

**2022 PEW RESEARCH CENTER'S AMERICAN TRENDS PANEL
WAVE 119 ARTIFICIAL INTELLIGENCE DECEMBER 2022
DECEMBER 12 - 18, 2022¹**

ASK ALL:

DES RISK

How well do each of the following phrases describe you? **[RANDOMIZE ITEMS]**

- | | |
|--------|----------------------------|
| COMF. | Comfortable taking risks |
| CREAT. | Creative thinker |
| NTECH. | Enjoy using new technology |

RESPONSE OPTIONS:

- | | |
|---|-----------------|
| 1 | Extremely well |
| 2 | Very well |
| 3 | Somewhat well |
| 4 | Not too well |
| 5 | Not at all well |

How well do each of the following phrases describe you?

Enjoy using new technology

- Extremely well
- Very well
- Somewhat well
- Not too well
- Not at all well

Comfortable taking risks

- Extremely well
- Very well
- Somewhat well
- Not too well
- Not at all well

Creative thinker

- Extremely well
- Very well
- Somewhat well
- Not too well
- Not at all well

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¹ Open-end responses are excluded from public datasets to protect the confidentiality of ATP panelists.

ASK ALL:

RISK2

Thinking about the decisions you make as you go through life, which better describes how you feel? **[RANDOMIZE RESPONSE OPTIONS]**

- 1 Taking risks usually pays off in the end
- 2 Taking risks too often leads to problems

Thinking about the decisions you make as you go through life, which better describes how you feel?

- Taking risks usually pays off in the end
 Taking risks too often leads to problems

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Artificial intelligence (AI) is designed to learn tasks that humans typically do, for instance recognizing speech or pictures.

AI_HEARD How much have you heard or read about AI?

- 1 A lot
- 2 A little
- 3 Nothing at all

Artificial intelligence (AI) is designed to learn tasks that humans typically do, for instance recognizing speech or pictures.

How much have you heard or read about AI?

- A lot
 A little
 Nothing at all

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CNCEXC

Overall, would you say the increased use of artificial intelligence (AI) in daily life makes you feel... **[RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]**

- 1 More excited than concerned
- 2 More concerned than excited
- 3 Equally concerned and excited **[ANCHOR]**

Overall, would you say the increased use of artificial intelligence (AI) in daily life makes you feel...

- More concerned than excited
- More excited than concerned
- Equally concerned and excited

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ASK ALL:

USEAI Just your impression, how often do you interact with artificial intelligence (AI)?

- 1 Almost constantly
- 2 Several times a day
- 3 About once a day
- 4 Several times a week
- 5 Less often

Just your impression, how often do you interact with artificial intelligence (AI)?

- Almost constantly
- Several times a day
- About once a day
- Several times a week
- Less often

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DISPLAY TO ALL:

We are interested in what people know off the top of their head about artificial intelligence (AI). You may find some of these questions easy and others difficult. (If you don't know the answer, select "Not sure.")

AIKNOW1 Thinking about customer service, which of the following uses artificial intelligence (AI)?
[RANDOMIZE RESPONSE OPTIONS 1-4]

- 1 A chatbot that immediately answers customer questions
- 2 An online survey sent to customers that allows them to provide feedback
- 3 A contact page with a form available to customers to provide feedback
- 4 A detailed Frequently Asked Questions webpage

[SPACE]

9 Not sure **[ANCHOR]**

We are interested in what people know off the top of their head about artificial intelligence (AI). You may find some of these questions easy and others difficult. (If you don't know the answer, select "Not sure.")

Thinking about customer service, which of the following uses artificial intelligence (AI)?

- A chatbot that immediately answers customer questions
- A contact page with a form available to customers to provide feedback
- An online survey sent to customers that allows them to provide feedback
- A detailed Frequently Asked Questions webpage
- Not sure

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RANDOMIZE AIKNOW2-AIKNOW7

ASK ALL:

AIKNOW2 When playing music, which of the following uses artificial intelligence (AI)?

[RANDOMIZE RESPONSE OPTIONS 1-4]

- 1 Using Bluetooth to connect to wireless speakers
- 2 A playlist recommendation
- 3 A wireless internet connection to stream the music
- 4 Shuffle play from a chosen playlist

[SPACE]

9 Not sure [ANCHOR]

When playing music, which of the following uses artificial intelligence (AI)?

- Using Bluetooth to connect to wireless speakers
- A wireless internet connection to stream the music
- Shuffle play from a chosen playlist
- A playlist recommendation
- Not sure

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ASK ALL:

AIKNOW3

When using email, which of the following uses artificial intelligence (AI)? [RANDOMIZE RESPONSE OPTIONS 1-4]

- 1 The email service marking an email as read after the user opens it
- 2 The email service allowing the user to schedule an email to send at a specific time in the future
- 3 The email service categorizing an email as spam
- 4 The email service sorting emails by time and date

[SPACE]

9 Not sure [ANCHOR]

When using email, which of the following uses artificial intelligence (AI)?

- The email service categorizing an email as spam
- The email service marking an email as read after the user opens it
- The email service allowing the user to schedule an email to send at a specific time in the future
- The email service sorting emails by time and date
- Not sure

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NO AIKNOW4

ASK ALL:

AIKNOW5

Thinking about health products, which of the following uses artificial intelligence (AI)?

[RANDOMIZE RESPONSE OPTIONS 1-4]

- 1 Wearable fitness trackers that analyze exercise and sleeping patterns
- 2 Thermometers that are placed under someone's tongue to detect a fever
- 3 At-home COVID-19 tests
- 4 Pulse oximeters that measure a person's oxygen level of the blood

[SPACE]

9 Not sure **[ANCHOR]**

Thinking about health products, which of the following uses artificial intelligence (AI)?

- Wearable fitness trackers that analyze exercise and sleeping patterns
- At-home COVID-19 tests
- Pulse oximeters that measure a person's oxygen level of the blood
- Thermometers that are placed under someone's tongue to detect a fever
- Not sure

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ASK ALL:

AIKNOW6

Thinking about online shopping, which of the following uses artificial intelligence (AI)?

