Pew Research Center

More Than Half of U.S. Adults Trust Law Enforcement to Use Facial Recognition Responsibly

But the public is less accepting of facial recognition technology when used by advertisers or technology companies

BY *Aaron Smith*

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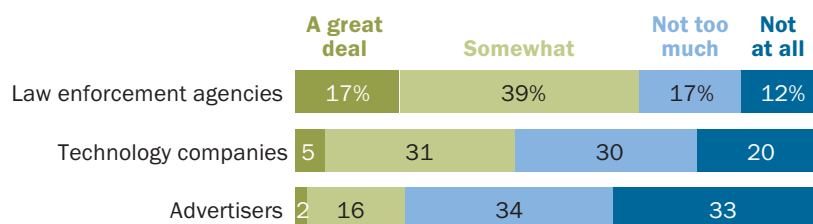
But the public is less accepting of facial recognition technology when used by advertisers and technology companies

The ability of governments and law enforcement agencies to monitor the public using facial recognition was once the province of dystopian science fiction. But modern technology is increasingly bringing versions of these scenarios to life. A recent investigation found that U.S. law enforcement agencies are using state Department of Motor Vehicles records to identify individual Americans without their consent, including those with no criminal record. And countries such as China have made facial recognition technology a cornerstone of their strategies to police the behaviors and activities of their publics.
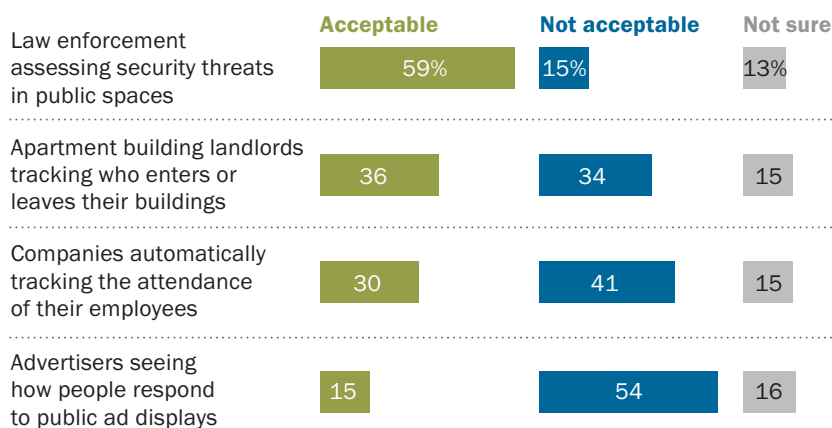
Despite these high-profile examples from fiction and reality, a new Pew Research Center survey finds that a majority of Americans (56%) trust law enforcement agencies to use these technologies responsibly. A similar share of the public

Majority of Americans trust law enforcement to use facial recognition responsibly, but public is less trusting of advertisers and technology companies

% of U.S. adults who say they trust the following groups _____ to use facial recognition technology responsibly

	A great deal	Somewhat	Not too much	Not at all
Law enforcement agencies	17%	39%	17%	12%
Technology companies	5	31	30	20
Advertisers	2	16	34	33

% of U.S. adults who say the use of facial recognition technology in the following situations is ...

	Acceptable	Not acceptable	Not sure
Law enforcement assessing security threats in public spaces	59%	15%	13%
Apartment building landlords tracking who enters or leaves their buildings	36	34	15
Companies automatically tracking the attendance of their employees	30	41	15
Advertisers seeing how people respond to public ad displays	15	54	16

Note: Results do not add to 100% because the 13% of U.S. adults who have not heard of facial recognition technology are not shown.
Source: Survey of U.S. adults conducted June 3-17, 2019.
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(59%) says it is acceptable for law enforcement to use facial recognition tools to assess security threats in public spaces.

At the same time, the survey finds that this relatively broad acceptance of facial recognition use by law enforcement does not necessarily apply to other entities that might use these technologies. Notably smaller shares of the public say they trust technology companies (36%) or advertisers (18%) to use facial recognition responsibly. And minorities of the public would find it acceptable for these tools to be used for purposes such as tracking who is entering or leaving apartment buildings (36%), monitoring the attendance of employees at a place of business (30%) or seeing how people respond to public advertising displays in real time (15%).

