Pew Research Center

Differences in How Democrats and Republicans Behave on Twitter

A small minority of users create the vast majority of tweets from U.S. adults, and 69% of these highly prolific tweeters are Democrats

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How we did this

Twitter is one of many online venues where politicians and the public can go to engage with the issues of the day, but it can be difficult to identify ordinary Americans among the many other types of accounts on the site. This analysis offers a window into the behaviors of U.S. adults on Twitter who identify with one of the two major U.S. political parties. To identify U.S. adults on the platform (as distinct from organizational accounts or those belonging to users in other countries) and examine their Twitter behaviors, the Center fielded two separate surveys of U.S. adults in which respondents were asked to volunteer their Twitter handle for research purposes. After removing invalid handles and those whose accounts were set to private, this process produced a set of 3,518 U.S. adults with valid, public accounts whose Twitter activity could be matched to their survey responses, including to their stated party affiliation.

The data used to describe how U.S. Twitter users differ from all U.S. adults is taken from a survey of 9,220 U.S. adults conducted Aug. 31-Sept. 7, 2020. Everyone who completed the survey is a member of Pew Research Center's American Trends Panel (ATP), an online survey panel that is recruited through national, random sampling of residential addresses. This way nearly all U.S. adults have a chance of selection. The surveys are weighted to be representative of the U.S. adult population by gender, race, ethnicity, partisan affiliation, education and other categories.

Each of these components are described in greater detail in the report Methodology.

Differences in How Democrats and Republicans Behave on Twitter

A small minority of users create the vast majority of tweets from U.S. adults, and 69% of these highly prolific tweeters are Democrats

Entering the peak of the the 2020 election season, social media platforms are firmly entrenched as a venue for Americans to process campaign news and engage in various types of social activism. But not all Americans use these platforms in similar ways. A new Pew Research Center analysis of U.S. adults' Twitter behaviors finds that Democrats and Republicans have notable differences in how they use the site – from how often they tweet to the accounts they follow or mention in their own posts.

Most U.S. adults on Twitter post only rarely. But a small share of highly active users, most of whom are Democrats, produce the vast majority of tweets. The Center's analysis finds that just 10% of users produced 92% of all tweets from U.S. adults since last November, and that 69% of these highly prolific users identify as Democrats or Democratic-leaning independents.
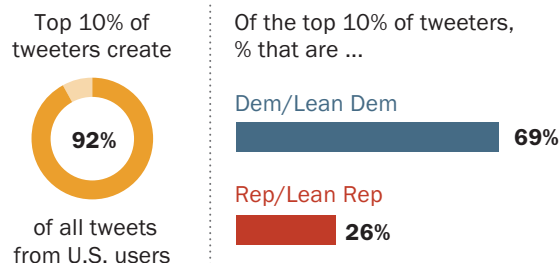
A number of factors contribute to this phenomenon. Previous Twitter analyses by the Center have found that the platform contains a larger share of Democrats than Republicans. And in addition to being more prevalent on the site in general, the 10% most active Democrats typically produce roughly twice as many tweets in a month (157) as the 10% most active Republicans (79).

Small share of highly active Twitter users, majority of whom are Democrats, produce bulk of tweets from U.S. adults

For U.S. adults with public Twitter accounts …

Top 10% of tweeters create

92%

of all tweets from U.S. users

Of the top 10% of tweeters, % that are …

Dem/Lean Dem
69%

Rep/Lean Rep
26%

Source: Pew Research Center analysis of 3,518 U.S. adults with public Twitter accounts. Tweets collected via Twitter API, Nov. 11, 2019, through Sept. 14, 2020.
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Across both parties, those who use Twitter differ in several ways compared with non-users. For instance, Twitter-using Democrats and Republicans alike tend to be younger and have higher levels of educational attainment compared with members of each party who do not use the platform.

Although nearly identical shares of Republican Twitter users (60%) and non-users (62%) describe themselves as very or somewhat conservative, Democrats who use Twitter tend to be more liberal

than non-users. Some 60% of Democrats on Twitter describe their political leanings as liberal (with 24% saying they are "very" liberal), compared with 43% among those who are not Twitter users (only 12% of whom say they are very liberal).

Beyond posting volume, Democrats and Republicans also differ from each other in their actual behaviors on the platform. For instance, the two accounts followed by the largest share of U.S. adults are much more likely to be followed by users from one party than the other. Former President Barack Obama (@BarackObama) is followed by 42% of Democrats but just 12% of Republicans, while President Donald Trump (@realDonaldTrump) is followed by 35% of Republicans and just 13% of Democrats.