[RANDOMIZE RESPONSE OPTIONS 1-4]

- 1 Storage of account information, such as shipping addresses
- 2 Records of previous purchases
- 3 Product recommendations based on previous purchases
- 4 Product reviews from other customers

[SPACE]

9 Not sure **[ANCHOR]**

Thinking about online shopping, which of the following uses artificial intelligence (AI)?

- Records of previous purchases
- Product reviews from other customers
- Product recommendations based on previous purchases
- Storage of account information, such as shipping addresses
- Not sure

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ASK ALL:

AIKNOW7 Thinking about devices in the home, which of the following uses artificial intelligence (AI)? **[RANDOMIZE RESPONSE OPTIONS 1-4]**

- 1 Programming a home thermostat to change temperatures at certain times
 - 2 A security camera that sends an alert when there is an unrecognized person at the door
 - 3 Programming a timer to control when lights in a home turn on and off
 - 4 An indicator light that turns red when a water filter needs to be replaced
- [SPACE]**
- 9 Not sure **[ANCHOR]**

Thinking about devices in the home, which of the following uses artificial intelligence (AI)?

- A security camera that sends an alert when there is an unrecognized person at the door
- Programming a home thermostat to change temperatures at certain times
- Programming a timer to control when lights in a home turn on and off
- An indicator light that turns red when a water filter needs to be replaced
- Not sure

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ASK ALL:

AIHCCOMF Thinking about the use of artificial intelligence (AI) in health and medicine to do things like diagnose disease and recommend treatments...

How would you feel if your health care provider relied on AI to do things like diagnose disease and recommend treatments for your medical care? **[RANDOMLY DISPLAY OPTIONS 1-4 OR 4-1]**

- 1 Very comfortable
- 2 Somewhat comfortable
- 3 Somewhat uncomfortable
- 4 Very uncomfortable

Thinking about the use of artificial intelligence (AI) in health and medicine to do things like diagnose disease and recommend treatments...

How would you feel if your health care provider relied on AI to do things like diagnose disease and recommend treatments for your medical care?

- Very uncomfortable
- Somewhat uncomfortable
- Somewhat comfortable
- Very comfortable

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ASK ALL:

AIHCTRT1 Do you think the use of artificial intelligence (AI) in health and medicine to do things like diagnose disease and recommend treatments would lead to... **[RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]**

- 1 Better health outcomes for patients
- 2 Worse health outcomes for patients
- 3 Not make much difference **[ANCHOR]**

Do you think the use of artificial intelligence (AI) in health and medicine to do things like diagnose disease and recommend treatments would lead to...

- Worse health outcomes for patients
- Better health outcomes for patients
- Not make much difference

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ASK ALL:

AIHCTRT2 Thinking about the use of artificial intelligence (AI) in health and medicine to do things like diagnose disease and recommend treatments, which of the following concerns you more?

Health care providers will... **[RANDOMIZE RESPONSE OPTIONS]**

- 1 Move too fast using this technology, before fully understanding the risks for patients
- 2 Move too slowly using this technology, missing opportunities to improve patients' health

Thinking about the use of artificial intelligence (AI) in health and medicine to do things like diagnose disease and recommend treatments, which of the following concerns you more?

Health care providers will...

- Move too slowly using this technology, missing opportunities to improve patients' health
- Move too fast using this technology, before fully understanding the risks for patients

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ASK ALL:

MEDBIAS

In health and medicine, how much of a problem is bias and unfair treatment based on patients' race or ethnicity?

- | | |
|---|-----------------|
| 1 | A major problem |
| 2 | A minor problem |
| 3 | Not a problem |

In health and medicine, how much of a problem is bias and unfair treatment based on patients' race or ethnicity?

- A major problem
- A minor problem
- Not a problem

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ASK ALL:

AIHCCHG

Do you think the use of artificial intelligence (AI) in health and medicine to do things like diagnose diseases and recommend treatments would make each of the following better, worse, or not make much difference? **[RANDOMIZE ITEMS]**

- | | |
|----------|---|
| QUAL. | The quality of health care for people like you |
| MIST. | The number of mistakes made by health care providers |
| REL. | Patients' personal relationship with their health care providers |
| RACETHN. | The job that health care providers do treating people of all races and ethnicities fairly |
| SECUR. | The security of patients' personal health records |

RESPONSE OPTIONS:

- | | |
|---|--|
| 1 | Better |
| 2 | Worse |
| 3 | Not make much difference [ANCHOR] |

Do you think the use of artificial intelligence (AI) in health and medicine to do things like diagnose diseases and recommend treatments would make each of the following better, worse, or not make much difference?

The security of patients' personal health records

- Better
- Worse
- Not make much difference

The job that health care providers do treating people of all races and ethnicities fairly

- Better
- Worse
- Not make much difference

The number of mistakes made by health care providers

- Better
- Worse
- Not make much difference

The quality of health care for people like you

- Better
- Worse
- Not make much difference

Patients' personal relationship with their health care providers

- Better
- Worse
- Not make much difference

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ASK ALL:

HCMEDBIAS Thinking about the potential for bias and unfair treatment in health and medicine based on a patient's race or ethnicity ...

If artificial intelligence (AI) is used more in health and medicine to do things like diagnose disease and recommend treatments, do you think the issue of bias and unfair treatment based on a patient's race or ethnicity would... **[RANDOMLY DISPLAY OPTIONS 1-5 OR 5-1]**

- 1 Definitely get better
- 2 Probably get better
- 3 Stay about the same
- 4 Probably get worse
- 5 Definitely get worse

Thinking about the potential for bias and unfair treatment in health and medicine based on a patient's race or ethnicity...

If artificial intelligence (AI) is used more in health and medicine to do things like diagnose disease and recommend treatments, do you think the issue of bias and unfair treatment based on a patient's race or ethnicity would...

- Definitely get worse
- Probably get worse
- Stay about the same
- Probably get better
- Definitely get better

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ASK IF BETTER AND FORM 2 (HCMEDBIAS=1,2 AND XFORM=2):

BIASBETR What's a reason you think the issue of bias and unfair treatment based on a patient's race or ethnicity would get better with the use of artificial intelligence (AI) in health and medicine?