These attitudes also differ across demographic groups. For instance, a substantially smaller share of young adults think it is acceptable for law enforcement to use facial recognition to assess security threats in public spaces relative to older Americans. Similarly, smaller shares of black and Hispanic adults than whites think the use of facial recognition technology by law enforcement is acceptable, and the same is true of Democrats compared with Republicans.

These are among the main findings of a nationally representative survey of 4,272 U.S. adults conducted June 3-17, 2019.

About our machine vision research

The Center has used a process similar to facial recognition known as machine vision to conduct research on gender representations in online search results and news stories on social media (our machine vision model could estimate whether an image showed a man or a woman, but was not able to identify individual people).

This report on facial recognition is part of a broader examination of social and technical issues relating to machine vision and facial recognition technologies. The other two products in this series are:

- A data essay describing how the Center built a machine vision algorithm to identify gender in images collected from the web. This essay highlights the importance of using diverse training data in building these types of algorithms and shows how these systems can fail in ways that are both unpredictable and hard to explain.
- An interactive feature that provides a deeper understanding of the way our machine vision system makes decisions about gender in images. Cover up portions of a face to see whether it causes our deep learning algorithm to change its guess about the gender of the person in the image.

Most Americans have heard about facial recognition technology, with one-quarter having heard a lot about it

The American public has a broad awareness of automated facial recognition technologies that can identify someone based on a picture or video that includes their face. Most Americans – 86% in total – have heard at least something about facial recognition technology, with 25% saying they have heard a lot about these systems. Just 13% of the public has not heard anything about facial recognition.

Awareness of these systems is relatively widespread across a range of demographic groups, though there is modest variation in awareness based on factors such as educational attainment. Fully 95% of Americans with a college degree or higher have heard at least something about facial recognition technology, with 28% of college graduates saying they have heard a lot about it. But overall awareness falls to 79% (with 19% saying they have heard a lot) among those with a high school diploma or less. Awareness is also slightly higher among those with higher household incomes compared with those with lower incomes; among men relative to women; and among whites relative to blacks and Hispanics.

Notably, nearly identical shares of younger and older adults have heard of facial recognition technology – although younger adults are slightly more likely than older adults to indicate that they have heard a lot about it. (For details on awareness of facial recognition across demographic groups, see Appendix A.)

Most Americans aware of facial recognition

% of U.S. adults who have heard _____ about facial recognition technology

Nothing at all

13

A lot
25

A little
61
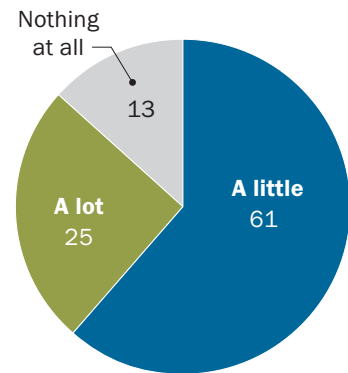
Note: Respondents who gave other answers are not shown.
Source: Survey of U.S. adults conducted June 3-17, 2019.
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Majority of Americans trust law enforcement to use facial recognition responsibly; people are less trusting of advertisers, tech companies