Many other popular accounts are followed primarily by those who identify as either Democrat or Republican. However, a small number of the most-followed accounts on Twitter (mostly popular celebrities or entertainers) are followed by similar shares of U.S. adults belonging to each party.

Twitter-using Democrats tend to be younger and more liberal than non-users; Twitter-using Republicans are younger, but just as conservative, as other Republicans

Democratic and Republican Twitter users differ in several consistent ways compared with members of each party who do not use the platform. Most notably, Democrats and Republicans on the site (incuding political independents who "lean" toward either party) tend to be younger and more highly educated than fellow Democrats or Republicans who are not Twitter users.

These age differences are especially pronounced among Democrats. Some 37% of adult Democrats on Twitter are between the ages of 18 and 29, a figure that is 21 percentage points higher than their share (16%) among Democrats who are not Twitter users. Roughly one-in-five Republican Twitter users (22%) are 18 to 29 years old, compared with 12% of non-users. The shares of both Democratic (7%) and Republican (12%) Twitter users who are 65 and older are much smaller than among non-users.

In addition to being younger, the Twitter-using contingent of each party contains a larger share of college graduates –

Democrats on Twitter more likely to identify as liberal than Democrats who are not Twitter users

% of Twitter users/non-users in each party who are ...
(for example, 60% of Democrats who use Twitter say they are very/
somewhat liberal, compared with 43% of Democrats who do not use Twitter)
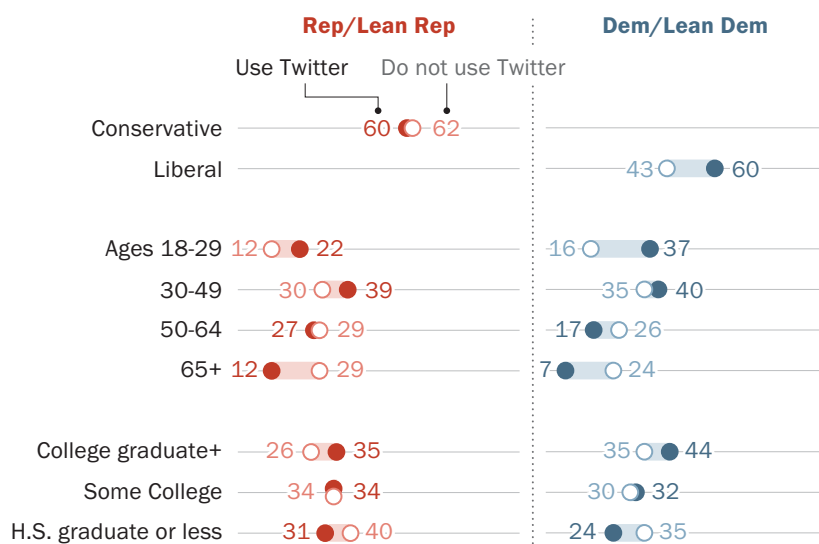
Source: Survey of U.S. adults conducted Aug. 21-Sept. 7, 2020.
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and a lower share of those with a high school diploma or less – relative to those who are not Twitter users. And for Democrats and Republicans alike, Twitter users are more likely than non-users to say they use a variety of other online social platforms.

At the same time, these differences between Twitter users and non-users are not always consistent across parties. Most notably, Twitter-using Democrats include a much larger share of self-identified political liberals than Democrats who are not on the platform (60% vs. 43%). But among

Republicans, self-identified conservatives make up a nearly identical share of Twitter users and non-users (60% vs. 62%).

Minority of U.S. adults on Twitter create bulk of all tweets, and Democrats make up a majority of this highly active group
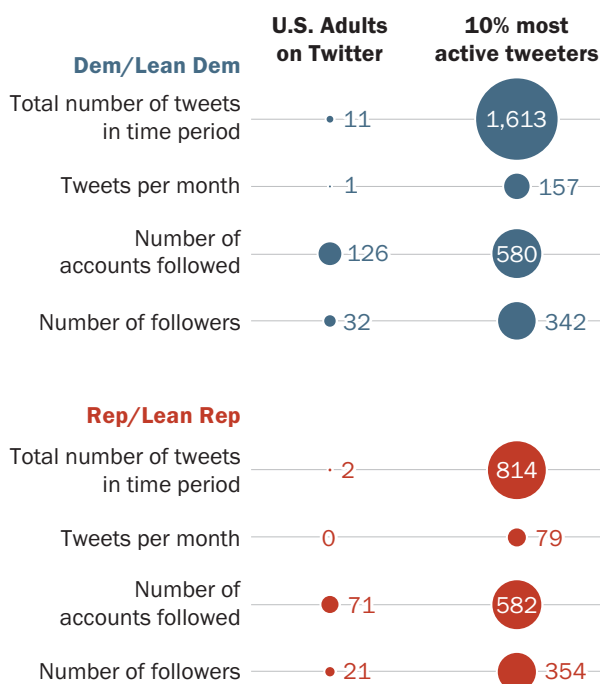
Regardless of party, most Twitter users tweet very infrequently. The median U.S. adult Twitter user tweeted just once per month during the time period of the study. The median Democrat posts just one tweet per month, and the median Republican has no monthly tweets. Similarly, the typical adult on the platform – regardless of party – has relatively few followers. The median Democrat is followed by just 32 other people, while 21 other users follow the median Republican.