[OPEN END; TEXT BOX]

ASK IF WORSE AND FORM 2 (HCMEDBIAS=4,5 AND XFORM=2):

BIASWORS What's a reason you think the issue of bias and unfair treatment based on a patient's race or ethnicity would get worse with the use of artificial intelligence (AI) in health and medicine?

[OPEN END; TEXT BOX]

ASK IF STAY ABOUT THE SAME AND FORM 2 (HCMEDBIAS=3 AND XFORM=2)

BIASSAME What's a reason you think the issue of bias and unfair treatment based on a patient's race or ethnicity would stay about the same with the use of artificial intelligence (AI) in health and medicine?

[OPEN END; TEXT BOX]

What's a reason you think the issue of bias and unfair treatment based on a patient's race or ethnicity would get better with the use of artificial intelligence (AI) in health and medicine?

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What's a reason you think the issue of bias and unfair treatment based on a patient's race or ethnicity would get worse with the use of artificial intelligence (AI) in health and medicine?

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What's a reason you think the issue of bias and unfair treatment based on a patient's race or ethnicity would stay about the same with the use of artificial intelligence (AI) in health and medicine?

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[RANDOMIZE ORDER OF BLOCK 1 AND BLOCK 2]

BLOCK 1

DISPLAY TO FORM 1:

Artificial intelligence (AI) can be used to review large numbers of images of people's skin with and without skin cancer and learn to identify patterns; it is designed to detect skin cancer in patients.

ASK FORM 1 ONLY (XFORM=1):

SCDETECT1 How much have you heard or read about AI designed to detect skin cancer?

- 1 A lot
- 2 A little
- 3 Nothing at all

Artificial intelligence (AI) can be used to review large numbers of images of people's skin with and without skin cancer and learn to identify patterns; it is designed to detect skin cancer in patients.

How much have you heard or read about AI designed to detect skin cancer?

- A lot
- A little
- Nothing at all

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ASK FORM 1 ONLY (XFORM=1):

SCDETECT2 How much of an advance for medical care is artificial intelligence (AI) that can detect skin cancer?

- 1 A major advance
- 2 A minor advance
- 3 Not an advance
- [SPACE]**
- 9 Not sure

How much of an advance for medical care is artificial intelligence (AI) that can detect skin cancer?

- A major advance
- A minor advance
- Not an advance
- Not sure

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ASK FORM 1 ONLY (XFORM=1):

SCDETECT3 Would you personally want artificial intelligence (AI) to be used in your screening for skin cancer, if you were getting screened? **[RANDOMLY DISPLAY OPTIONS 1-4 OR 4-1]**

- 1 Definitely want
- 2 Probably want
- 3 Probably NOT want
- 4 Definitely NOT want

Would you personally want artificial intelligence (AI) to be used in your screening for skin cancer, if you were getting screened?

- Definitely want
- Probably want
- Probably NOT want
- Definitely NOT want

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ASK FORM 1 ONLY (XFORM=1):

SCDETECT4 Do you think artificial intelligence (AI) would make skin cancer diagnoses...
[RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

- 1 More accurate
- 2 Less accurate
- 3 Not make much difference **[ANCHOR]**

Do you think artificial intelligence (AI) would make skin cancer diagnoses...

- Less accurate
- More accurate
- Not make much difference

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[RANDOMIZE ORDER OF BLOCK 1 AND BLOCK 2]

BLOCK 2

DISPLAY FOR FORM 1:

There are artificial intelligence (AI) chatbots in which people text AI programs about their feelings or concerns and the chatbot responds, without the involvement of a human. These chatbots are designed to support a person's mental health.

ASK FORM 1 ONLY (XFORM=1):

AIMH1 How much have you heard or read about AI chatbots designed to support mental health?

- 1 A lot
- 2 A little
- 3 Nothing at all

There are artificial intelligence (AI) chatbots in which people text AI programs about their feelings or concerns and the chatbot responds, without the involvement of a human. These chatbots are designed to support a person's mental health.

How much have you heard or read about AI chatbots designed to support mental health?

- A lot
- A little
- Nothing at all

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ASK FORM 1 ONLY (XFORM=1):

AIMH2 How much of an advance for mental health support are artificial intelligence (AI) chatbots?

- 1 A major advance
- 2 A minor advance
- 3 Not an advance

[SPACE]

- 9 Not sure

How much of an advance for mental health support are artificial intelligence (AI) chatbots?

- A major advance
- A minor advance
- Not an advance
- Not sure

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ASK FORM 1 ONLY (XFORM=1):

AIMH3 Would you personally want to use an artificial intelligence (AI) chatbot, if you were seeking mental health support? **[RANDOMLY DISPLAY OPTIONS 1-4 OR 4-1]**

- 1 Definitely want
- 2 Probably want
- 3 Probably NOT want
- 4 Definitely NOT want

Would you personally want to use an artificial intelligence (AI) chatbot, if you were seeking mental health support?

- Definitely NOT want
- Probably NOT want
- Probably want
- Definitely want

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ASK FORM 1 ONLY (XFORM=1):

AIMH5 Do you think artificial intelligence (AI) chatbots that can provide mental health support should be...**[RANDOMIZE RESPONSE OPTIONS 1-2 WITH OPTION 3 ALWAYS LAST]**

- 1 Only used by people that are also seeing a human therapist
- 2 Used by people regardless of whether they are also seeing a human therapist
[SPACE]
- 3 These should not be available to people at all **[ANCHOR]**

Do you think artificial intelligence (AI) chatbots that can provide mental health support should be...

- Used by people regardless of whether they are also seeing a human therapist
- Only used by people that are also seeing a human therapist
- These should not be available to people at all

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[RANDOMIZE ORDER OF BLOCK 3 AND BLOCK 4]**BLOCK 3****DISPLAY TO FORM 2:**

Artificial intelligence (AI) can be used to help decide the amount of pain medication patients get following a major surgery. These programs are designed to limit the abuse of pain medications.

ASK FORM 2 ONLY (XFORM=2):

AIPAIN1 How much have you heard or read about using AI to help decide the amount of pain medication patients get?

- 1 A lot
- 2 A little
- 3 Nothing at all

Artificial intelligence (AI) can be used to help decide the amount of pain medication patients get following a major surgery. These programs are designed to limit the abuse of pain medications.