When asked about their confidence that different entities will use facial recognition tools responsibly, the public expresses much greater trust in law enforcement agencies than in advertisers or technology companies. A 56% majority of U.S. adults trust law enforcement agencies at least somewhat to use facial recognition technologies responsibly, with 17% indicating that they trust these agencies a great deal to use facial recognition.
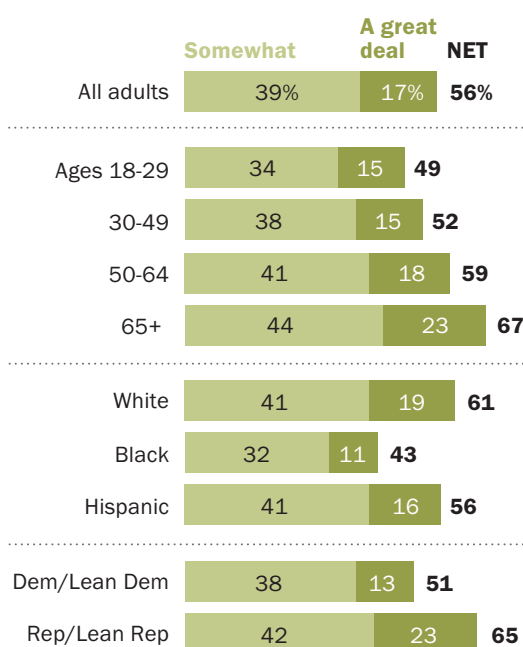
By contrast, around one-third of U.S. adults trust technology companies to use facial recognition technology responsibly, and just 18% trust advertisers with these technologies. Indeed, a mere 5% of Americans have a great deal of trust that technology companies will use facial recognition responsibly, and just 2% have high levels of trust in its use by advertisers.

Several groups express relatively low levels of trust in law enforcement agencies to use facial recognition responsibly – most notably black adults, younger people and those who identify as Democrats. Roughly six-in-ten whites trust law enforcement agencies to use facial recognition tools, but that share falls to 43% among blacks (an 18 percentage point difference). Comparable gaps in trust exist between 18- to 29-year-olds and those ages 65 and older, as well as between Democrats (including political independents who lean toward the Democratic Party) and Republicans and Republican leaners. Prior surveys by the Center of broader public attitudes toward law enforcement have found that roughly eight-in-ten Americans have confidence that police officers will act in the best interests of the public, and that warm views toward the police are especially prevalent among whites, older adults and Republicans.

Older U.S. adults, whites, Republicans more trusting of facial recognition use by law enforcement

% in each group who say they trust law enforcement agencies ____ to use facial recognition technology responsibly

	Somewhat	A great deal	NET
All adults	39%	17%	56%
Ages 18-29	34	15	49
30-49	38	15	52
50-64	41	18	59
65+	44	23	67
White	41	19	61
Black	32	11	43
Hispanic	41	16	56
Dem/Lean Dem	38	13	51
Rep/Lean Rep	42	23	65

Note: Respondents who gave other answers are not shown. Whites and blacks include only non-Hispanics. Hispanics are of any race. Source: Survey of U.S. adults conducted June 3-17, 2019. "More Than Half of U.S. Adults Trust Law Enforcement to Use Facial Recognition Responsibly"
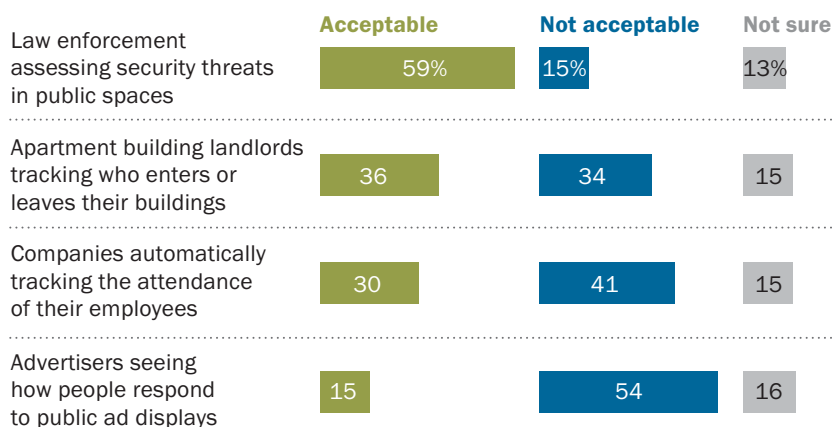
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Although white adults express higher levels of trust in the use of facial recognition by law enforcement relative to black adults, whites tend to express greater levels of *distrust* in other entities. Just 27% of whites say they do *not* trust law enforcement agencies to use facial recognition – but just over half (55%) of whites do not trust technology companies, and 73% feel this way about advertisers. A larger share of blacks (34%) than whites do not trust law enforcement to use these technologies responsibly. But notably smaller shares of blacks relative to whites express distrust in technology companies (34%) or advertisers (52%).

