identical or similar survey items. National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1988–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–18).

Science and Engineering Indicators

Table SPPS-13

COVID-19 vaccination status and intent to get COVID-19 vaccine, Household Pulse Survey: January 2021 and September 2021

(Standard error)

Characteristic	January 2021	September 2021
Received a COVID-19 vaccine[a] (January, *n* = 80,567; September, *n*= 63,536)		
Yes	0.2	0.3
Intent to get a COVID-19 vaccine among those who have not[b] (January, *n* = 65,539; September, *n* = 7,001)		
Definitely yes	0.4	0.7
Probably yes	0.3	0.7
Unsure	na	0.9
Probably no	0.3	0.8
Definitely no	0.2	1.1

na = not applicable; question was not asked.

n = number of survey responses.

[a] "Yes" indicates survey respondents who reported receiving at least one dose.
[b] "Unsure" response option unavailable in January data collection.

Note(s):
Survey population includes those aged 18 years or older. Responses are to the following:
- *Have you received a COVID-19 vaccine?* (January data collection)

- *Have you received at least one dose of a COVID-19 vaccine?* (September data collection)

- *Once a vaccine to prevent COVID-19 is available to you, would you…*
Definitely get a vaccine.
Probably get a vaccine.
Be unsure about getting a vaccine (response option unavailable in January data collection).
Probably NOT get a vaccine.
Definitely NOT get a vaccine.

Source(s):
U.S. Census Bureau, Household Pulse Survey, Phase 3, Week 23 (20 January–1 February 2021); and Phase 3.2, Week 37 (1–12 September 2021).

Science and Engineering Indicators

Table SPPS-14

Among those who have not received a COVID-19 vaccine, reasons for intending not to get a vaccine: January 2021 and September 2021

(Standard error)

Characteristic	January 2021	September 2021
Reasons why respondents probably or definitely do not intend to get a COVID-19 vaccine (January, *n* = 10,981; September, *n* = 4,341)		
Concerned about possible side effects	1.0	1.4
Plan to wait and see if it is safe and may get it later	0.8	1.4
Don't trust COVID-19 vaccines	0.8	1.3
Don't trust the government	1.0	1.4
Don't know if COVID-19 vaccine will work	0.6	na
Don't believe I need COVID-19 vaccine	0.7	1.4
Think other people need it more right now	0.7	na
Don't like vaccines	0.5	na
My doctor has not recommended it	0.5	0.8
Concerned about the cost of the COVID-19 vaccine	0.5	0.5
Don't know if a COVID-19 vaccine will protect me	na	1.2
Don't think COVID-19 is that big of a threat	na	1.1
It's hard for me to get a COVID-19 vaccine	na	0.6

na = not applicable; question was not asked.

n = number of survey responses.

Note(s):
Survey population includes those aged 18 years or older who reported not having received a COVID-19 vaccine and who responded that they probably or definitely did not intend to get a COVID-19 vaccine. Responses are to the following: *Which of the following, if any, are reasons that you [only probably will/probably won't/definitely won't/are unsure about whether to] [get a COVID-19 vaccine/won't receive all required doses of a COVID-19 vaccine]? (Select all that apply).*

Source(s):
U.S. Census Bureau, Household Pulse Survey, Phase 3, Week 23 (20 January–1 February 2021), and Phase 3.2, Week 37 (1–12 September 2021).

Science and Engineering Indicators

Table SPPS-15

Perceived knowledge about science, by country: 2018

(Standard error)

Country	A lot	Some	Not much	Nothing at all	Don't know or refused
Weighted percentage among all top 16 R&D countries (*n* = 18,688)	0.3	0.7	0.7	0.5	0.3
United States (*n* = 1,006)	1.5	2.0	1.6	1.0	0.2
Denmark (*n* = 1,000)	1.4	1.7	1.4	0.8	0.0
Norway (*n* = 1,000)	1.4	1.9	1.7	0.6	0.1
Belgium (*n* = 1,004)	1.3	1.8	1.5	1.0	0.2
Germany (*n* = 1,000)	1.3	1.9	1.6	0.8	0.3
France (*n* = 1,000)	1.4	2.0	1.7	1.0	0.0
Netherlands (*n* = 1,001)	1.2	1.9	1.8	1.2	0.2
Israel (*n* = 1,010)	1.2	1.7	1.8	1.1	0.4
Sweden (*n* = 1,000)	1.1	1.9	1.7	0.9	0.3
Austria (*n* = 1,000)	1.1	1.8	1.8	0.9	0.0
Switzerland (*n* = 1,000)	1.1	2.0	1.8	0.8	0.4
Finland (*n* = 1,000)	1.3	2.0	1.8	0.8	0.0
South Korea (*n* = 1,014)	0.8	1.8	1.8	1.0	0.2
Taiwan (*n* = 1,000)	0.6	1.8	1.9	1.4	0.5
Japan (*n* = 1,004)	0.6	1.7	1.9	1.5	0.2
China (*n* = 3,649)	0.3	0.8	1.0	0.7	0.4

n = number of survey responses.