How much have you heard or read about using AI to help decide the amount of pain medication patients get?

- A lot
- A little
- Nothing at all

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ASK FORM 2 ONLY (XFORM=2):

AIPAIN2 How much of an advance for medical care is artificial intelligence (AI) that can help decide the amount of pain medication patients get?

- 1 A major advance
- 2 A minor advance
- 3 Not an advance

[SPACE]

- 9 Not sure

How much of an advance for medical care is artificial intelligence (AI) that can help decide the amount of pain medication patients get?

- A major advance
- A minor advance
- Not an advance
- Not sure

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ASK FORM 2 ONLY (XFORM=2):

AIPAIN3 Would you personally want artificial intelligence (AI) to help decide the amount of pain medication you get, if you were getting surgery? **[RANDOMLY REVERSE SCALE FOR HALF]**

- 1 Definitely want
- 2 Probably want
- 3 Probably NOT want
- 4 Definitely NOT want

Would you personally want artificial intelligence (AI) to help decide the amount of pain medication you get, if you were getting surgery?

- Definitely NOT want
- Probably NOT want
- Probably want
- Definitely want

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ASK FORM 2 ONLY (XFORM=2):

AIPAIN4 Do you think artificial intelligence (AI) would make patients' treatment for pain...
[RANDOMIZE RESPONSE OPTIONS 1 AND 2, WITH OPTION 3 ALWAYS LAST]

- 1 Better
- 2 Worse
- 3 Not make much difference **[ANCHOR]**

Do you think artificial intelligence (AI) would make patients' treatment for pain...

- Better
- Worse
- Not make much difference

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[RANDOMIZE BLOCKS 3-4]**BLOCK 4****DISPLAY TO FORM 2:**

Robots with artificial intelligence (AI) are being developed that can be used to perform parts of surgery on their own. These robots are designed to make precise and steady movements during surgery.

ASK FORM 2 ONLY (XFORM=2):

SROBOT1 How much have you heard or read about surgical robots with AI?

- 1 A lot
- 2 A little
- 3 Nothing at all

Robots with artificial intelligence (AI) are being developed that can be used to perform parts of surgery on their own. These robots are designed to make precise and steady movements during surgery.

How much have you heard or read about surgical robots with AI?

- A lot
- A little
- Nothing at all

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ASK FORM 2 ONLY (XFORM=2):

SROBOT2 How much of an advance for medical care are surgical robots with artificial intelligence (AI) that can perform parts of surgery on their own?

- 1 A major advance
- 2 A minor advance
- 3 Not an advance
- [SPACE]**
- 9 Not sure

How much of an advance for medical care are surgical robots with artificial intelligence (AI) that can perform parts of surgery on their own?

- A major advance
- A minor advance
- Not an advance
- Not sure

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ASK FORM 2 ONLY (XFORM=2):

SROBOT3 Would you personally want surgical robots with artificial intelligence (AI) to be used, if you were getting surgery? **[RANDOMLY REVERSE SCALE FOR HALF]**

- 1 Definitely want
- 2 Probably want
- 3 Probably NOT want
- 4 Definitely NOT want

Would you personally want surgical robots with artificial intelligence (AI) to be used, if you were getting surgery?

- Definitely NOT want
- Probably NOT want
- Probably want
- Definitely want

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RANDOMIZE BLOCKS 5-7 (FORM 2 ONLY RECEIVES BLOCK 7)**BLOCK 5****DISPLAY TO FORM 1 (XFORM=1):**

Artificial intelligence (AI) can be used in biology to predict protein structures in cells. This can help develop new medical treatments.

ASK FORM 1 (XFORM=1):

AIPROT1 How much have you heard or read about using AI to predict protein structures in people's cells?

- 1 A lot
- 2 A little
- 3 Nothing at all

ASK FORM 1 (XFORM=1):

AIPROT2 How much of an advance for medical research is using artificial intelligence (AI) to predict protein structures in people's cells?

- 1 A major advance
- 2 A minor advance
- 3 Not an advance

[SPACE]

- 9 Not sure

Artificial intelligence (AI) can be used in biology to predict protein structures in cells. This can help develop new medical treatments.

How much have you heard or read about using AI to predict protein structures in people's cells?

- A lot
- A little
- Nothing at all

How much of an advance for medical research is using artificial intelligence (AI) to predict protein structures in people's cells?

- A major advance
- A minor advance
- Not an advance

- Not sure

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RANDOMIZE BLOCKS 5-7 (FORM 2 ONLY RECEIVES BLOCK 7)**BLOCK 6****DISPLAY TO FORM 1 (XFORM=1):**

Artificial intelligence (AI) can be used to recommend which varieties of plants to breed in order to produce crops that can withstand drought and heat.

ASK FORM 1 (XFORM=1):

AICROP1 How much have you heard or read about using AI to produce drought and heat-resistant crops?

- 1 A lot
- 2 A little
- 3 Nothing at all

ASK FORM 1 (XFORM=1):

AICROP2 How much of an advance for agriculture is using artificial intelligence (AI) to produce drought and heat-resistant crops?

- 1 A major advance
- 2 A minor advance
- 3 Not an advance

- [SPACE]**
- 9 Not sure

Artificial intelligence (AI) can be used to recommend which varieties of plants to breed in order to produce crops that can withstand drought and heat.

How much have you heard or read about using AI to produce drought and heat-resistant crops?

- A lot
- A little
- Nothing at all

How much of an advance for agriculture is using artificial intelligence (AI) to produce drought and heat-resistant crops?

- A major advance
- A minor advance
- Not an advance

- Not sure

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BLOCK 7**DISPLAY TO FORM 2 (XFORM=2):**

Artificial intelligence (AI) can be used to predict when and where extreme weather like heavy rainfall or storms is likely to occur.

ASK FORM 2 (XFORM=2):

AIEXT1 How much have you heard or read about using AI to predict when and where extreme weather is likely to occur?

- 1 A lot
- 2 A little
- 3 Nothing at all

ASK FORM 2 (XFORM=2):

AIEXT2 How much of an advance for weather forecasting is using artificial intelligence (AI) to predict when and where extreme weather is likely to occur?