Americans more accepting of facial recognition use by law enforcement to assess public security threats than of use in other situations

When asked a separate set of questions about whether the use of facial recognition technology is acceptable under certain circumstances, the public again expresses more acceptance of these tools when used by law enforcement agencies than in other situations. A 59% majority of U.S. adults think it is acceptable for law enforcement agencies to use facial recognition technology to assess potential security threats in public spaces, while just 15% find this unacceptable. The rest are either unsure if this is acceptable or have not heard of facial recognition technology in the first place.

Majority of Americans find it acceptable for law enforcement to use facial recognition to assess threats in public spaces

% of U.S. adults who say the use of facial recognition technology in the following situations is …

	Acceptable	Not acceptable	Not sure
Law enforcement assessing security threats in public spaces	59%	15%	13%
Apartment building landlords tracking who enters or leaves their buildings	36	34	15
Companies automatically tracking the attendance of their employees	30	41	15
Advertisers seeing how people respond to public ad displays	15	54	16

Note: Results do not add to 100% because the 13% of U.S. adults who have not heard of facial recognition technology are not shown.
Source: Survey of U.S. adults conducted June 3-17, 2019.
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By comparison, larger shares of Americans find it unacceptable than find it acceptable for companies to use these technologies to automatically track the attendance of their employees (30% acceptable, 41% not acceptable), or for advertisers to use these tools to see how people respond to public advertising displays (15% acceptable, 54% unacceptable). The public is largely split on apartment building landlords using this technology to track who is entering or leaving

their buildings: 36% think this is an acceptable use of facial recognition technology, but 34% think it is not.
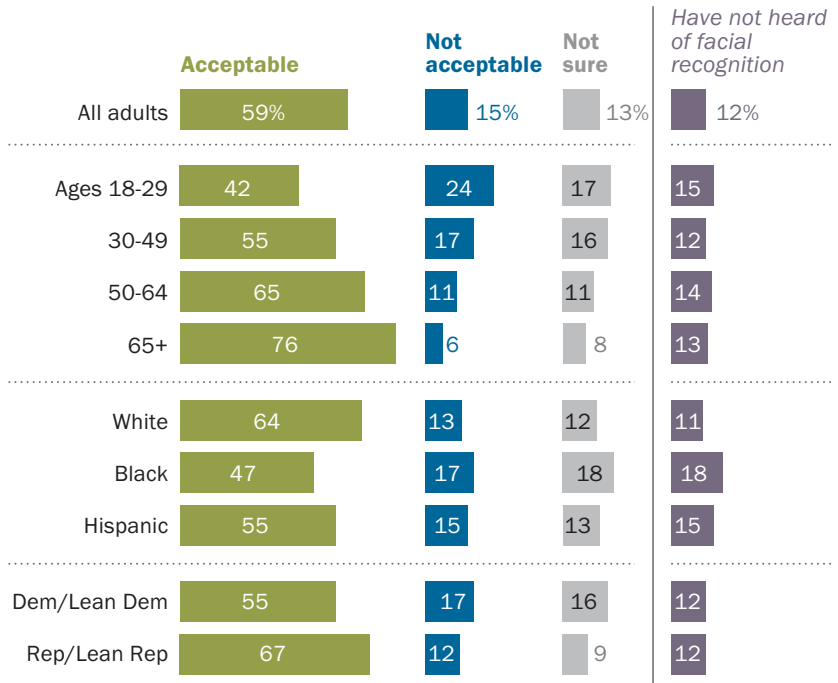
As was true of Americans' trust in law enforcement to use facial recognition technology, views of how acceptable it is for law enforcement to use facial recognition in public spaces vary based on age, political affiliation and racial or ethnic background.