Note(s):
Countries are those with top 16 gross domestic expenditures on R&D as a percentage of gross domestic product in 2017, listed in order of percentages that perceive knowing "a lot" about science from highest to lowest. (See *Science and Engineering Indicators 2020* "[2020] Research and Development: U.S. Trends and International Comparisons" report: Table 4-5.) Responses are to the following: *How much do you, personally, know about science? Do you know a lot, some, not much, or nothing at all?*

Source(s):
Gallup, Wellcome Global Monitor, 2019.

Science and Engineering Indicators

Table SPPS-16

Americans' understanding of the scientific method: 2020

(Standard error)

Indicator of scientific method understanding	Total
Understanding that science is iterative (*n* = 12,648)	
Believe the scientific method produces findings meant to be continually tested and updated over time	0.7
Believe the scientific method identifies unchanging core principles and truths[a]	0.7
Understanding that science yields accurate results[b] (*n* = 12,648)	
Believe the scientific method generally produces accurate conclusions	0.7
Believe the scientific method can be used to produce any conclusion the researcher wants	0.7
Understanding of the use of control groups in a hypothetical scientific study about the effectiveness of a medication (*n* = 12,648)	
Create a control group that does not receive the medication	0.8
Other responses[a]	0.8
Understanding what a hypothesis is (*n* = 12,648)	
Selected "hypothesis" as answer	0.7
Selected answer other than "hypothesis"	0.7

n = number of survey responses.

[a] Includes "not sure" responses and refusals.
[b] Refusals are not shown.

Note(s):
Responses are to the following:
- Based on what you have heard or read, which of the following statements best describes the scientific method?
The scientific method produces findings meant to be continually tested and updated over time.
The scientific method identifies unchanging core principles and truths.
Not sure

- Which of the following best describes what you think about the scientific method?
The scientific method generally produces accurate conclusions.
The scientific method can be used to produce any conclusion the research wants.

- A scientist is conducting a study to determine how well a new medication treats ear infections. The scientist tells the participants to put 10 drops in their infected ear each day. After 2 weeks, all participants' ear infections had healed. Which of the following changes to the design of this study would most improve the ability to test if the new medication effectively treats ear infections?
Create a second group of participants with ear infections who do not use any ear drops.
Create a second group of participants with ear infections who use 15 drops a day.
Have participants use ear drops for only 1 week.
Have participants put ear drops in both their infected ear and healthy ear.
Not sure

- The time a computer takes to start has increased dramatically. One possible explanation for this is that the computer is running out of memory. This explanation is a scientific…
Hypothesis
Conclusion
Experiment
Observation
Not sure

Source(s):
Pew Research Center, American Trends Panel (2020), Wave 79, conducted 18–29 November 2020. Data provided to the authors by the center prior to public release.

Science and Engineering Indicators

Table SPPS-17

Confidence in scientists to act in the best interests of the public, by understanding of the scientific method: 2020

(Standard error)

Perception of the scientific method		Level of confidence in scientists			
		A great deal	A fair amount	Not too much	None at all
All respondents (*n* = 6,283)		1.0	1.1	0.8	0.4
Perception that science is iterative	Believe the scientific method produces findings meant to be continually tested and updated over time (*n* = 4,669)	1.2	1.2	0.8	0.3
	Believe the scientific method identifies unchanging core principles and truths[a] (*n* = 1,614)	1.8	2.0	1.6	0.9
Perception that science yields accurate results	Believe the scientific method generally produces accurate conclusions (*n* = 4,658)	1.2	1.2	0.8	0.2
	Believe the scientific method can be used to produce any conclusion the researcher wants (*n* = 1,511)	1.5	2.1	1.8	1.1

n = number of survey responses.

[a] Includes "not sure" responses and refusals.

Note(s):
Responses are to the following:
- How much confidence, if any, do you have in [scientists] to act in the best interests of the public?

- Based on what you have heard or read, which of the following statements best describes the scientific method?
The scientific method produces findings meant to be continually tested and updated over time.
The scientific method identifies unchanging core principles and truths.
Not sure

- Which of the following best describes what you think about the scientific method?
The scientific method generally produces accurate conclusions.
The scientific method can be used to produce any conclusion the research wants.