- 1 A major advance
- 2 A minor advance
- 3 Not an advance

[SPACE]

- 9 Not sure

END BLOCK 7

Artificial intelligence (AI) can be used to predict when and where extreme weather like heavy rainfall or storms is likely to occur.

How much have you heard or read about using AI to predict when and where extreme weather is likely to occur?

- A lot
- A little
- Nothing at all

How much of an advance for weather forecasting is using artificial intelligence (AI) to predict when and where extreme weather is likely to occur?

- A major advance
- A minor advance
- Not an advance

- Not sure

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DISPLAY TO FORM 1 (XFORM=1):

Artificial intelligence (AI) can be used to write articles that report on news events and information.

ASK FORM 1 (XFORM=1):

AINEWS1 How much have you heard or read about using AI to write news articles?

- 1 A lot
- 2 A little
- 3 Nothing at all

ASK FORM 1 (XFORM=1):

AINEWS2 How much of an advance for the news media is using artificial intelligence (AI) to write news articles?

- 1 A major advance
- 2 A minor advance
- 3 Not an advance

- [SPACE]**
- 9 Not sure

Artificial intelligence (AI) can be used to write articles that report on news events and information.

How much have you heard or read about using AI to write news articles?

- A lot
- A little
- Nothing at all

How much of an advance for the news media is using artificial intelligence (AI) to write news articles?

- A major advance
- A minor advance
- Not an advance

- Not sure

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DISPLAY TO FORM 2 (XFORM=2):

Artificial intelligence (AI) can be used to produce visual images from keywords a person types into the system. It can be used to produce complex, artistic images.

ASK FORM 2 (XFORM=2):

AIIMAG1 How much have you heard or read about using AI to produce visual images from keywords?

- 1 A lot
- 2 A little
- 3 Nothing at all

ASK FORM 2 (XFORM=2):

AIIMAG2 How much of an advance for the visual arts is using artificial intelligence (AI) to produce visual images from keywords?

- 1 A major advance
- 2 A minor advance
- 3 Not an advance

[SPACE]

- 9 Not sure

Artificial intelligence (AI) can be used to produce visual images from keywords a person types into the system. It can be used to produce complex, artistic images.

How much have you heard or read about using AI to produce visual images from keywords?

- A lot
- A little
- Nothing at all

How much of an advance for the visual arts is using artificial intelligence (AI) to produce visual images from keywords?

- A major advance
- A minor advance
- Not an advance
- Not sure

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ASK ALL:**EMPLSIT**

What is your current work situation?

- 1 Work full time for pay
- 2 Work part time for pay
- 3 Not currently working for pay
- [SPACE]**
- 4 Unable to work due to a disability
- 5 Retired

What is your current work situation?

- Work full time for pay
- Work part time for pay
- Not currently working for pay
- Unable to work due to a disability
- Retired

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ASK ALL:**JOBAPPYR**

Have you applied for a job at any point in the past 12 months?

- 1 Yes, I have
- 2 No, I have not

Have you applied for a job at any point in the past 12 months?

- Yes, I have
- No, I have not

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ASK IF CURRENTLY WORKING FOR PAY (EMPLSIT=1-2):

INDUSTRY What industry or field do you currently work in?

- 1 Hospitality or service
- 2 Health care and social assistance
- 3 Manufacturing, mining, or construction
- 4 Retail and trade
- 5 Education
- 6 Banking, finance, accounting, real estate, or insurance
- 7 Transportation
- 8 Government, public administration or military
- 9 Information/Technology
- 10 Agriculture, forestry, fishing and hunting
- 11 Professional, scientific, and technical services
- 12 Arts, entertainment and recreation
- 13 Other **[TEXT BOX]**

Prompt if response 13 selected and no text entered: You did not specify a response for "Other". If you are sure you want to skip, click Next.

A You did not specify a response for "Other". If you are sure you want to skip, click Next.

What industry or field do you currently work in?

- Hospitality or service
- Health care and social assistance
- Manufacturing, mining, or construction
- Retail and trade
- Education
- Banking, finance, accounting, real estate, or insurance
- Transportation
- Government, public administration or military
- Information/Technology
- Agriculture, forestry, fishing and hunting
- Professional, scientific, and technical services
- Arts, entertainment and recreation
- Other

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DISPLAY TO ALL:

AIWRK1 Artificial intelligence (AI) can be used by employers to collect and analyze data, make decisions and complete tasks. Some employers are using AI in hiring, for worker evaluations or even to do jobs humans used to do.

Artificial intelligence (AI) can be used by employers to collect and analyze data, make decisions and complete tasks. Some employers are using AI in hiring, for worker evaluations or even to do jobs humans used to do.

[Previous](#)[Next](#)**ASK ALL:**

AIWRK2 Over the next 20 years, how much impact do you think the use of artificial intelligence (AI) in the workplace will have on... **[RANDOMIZE ITEMS]**

- a. Workers generally
- b. You, personally
- c. The U.S. economy

RESPONSE OPTIONS:

- 1 A major impact
- 2 A minor impact
- 3 No impact

[SPACE]

- 9 Not sure

Over the next 20 years, how much impact do you think the use of artificial intelligence (AI) in the workplace will have on...

The U.S. economy

- A major impact
- A minor impact
- No impact
- Not sure

Workers generally

- A major impact
- A minor impact
- No impact
- Not sure

You, personally

- A major impact
- A minor impact
- No impact
- Not sure

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ASK ALL:

AIWRK3

Thinking about the use of artificial intelligence (AI) in the workplace over the next 20 years, what do you think the outcome will be for... **[RANDOMIZE ITEMS IN SAME ORDER AS AIWRK2; RANDOMLY DISPLAY RESPONSE OPTIONS 1-3 OR 3-1 IN SAME ORDER FOR EACH ITEM, WITH OPTION 9 ALWAYS LAST]**

- a. Workers generally
- b. You, personally
- c. The U.S. economy

RESPONSE OPTIONS:

- 1 AI will help more than it hurts
 - 2 AI will equally help and hurt
 - 3 AI will hurt more than it helps
- [SPACE]**
- 9 Not sure **[ANCHOR]**

Thinking about the use of artificial intelligence (AI) in the workplace over the next 20 years, what do you think the outcome will be for...