These differences are especially stark in the case of age. Fewer than half (42%) of 18- to 29-year-olds think it is acceptable for law enforcement agencies to use facial recognition to assess security threats in public spaces. But that share rises to 55% among those ages 30 to 49, to 65% among those ages 50 to 64, and to 76% among those 65

Older adults much more accepting than younger adults of facial recognition use by law enforcement

% in each group who say the use of facial recognition by law enforcement to assess security threats in public spaces is …

	Acceptable	Not acceptable	Not sure	Have not heard of facial recognition
All adults	59%	15%	13%	12%
Ages 18-29	42	24	17	15
30-49	55	17	16	12
50-64	65	11	11	14
65+	76	6	8	13
White	64	13	12	11
Black	47	17	18	18
Hispanic	55	15	13	15
Dem/Lean Dem	55	17	16	12
Rep/Lean Rep	67	12	9	12

Note: Respondents who gave other answers are not shown. Whites and blacks include only non-Hispanics. Hispanics are of any race.
Source: Survey of U.S. adults conducted June 3-17, 2019.
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and older. Indeed, just 6% of older Americans think this is an unacceptable use of facial recognition technology.

Additionally, a larger share of whites (64%) finds the use of facial recognition in public spaces by law enforcement to be acceptable relative to the shares of blacks (47%) or Hispanics (55%) who say the same. And Republicans (including those who lean toward the Republican Party) are somewhat more accepting of facial recognition when used by law enforcement relative to Democrats and Democratic leaners – although a majority of each group finds this acceptable.

Majorities of Americans think facial recognition can effectively identify individual people, as well as classify them by gender and race

Despite some well-publicized examples in which facial recognition technologies have misidentified individual people or struggled to recognize certain types of faces, most Americans consider these tools to be relatively effective. Roughly three-quarters of U.S. adults (73%) think facial recognition technologies are at least somewhat effective at accurately identifying individual people. Smaller majorities think these tools are effective at accurately assessing someone's gender (63%) or race (61%).

Larger shares of men than women think facial recognition tools are effective in each of these circumstances, and whites are consistently more likely to view them as effective than are blacks or Hispanics. Additionally, those who have heard more about facial recognition tend to have more positive opinions of its effectiveness in each of these areas. Relative to those who have heard only a little about this technology, Americans who have heard a great deal about

Majorities believe facial recognition is effective at identifying individuals, assessing gender and race

% of U.S. adults who say facial recognition technology is _____ effective at accurately ...
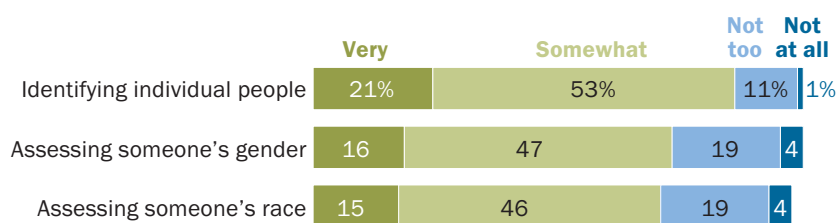
Note: Results do not add to 100% because the 13% of U.S. adults who have not heard of facial recognition technology are not shown.
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facial recognition are roughly twice as likely to say these tools would be very effective at accurately identifying individual people (40% vs. 18% among those who have heard only a little), as well as accurately assessing someone's race (28% vs. 13%) or gender (28% vs. 14%).

Acknowledgments

This report is a collaborative effort based on the input and analysis of the following individuals. Find related reports online at pewresearch.org/internet.

Methodology

The American Trends Panel survey methodology

The American Trends Panel (ATP), created by Pew Research Center, is a nationally representative panel of randomly selected U.S. adults. Panelists participate via self-administered web surveys. Panelists who do not have internet access at home are provided with a tablet and wireless internet connection. The panel is being managed by Ipsos.

Data in this report are drawn from the panel wave conducted June 3 to June 17, 2019. A total of 4,272 panelists responded out of 5,869 who were sampled, for a response rate of 73%. This does not include six panelists who were removed from the data due to extremely high rates of refusal or straightlining. The cumulative response rate accounting for nonresponse to the recruitment surveys and attrition is 5.1%. The break-off rate among panelists who logged onto the survey and completed at least one item is 1.7%. The margin of sampling error for the full sample of 4,272 respondents is plus or minus 1.9 percentage points.