Source(s):
Pew Research Center, American Trends Panel (2020), Wave 79, conducted 18–29 November 2020. Data provided to the authors by the center prior to public release.

Science and Engineering Indicators

Table SPPS-18

Confidence in medical scientists to act in the best interests of the public, by understanding of the scientific method: 2020

(Standard error)

Perception of the scientific method		Level of confidence in medical scientists			
		A great deal	A fair amount	Not too much	None at all
All respondents (*n* = 6,283)		1.0	1.1	0.8	0.4
Perception that science is iterative	Believe the scientific method produces findings meant to be continually tested and updated over time (*n* = 4,669)	1.2	1.2	0.8	0.3
	Believe the scientific method identifies unchanging core principles and truths[a] (*n* = 1,614)	1.7	2.0	1.7	1.0
Perception that science yields accurate results	Believe the scientific method generally produces accurate conclusions (*n* = 4,658)	1.3	1.3	0.7	0.3
	Believe the scientific method can be used to produce any conclusion the researcher wants (*n* = 1,511)	1.5	2.0	1.8	1.0

n = number of survey responses.

[a] Includes "not sure" responses and refusals.

Note(s):
Responses are to the following:
- How much confidence, if any, do you have in [medical scientists] to act in the best interests of the public?

- Based on what you have heard or read, which of the following statements best describes the scientific method?
The scientific method produces findings meant to be continually tested and updated over time.
The scientific method identifies unchanging core principles and truths.
Not sure

- Which of the following best describes what you think about the scientific method?
The scientific method generally produces accurate conclusions.
The scientific method can be used to produce any conclusion the research wants.

Source(s):
Pew Research Center, American Trends Panel (2020), Wave 79, conducted 18–29 November 2020. Data provided to the authors by the center prior to public release.

Science and Engineering Indicators

Table SPPS-19

Interest in science, by country: 2018

(Percent)

Country	Tried to get information about science in the past 30 days	Tried to get information about medicine, disease, or health in the past 30 days	Would like to know more about science	Would like to know more about medicine, disease, or health
Weighted percentage among all top 16 R&D countries (*n* = 18,688)	36	50	68	77
Norway (*n* = 1,000)	59	64	75	75
Sweden (*n* = 1,000)	58	65	71	72
United States (*n* = 1,006)	56	72	67	79
Germany (*n* = 1,000)	55	63	50	57
Finland (*n* = 1,000)	55	65	67	74
Denmark (*n* = 1,000)	53	68	66	70
Switzerland (*n* = 1,000)	51	64	50	59
Belgium (*n* = 1,004)	48	59	57	70
France (*n* = 1,000)	46	60	61	65
Austria (*n* = 1,000)	46	66	53	57
Netherlands (*n* = 1,001)	42	60	48	62
Israel (*n* = 1,010)	40	51	64	70
Taiwan (*n* = 1,000)	36	62	43	74
South Korea (*n* = 1,014)	35	65	63	84
China (*n* = 3,649)	30	41	72	79
Japan (*n* = 1,004)	29	63	52	79

n = number of survey responses.

Note(s):
See Table SPPS-20 for standard errors. Countries are those with top 16 gross domestic expenditures on R&D as a percentage of gross domestic product in 2017, listed in order of percentages that tried to get information about science from highest to lowest. (See *Science and Engineering Indicators 2020* "[2020] Research and Development: U.S. Trends and International Comparisons" report: Table 4-5.) Responses are to the following: *Have you, personally, tried to get any information about science in the past 30 days? Have you, personally, tried to get any information about medicine, disease, or health in the past 30 days? Would you, personally, like to know more about science? Would you, personally, like to know more about medicine, disease, or health?*

Source(s):
Gallup, Wellcome Global Monitor, 2019.

Science and Engineering Indicators

Table SPPS-20

Interest in science, by country: 2018

(Standard error)

Country	Tried to get information about science in the past 30 days	Tried to get information about medicine, disease, or health in the past 30 days	Would like to know more about science	Would like to know more about medicine, disease, or health
Weighted percentage among all top 16 R&D countries (*n* = 18,688)	0.7	0.7	0.7	0.6
Norway (*n* = 1,000)	1.9	1.9	1.7	1.7
Sweden (*n* = 1,000)	1.9	1.8	1.7	1.7
United States (*n* = 1,006)	2.0	1.9	2.0	1.7
Germany (*n* = 1,000)	1.9	1.8	1.9	1.9
Finland (*n* = 1,000)	1.9	1.9	1.8	1.7
Denmark (*n* = 1,000)	1.7	1.6	1.7	1.6
Switzerland (*n* = 1,000)	2.0	1.9	2.0	1.9
Belgium (*n* = 1,004)	1.8	1.8	1.8	1.7
France (*n* = 1,000)	1.9	1.9	1.9	1.9
Austria (*n* = 1,000)	1.8	1.7	1.8	1.8
Netherlands (*n* = 1,001)	1.9	1.8	1.9	1.8
Israel (*n* = 1,010)	1.8	1.8	1.7	1.6
Taiwan (*n* = 1,000)	1.8	1.9	1.9	1.7
South Korea (*n* = 1,014)	1.7	1.7	1.7	1.3
China (*n* = 3,649)	0.9	1.0	0.9	0.8
Japan (*n* = 1,004)	1.7	1.9	2.0	1.6