The U.S. economy

- AI will hurt more than it helps
- AI will equally help and hurt
- AI will help more than it hurts
- Not sure

Workers generally

- AI will hurt more than it helps
- AI will equally help and hurt
- AI will help more than it hurts
- Not sure

You, personally

- AI will hurt more than it helps
- AI will equally help and hurt
- AI will help more than it hurts
- Not sure

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DISPLAY TO ALL:

Thinking now about how AI can be used in hiring...

ASK ALL:

AIWRKH1 How much have you heard or read about artificial intelligence (AI) being used by employers in the hiring process?

- | | |
|---|----------------|
| 1 | A lot |
| 2 | A little |
| 3 | Nothing at all |

Thinking now about how AI can be used in hiring...

How much have you heard or read about artificial intelligence (AI) being used by employers in the hiring process?

- A lot
- A little
- Nothing at all

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ASK ALL:

AIWRKH2 Would you favor or oppose employers' use of artificial intelligence (AI) for...

- a. Reviewing job applications
- b. Making a final hiring decision

RESPONSE OPTIONS:

- 1 Favor
- 2 Oppose
- [SPACE]**
- 9 Not sure

Would you favor or oppose employers' use of artificial intelligence (AI) for...

Reviewing job applications

- Favor
- Oppose
- Not sure

Making a final hiring decision

- Favor
- Oppose
- Not sure

[Previous](#)[Next](#)**ASK ALL:**AIWRKH3 Do you think artificial intelligence (AI) would do better, worse or about the same as humans at... **[RANDOMIZE ITEMS; RANDOMIZE RESPONSE OPTIONS 1 AND 2 IN SAME ORDER FOR EACH ITEM, WITH OPTIONS 3 AND 9 ALWAYS LAST]**

- a. Identifying job applicants who are well-qualified
- b. Treating all job applicants in the same way
- c. Seeing potential in job applicants who may not perfectly fit the job description
- d. Figuring out which job applicants would work well with their coworkers

RESPONSE OPTIONS:

- 1 AI would do a better job than humans
- 2 AI would do a worse job than humans
- 3 AI would do about the same job as humans **[ANCHOR]**
- [SPACE]**
- 9 Not sure **[ANCHOR]**

Do you think artificial intelligence (AI) would do better, worse or about the same as humans at...

Treating all job applicants in the same way

- AI would do a better job than humans
- AI would do a worse job than humans
- AI would do about the same job as humans
- Not sure

Seeing potential in job applicants who may not perfectly fit the job description

- AI would do a better job than humans
- AI would do a worse job than humans
- AI would do about the same job as humans
- Not sure

Figuring out which job applicants would work well with their coworkers

- AI would do a better job than humans
- AI would do a worse job than humans
- AI would do about the same job as humans
- Not sure

Identifying job applicants who are well-qualified

- AI would do a better job than humans
- AI would do a worse job than humans
- AI would do about the same job as humans
- Not sure

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ASK ALL:

AIWRKH4

If you were looking for work, would you want to apply for a job with an employer that uses artificial intelligence (AI) to help make hiring decisions?

- 1 Yes, I would
- 2 No, I would not

If you were looking for work, would you want to apply for a job with an employer that uses artificial intelligence (AI) to help make hiring decisions?

- Yes, I would
- No, I would not

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ASK IF WOULD WANT TO APPLY FOR A JOB WITH AN EMPLOYER THAT USES AI TO HELP MAKE HIRING DECISIONS (AIWRKH4=1):

AIWRKH5Y What is the main reason you would want to apply for a job with an employer that uses artificial intelligence (AI) to help make hiring decisions?

[OPEN-END]

What is the main reason you would want to apply for a job with an employer that uses artificial intelligence (AI) to help make hiring decisions?

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ASK IF WOULD NOT WANT TO APPLY FOR A JOB WITH AN EMPLOYER THAT USES AI TO HELP MAKE HIRING DECISIONS (AIWRKH4=2):

AIWRKH5N What is the main reason you would not want to apply for a job with an employer that uses artificial intelligence (AI) to help make hiring decisions?

[OPEN-END]

What is the main reason you would not want to apply for a job with an employer that uses artificial intelligence (AI) to help make hiring decisions?

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ASK ALL:

HIREBIAS1 In hiring generally, how much of a problem is bias and unfair treatment based on job applicants' race or ethnicity?

- 1 A major problem
- 2 A minor problem
- 3 Not a problem

In hiring generally, how much of a problem is bias and unfair treatment based on job applicants' race or ethnicity?

- A major problem
- A minor problem
- Not a problem

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ASK IF THINK BIAS AND UNFAIR TREATMENT IN HIRING IS A PROBLEM (HIREBIAS1=1,2):

HIREBIAS2 If artificial intelligence (AI) is used more by employers in the hiring process, do you think the issue of bias and unfair treatment based on job applicants' race or ethnicity would...

[RANDOMLY DISPLAY RESPONSE OPTIONS 1-5 OR 5-1]

- 1 Definitely get better
- 2 Probably get better
- 3 Stay about the same
- 4 Probably get worse
- 5 Definitely get worse

If artificial intelligence (AI) is used more by employers in the hiring process, do you think the issue of bias and unfair treatment based on job applicants' race or ethnicity would...

- Definitely get worse
- Probably get worse
- Stay about the same
- Probably get better
- Definitely get better

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DISPLAY TO ALL:

Thinking about another way employers may use artificial intelligence (AI)...

ASK ALL:

AIWRKM1 How much have you heard or read about employers' use of AI to collect and analyze information about how workers are doing their jobs?

- 1 A lot
- 2 A little
- 3 Nothing at all

Thinking about another way employers may use artificial intelligence (AI)...

How much have you heard or read about employers' use of AI to collect and analyze information about how workers are doing their jobs?

- A lot
- A little
- Nothing at all

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ASK ALL:

AIWRKM2 Do you favor or oppose employers' use of artificial intelligence (AI) to do each of the following? **[RANDOMIZE ITEMS]**

- a. Keeping track of when office workers are at their desks
- b. Recording exactly what people are doing on their work computers
- c. Tracking workers' movements while they work
- d. Monitoring workers' driving behavior as they make trips for the company
- e. Evaluating how well people are doing their jobs
- f. Analyzing how retail workers interact with customers

RESPONSE OPTIONS:

- 1 Favor
- 2 Oppose
- [SPACE]**
- 9 Not sure

Do you favor or oppose employers' use of artificial intelligence (AI) to do each of the following?