American Trends Panel recruitment surveys

Recruitment Dates	Mode	Invited	Joined	Active panelists remaining
Jan. 23 to March 16, 2014	Landline/ cell RDD	9,809	5,338	2,503
Aug. 27 to Oct. 4, 2015	Landline/ cell RDD	6,004	2,976	1,464
April 25 to June 4, 2017	Landline/ cell RDD	3,905	1,628	801
Aug. 8 to Oct. 31, 2018	ABS/web	9,396	8,778	8,691
	Total	**29,114**	**18,720**	**13,459**

Note: Approximately once per year, panelists who have not participated in multiple consecutive waves or who did not complete an annual profiling survey are removed from the panel. Panelists also become inactive if they ask to be removed from the panel.

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The subsample from the ATP was selected by grouping panelists into five strata so demographic groups that are underrepresented in the panel had a higher probability of selection than overrepresented groups:

- Stratum A consists of panelists who are non-internet users. They were sampled at a rate of 100%.
- Stratum B consists of panelists with a high school education or less. They were sampled at a rate of 98.9%.
- Stratum C consists of panelists that are Hispanic, unregistered to vote, or non-volunteers. They were sampled at a rate of 44.8%.

- Stratum D consists of panelists that are black or 18-34 years old. They were sampled at a rate of 18.2%.
- Stratum E consists of the remaining panelists. They were sampled at a rate of 13.5%.

The ATP was created in 2014, with the first cohort of panelists invited to join the panel at the end of a large, national, landline and cellphone random-digit-dial survey that was conducted in both English and Spanish. Two additional recruitments were conducted using the same method in 2015 and 2017, respectively. Across these three surveys, a total of 19,718 adults were invited to join the ATP, of which 9,942 agreed to participate.

In August 2018, the ATP switched from telephone to address-based recruitment. Invitations were sent to a random, address-based sample (ABS) of households selected from the U.S. Postal Service's Delivery Sequence File. In each household, the adult with the next birthday was asked to go online to complete a survey, at the end of which they were invited to join the panel. For a random half-sample of invitations, households without internet access were instructed to return a postcard. These households were contacted by telephone and sent a tablet if they agreed to participate. A total of 9,396 were invited to join the panel, and 8,778 agreed to join the panel and completed an initial profile survey. Of the 18,720 individuals who have ever joined the ATP, 13,459 remained active panelists and continued to receive survey invitations at the time this survey was conducted.

The U.S. Postal Service's Delivery Sequence File has been estimated to cover as much as 98% of the population, although some studies suggest that the coverage could be in the low 90% range.[1]

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[1] AAPOR Task Force on Address-based Sampling. 2016. "AAPOR Report: Address-based Sampling."

Weighting dimensions

Variable	Benchmark source
Gender	2017 American Community Survey
Age	
Education	
Race/Hispanic origin	
Hispanic nativity Home internet access	
Region x Metropolitan status	2018 CPS March Supplement
Volunteerism	2017 CPS Volunteering and Civic Life Supplement
Voter registration	2016 CPS Voting and Registration Supplement
Party affiliation	Average of the three most recent Pew Research Center telephone surveys.

Note: Estimates from the ACS are based on non-institutionalized adults. Voter registration is calculated using procedures from Hur, Achen (2013) and rescaled to include the total US adult population.

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Weighting

The ATP data were weighted in a multistep process that begins with a base weight incorporating the respondents' original survey selection probability and the fact that in 2014 and 2017 some respondents were subsampled for invitation to the panel. The next step in the weighting uses an iterative technique that aligns the sample to population benchmarks on the dimensions listed in the accompanying table.

Sampling errors and test of statistical significance take into account the effect of weighting. Interviews are conducted in both English and Spanish, but the American Trends Panel's Hispanic sample is predominantly U.S. born and English speaking.

In addition to sampling error, one should bear in mind that question wording and practical difficulties in conducting surveys can introduce error or bias into the findings of opinion polls.