n = number of survey responses.

Note(s):
Countries are those with top 16 gross domestic expenditures on R&D as a percentage of gross domestic product in 2017, listed in order of percentages that tried to get information about science from highest to lowest. (See *Science and Engineering Indicators 2020* "[2020] Research and Development: U.S. Trends and International Comparisons" report: Table 4-5.) Responses are to the following: *Have you, personally, tried to get any information about science in the past 30 days? Have you, personally, tried to get any information about medicine, disease, or health in the past 30 days? Would you, personally, like to know more about science? Would you, personally, like to know more about medicine, disease, or health?*

Source(s):
Gallup, Wellcome Global Monitor, 2019.

Science and Engineering Indicators

Table SPPS-21

How often U.S. adults thought about the impact of science on their everyday lives, before and during the COVID-19 pandemic: 2019 and 2020

(Standard error)

Frequency	Before the pandemic (2019) (*n* = 1,008)	During the pandemic (2020) (*n* = 1,010)
A lot	1.5	1.6
A little	1.6	1.6
Never	1.1	1.1

n = number of survey responses.

Note(s):
Responses are to the following:
- How much do you think about the impact of science in your everyday life? Select one.
A lot
A little
Never

Source(s):
3M, 2020 Pre-Pandemic Survey (2019), conducted August–October 2019, and 3M, 2020 Pandemic Pulse Survey (2020), conducted July–August 2020.

Science and Engineering Indicators

Table SPPS-22

Participation in science activities in the past 12 months, by family income and education: 2020

(Standard error)

Characteristic	Participated in a medical or clinical research study	Made observations or collected data samples as part of a science research project (such as observations about bird, animal, and plant life or weather, air, and water quality)	Contributed to a science-related online crowdsourcing activity (such as classifying stars and galaxies or identifying animals)	Helped a child with a science project, whether for school or for an outside-school activity	Participated in a maker movement or hack-a-thon event to develop new technologies, devices, or software	Donated blood	Donated money to support medical or science research
All adults (*n* = 10,957)	0.3	0.4	0.2	0.5	0.2	0.4	0.4
Family income category[a]							
Upper income (*n* = 4,781)	0.5	0.6	0.4	0.8	0.3	0.6	0.7
Middle income (*n* = 3,624)	0.5	0.4	0.3	1.0	0.3	0.7	0.8
Lower income (*n* = 2,085)	0.7	0.8	0.6	1.2	0.4	0.7	0.8
Education							
Postgraduate (*n* = 2,770)	0.7	0.8	0.5	1.0	0.4	0.7	1.0
College graduate (*n* = 3,176)	0.5	0.6	0.4	0.9	0.4	0.7	0.8
Some college (*n* = 3,294)	0.7	0.6	0.4	0.9	0.3	0.7	0.8
High school or less (*n* = 1,692)	0.6	0.7	0.5	1.1	0.4	0.7	0.8

n = number of survey responses.

[a] Income tiers are based on 2018 family incomes that have been adjusted for household size and cost of living in respondents' geographic region. Middle income includes respondents whose family incomes are between two-thirds of and double the median adjusted family income among the panel of respondents. For a three-person household, upper income is approximately $112,601 and above, middle income is $37,500–$112,600, and lower income is less than $37,500.

Note(s):
Responses are to the following:
- *Thinking about things you have done outside of work over the past 12 months, have you ever done the following?*
Participated in a medical or clinical research study.
Made observations or collected data samples as part of a science research project (such as observations about bird, animal, and plant life or weather, air, and water quality).
Contributed to a science-related online crowdsourcing activity (such as classifying stars and galaxies or identifying animals).
Helped a child with a science project, whether for school or for an outside-school activity.
Participated in a maker movement or hack-a-thon event to develop new technologies, devices, or software.
Donated blood.
Donated money to support medical or science research.

Source(s):
Pew Research Center, American Trends Panel (2020), Wave 67, conducted 29 April–5 May 2020.

Science and Engineering Indicators