Recording exactly what people are doing on their work computers

- Favor
- Oppose
- Not sure

Keeping track of when office workers are at their desks

- Favor
- Oppose
- Not sure

Evaluating how well people are doing their jobs

- Favor
- Oppose
- Not sure

Analyzing how retail workers interact with customers

- Favor
- Oppose
- Not sure

Tracking workers' movements while they work

- Favor
- Oppose
- Not sure

Monitoring workers' driving behavior as they make trips for the company

- Favor
- Oppose
- Not sure

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ASK ALL:

AIWRKM3

Do you think each of the following would happen if employers used artificial intelligence (AI) to collect and analyze information about how workers are doing their jobs?

[RANDOMIZE ITEMS; RANDOMLY DISPLAY RESPONSE OPTIONS 1-4 OR 4-1 IN SAME ORDER FOR EACH ITEM, WITH OPTION 9 ALWAYS LAST]

- a. Workers would all be evaluated in the same way
- b. Information collected about workers would be misused
- c. Workplace security would be improved
- d. Inappropriate behavior in the workplace would decrease
- e. Companies' profits would increase
- f. Workers would feel like they were being inappropriately watched

RESPONSE OPTIONS:

- 1 Definitely would happen
- 2 Probably would happen
- 3 Probably would not happen
- 4 Definitely would not happen

[SPACE]

9 Not sure **[ANCHOR]**

Do you think each of the following would happen if employers used artificial intelligence (AI) to collect and analyze information about how workers are doing their jobs?

Inappropriate behavior in the workplace would decrease

- Definitely would happen
- Probably would happen
- Probably would not happen
- Definitely would not happen
- Not sure

Companies' profits would increase

- Definitely would happen
- Probably would happen
- Probably would not happen
- Definitely would not happen
- Not sure

Workers would all be evaluated in the same way

- Definitely would happen
- Probably would happen
- Probably would not happen
- Definitely would not happen
- Not sure

Workers would feel like they were being inappropriately watched

- Definitely would happen
- Probably would happen
- Probably would not happen
- Definitely would not happen
- Not sure

Information collected about workers would be misused

- Definitely would happen
- Probably would happen
- Probably would not happen
- Definitely would not happen
- Not sure

Workplace security would be improved

- Definitely would happen
- Probably would happen
- Probably would not happen
- Definitely would not happen
- Not sure

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ASK ALL:**AIWRKM4**

Do you favor or oppose employers using information collected and analyzed by artificial intelligence (AI) about how people are doing their jobs to decide whether someone...
[RANDOMIZE ITEMS]

- a. Gets a promotion
- b. Is fired

RESPONSE OPTIONS:

- 1 Favor
- 2 Oppose
- [SPACE]**
- 9 Not sure

Do you favor or oppose employers using information collected and analyzed by artificial intelligence (AI) about how people are doing their jobs to decide whether someone...

Gets a promotion

- Favor
- Oppose
- Not sure

Is fired

- Favor
- Oppose
- Not sure

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ASK ALL:

EVALBIAS1 In performance evaluations generally, how much of a problem is bias and unfair treatment based on workers' race or ethnicity?

- 1 A major problem
- 2 A minor problem
- 3 Not a problem

In performance evaluations generally, how much of a problem is bias and unfair treatment based on workers' race or ethnicity?

- A major problem
- A minor problem
- Not a problem

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ASK IF THINK BIAS AND UNFAIR TREATMENT IN PERFORMANCE EVALUATIONS IS A PROBLEM (EVALBIAS=1,2):

EVALBIAS2 If artificial intelligence (AI) is used more by employers in performance evaluations, do you think the issue of bias and unfair treatment based on workers' race or ethnicity would... **[RANDOMLY REVERSE SCALE FOR HALF]**

- 1 Definitely get better
- 2 Probably get better
- 3 Stay about the same
- 4 Probably get worse
- 5 Definitely get worse

If artificial intelligence (AI) is used more by employers in performance evaluations, do you think the issue of bias and unfair treatment based on workers' race or ethnicity would...

- Definitely get worse
- Probably get worse
- Stay about the same
- Probably get better
- Definitely get better

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ASK ALL:

FACERECWK1 The next questions are about facial recognition technology, which can identify someone by scanning their face in photos, videos or in real time.

How much have you heard or read about employers' use of facial recognition technology in the workplace?

- 1 A lot
- 2 A little
- 3 Nothing at all

The next questions are about facial recognition technology, which can identify someone by scanning their face in photos, videos or in real time.

How much have you heard or read about employers' use of facial recognition technology in the workplace?

- A lot
- A little
- Nothing at all

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ASK ALL:

FACERECWK2 Would you favor or oppose employers' use of facial recognition technology for each of the following purposes? **[RANDOMIZE ITEMS]**

- a. Automatically tracking the attendance of their employees
- b. Analyzing employees' facial expressions
- c. Tracking how often workers take breaks

RESPONSE OPTIONS:

- 1 Favor
- 2 Oppose
- [SPACE]**
- 9 Not sure

Would you favor or oppose employers' use of facial recognition technology for each of the following purposes?

Automatically tracking the attendance of their employees

- Favor
- Oppose
- Not sure

Analyzing employees' facial expressions

- Favor
- Oppose
- Not sure

Tracking how often workers take breaks

- Favor
- Oppose
- Not sure

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ASK ALL:

FACERECWK3 Do you think each of the following would happen due to employers' use of facial recognition technology in the workplace? The technology would... **[RANDOMIZE ITEMS; RANDOMLY DISPLAY OPTIONS 1-4 OR 4-1 IN SAME ORDER FOR EACH ITEM, WITH OPTION 9 ALWAYS LAST]**

- a. Misidentify a worker as someone they're not
- b. Recognize some skin tones better than others
- c. Misinterpret workers' facial expressions

RESPONSE OPTIONS:

- 1 Definitely would happen
- 2 Probably would happen
- 3 Probably would not happen
- 4 Definitely would not happen

[SPACE]**9 Not sure [ANCHOR]**

Do you think each of the following would happen due to employers' use of facial recognition technology in the workplace? The technology would...