The following table shows the unweighted sample sizes and the error attributable to sampling that would be expected at the 95% level of confidence for different groups in the survey:

Group	Unweighted sample size	Plus or minus …
Total sample	4,272	1.9 percentage points
White	2,887	2.2 percentage points
Black	445	5.8 percentage points
Hispanic	611	5.5 percentage points
18-29	671	4.8 percentage points
30-49	1,314	3.3 percentage points
50-64	1,308	3.4 percentage points
65+	977	3.8 percentage points
Dem/Lean Dem	2,296	2.6 percentage points
Rep/Lean Rep	1,823	2.8 percentage points

CORRECTION: A previous version of the margin of error table listed figures for the effective sample size instead of the non-weighted sample size

Sample sizes and sampling errors for other subgroups are available upon request.

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Appendix A: Detailed tables

Awareness of facial recognition technology, by demographic group

% in each group who say they have heard or read ____ about the development of automated facial recognition technology that can identify someone based on a picture or video that includes their face

	A lot	A little	Nothing at all
U.S. adults	25%	61%	13%
Men	32	58	10
Women	18	65	16
White	24	65	11
Black	26	52	22
Hispanic	25	58	16
Ages 18-29	29	55	15
30-49	27	61	12
50-64	23	63	14
65+	20	67	13
Less than $30,000	22	55	22
$30K-$74,999	25	63	12
$75,000 or more	29	65	6
HS or less	19	59	21
Some college	28	60	12
College grad+	28	66	5
Dem/lean Dem	27	60	13
Rep/lean Rep	23	64	12

Note: Whites and blacks include only non-Hispanics. Hispanics are of any race. Respondents who gave other responses or who did not give an answer are not shown.
Source: Survey of U.S. adults conducted June 3-17, 2019.
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Topline

2019 PEW RESEARCH CENTER'S AMERICAN TRENDS PANEL
WAVE 49 JUNE 2019
DRAFT TOPLINE
JUNE 3-17, 2019
TOTAL N=4,272

ASK ALL:
FACE1   How much have you heard or read about the development of automated facial recognition technology that can identify someone based on a picture or video that includes their face?

June 3-17,
2019
25   A lot
61   A little
13   Nothing at all
*   No Answer

ASK IF HAVE HEARD OF FACIAL RECOGNITION (FACE1=1,2) [N=3,722]:
[RANDOMIZE ORDER OF QUESTIONS A-C]
FACE2   Based on what you know, how effective do you think facial recognition technology is at the following things?

	Very effective	Somewhat effective	Not too effective	Not effective at all	No Answer
a. Accurately identifying individual people June 3-17, 2019	24	61	12	1	1
b. Accurately assessing someone's gender June 3-17, 2019	18	54	22	4	1
c. Accurately assessing someone's race June 3-17, 2019	17	54	22	5	2

ASK IF HAVE HEARD OF FACIAL RECOGNITION (FACE1=1,2) [N=3,722]:
[RANDOMIZE ORDER OF QUESTIONS A-C]

FACE3   How much, if at all, do you trust the following groups to use facial recognition technology responsibly?

	A great deal	Somewhat	Not too much	Not at all	No Answer
a. Advertisers June 3-17, 2019	3	18	40	39	1
b. Technology companies June 3-17, 2019	6	35	35	23	1
c. Law enforcement agencies June 3-17, 2019	20	45	20	14	1

ASK IF HAVE HEARD OF FACIAL RECOGNITION (FACE1=1,2) [N=3,722]:
[RANDOMIZE ORDER OF QUESTIONS A-D]

FACE4   In your opinion, is it acceptable or unacceptable to use facial recognition technology in the following situations?

	Acceptable	Unacceptable	Not sure	No Answer
a. **[FORM 1 [N=1,879]]** Law enforcement agencies assessing potential security threats in public spaces June 3-17, 2019	68	17	15	*
b. **[FORM 1 [N=1,879]]** Companies automatically tracking the attendance of their employees June 3-17, 2019	35	47	18	*
c. **[FORM 2 [N=1,843]]** Advertisers seeing how people respond to public advertising displays June 3-17, 2019	18	63	18	1
d. **[FORM 2 [N=1,843]]** Apartment building landlords tracking who enters or leaves their buildings June 3-17, 2019	42	39	18	1