Recognize some skin tones better than others

- Definitely would happen
- Probably would happen
- Probably would not happen
- Definitely would not happen

- Not sure

Misinterpret workers' facial expressions

- Definitely would happen
- Probably would happen
- Probably would not happen
- Definitely would not happen

- Not sure

Misidentify a worker as someone they're not

- Definitely would happen
- Probably would happen
- Probably would not happen
- Definitely would not happen

- Not sure

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DISPLAY TO ALL:

Just a few last questions ...

TWITTER1_MOD Do you have a Twitter account?²

- | | |
|---|-----|
| 1 | Yes |
| 2 | No |

² TWITTER1_MOD is not included in the W119 topline. For official estimates of Twitter usage in the U.S., please see estimates from the [National Public Opinion Reference Survey](#) (NPORS).

Just a few last questions...

Do you have a Twitter account?

- Yes
 No

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ASK IF TWITTER USER (TWITTER1_MOD=1):

TWITTER2 In many of our surveys, we ask about how people like you use social media. But there's a lot we cannot learn unless you allow us to connect information about your public Twitter behavior to your answers even if you never post anything.³

No matter how often you visit Twitter, would you be willing to share your Twitter handle to help us with this research?

- 1 Yes
2 No

This project will ONLY collect information that an ordinary user would see when they visit your profile (see here [POPUP] for more details). We will treat this data just like we treat your survey responses and will NEVER share anything that can be linked back to you.

How we will use your Twitter handle

If you provide us with your Twitter handle, we will only be able to collect what an ordinary user would see when visiting your profile. The specific information we will have access to depends on the privacy settings of your Twitter account.

If your account is set to PUBLIC, we will be able to see the accounts you follow; the accounts that follow you; the text of any tweets you have posted; and basic information in your profile, such as your description and the age of your account. We will NOT have access to any private messages you have sent or received.

If your account is set to PRIVATE, we will be able to see how many accounts you follow or how many times you have tweeted – but will NOT be able to see any private messages you have sent or received; the actual content of your tweets; or the names of the accounts you follow or that follow you.

We expect that this research will be concluded in approximately 18 months. At that point we will ask you again whether or not you would like to provide your handle. If you provided your Twitter handle to us previously, that is why you are seeing this question again.

If at any point you wish to opt out of research related to your Twitter account, contact info@americanresearchpanel.org. For more information about our privacy practices, please see our [Privacy Policy](#).

³ TWITTER2 has been removed from the dataset due to the sensitive nature of the question and the risk of identification.

In many of our surveys, we ask about how people like you use social media. But there's a lot we cannot learn unless you allow us to connect information about your public Twitter behavior to your answers even if you never post anything.

No matter how often you visit Twitter, would you be willing to share your Twitter handle to help us with this research?

- Yes
- No

This project will ONLY collect information that an ordinary user would see when they visit your profile (see [here](#) for more details). We will treat this data just like we treat your survey responses and will NEVER share anything that can be linked back to you.

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In many of our surveys, we ask about how people like you use social media. But there's a lot we cannot learn unless you allow us to connect information about your public Twitter behavior to your answers even if you never post anything.

No matter how often you visit Twitter, would you be willing to share your Twitter handle to help us with this research?

- Yes
- No

This project will ONLY collect information that an ordinary user would see when they visit your profile (see [here](#) for more details). We will treat this data just like we treat your survey responses and will NEVER share anything that can be linked back to you.

How we will use your Twitter handle

If you provide us with your Twitter handle, we will only be able to collect what an ordinary user would see when visiting your profile. The specific information we will have access to depends on the privacy settings of your Twitter account.

If your account is set to PUBLIC, we will be able to see the accounts you follow; the accounts that follow you; the text of any tweets you have posted; and basic information in your profile, such as your description and the age of your account. We will NOT have access to any private messages you have sent or received.

If your account is set to PRIVATE, we will be able to see how many accounts you follow or how many times you have tweeted – but will NOT be able to see any private messages you have sent or received; the actual content of your tweets; or the names of the accounts you follow or that follow you.

We expect that this research will be concluded in approximately 18 months. At that point we will ask you again whether or not you would like to provide your handle. If you provided your Twitter handle to us previously, that is why you are seeing this question again.

If at any point you wish to opt out of research related to your Twitter account, contact info@americanresearchpanel.org. For more information about our privacy practices, please see our Privacy Policy.

ASK IF CONSENT TO GIVE HANDLE (TWITTER2=1):

TWITTER3 Please list your Twitter handle in the box below. Your handle is the username you selected for your Twitter account. It is no more than 15 characters long and looks like @yourhandle.

[MEDIUM TEXT BOX WITH @ IN FRONT OF THE TEXT BOX]

[PROGRAMMING NOTE: Twitter handles in box: 1) cannot contain 'Twitter' or 'Admin', 2) Cannot be longer than 15 characters (do not display character limit on screen), 3) only alphanumeric characters (A-Z, 0-9) and underscores are allowed. Capitalization doesn't matter.]

Text for prompt when invalid response is entered: Answer is not valid. Your handle can only include alphanumeric characters (A-Z and 0-9) and underscores.

Answer Admin is not valid.

Please list your Twitter handle in the box below. Your handle is the username you selected for your Twitter account. It is no more than 15 characters long and looks like @yourhandle.

@ admin

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Answer Twitter is not valid.

Please list your Twitter handle in the box below. Your handle is the username you selected for your Twitter account. It is no more than 15 characters long and looks like @yourhandle.

@ twitter

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Answer is not valid. Your handle can only include alphanumeric characters (A-Z and 0-9) and underscores.

Please list your Twitter handle in the box below. Your handle is the username you selected for your Twitter account. It is no more than 15 characters long and looks like @yourhandle.

@ hhb%

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CODEBOOK FOR ATP SAMPLE VARIABLES TO BE USED IN SURVEY PROGRAMMING LOGIC**XFORM**

1 Form 1
2 Form 2

Note: Flag to identify form assignments.