Although members of both parties tweet relatively rarely, Democrats are more active users when it comes to other aspects of their Twitter behavior, such as the number of accounts they follow. The median Democrat on Twitter follows 126 other accounts, 1.8 times as many as the number followed by the median Republican (71).

Moving beyond the behaviors of the median or typical user, a small share of highly prolific tweeters produce the vast majority of tweets (a finding that is consistent with previous research from the Center). During the period in which this study was conducted, the 10% most active users on the site produced an estimated 92% of all tweets from U.S. adults. And of these highly active users that produce the bulk of content on the site, more than two-thirds (69%) are Democrats while 26% are Republicans.

For Democrats and Republicans alike, tweeting behavior dominated by a small group of highly active U.S. adults on Twitter

Medians among all U.S. adults with public Twitter accounts

	U.S. Adults on Twitter	10% most active tweeters
Dem/Lean Dem		
Total number of tweets in time period	11	1,613
Tweets per month	1	157
Number of accounts followed	126	580
Number of followers	32	342
Rep/Lean Rep		
Total number of tweets in time period	2	814
Tweets per month	0	79
Number of accounts followed	71	582
Number of followers	21	354

Source: Pew Research Center analysis of 3,518 U.S. adults with public Twitter accounts. Tweets collected via Twitter API, Nov. 11, 2019, through Sept. 14, 2020. Number of accounts followed and number of followers collected on Sept. 14, 2020.
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In addition to making up a majority of the most active tweeters among all U.S. adults on Twitter, the most active Democrats also tweet more often than the most active Republicans. The most

active 10% of Democrats in terms of tweeting produced on average nearly twice as many tweets per month as the typical Republican in the top 10% of tweeting activity (157 vs. 79). Over the entirety of the 10-month study period, the median Democrat in the top 10% of tweeting activity produced just over 1,600 tweets, compared with just over 800 for the typical Republican in the top 10% of activity.
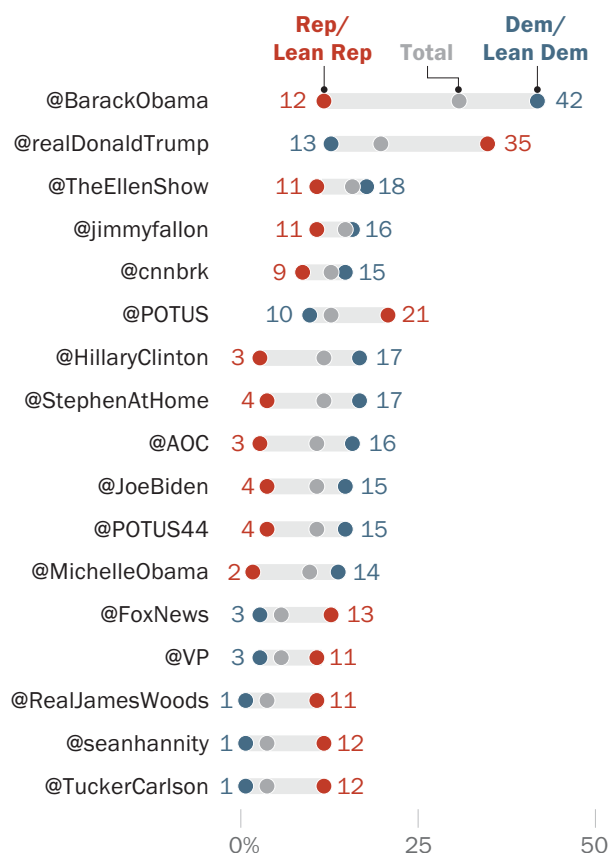
Despite these substantive differences in tweet volume, the top 10% most active Democrats and Republicans are comparable in terms of the number of accounts they follow (580 vs. 582), the number of accounts who follow them (342 vs. 354) and the number of tweets they favorite in a typical month.

Presidents, other major political figures rank among the most-followed accounts by U.S. adults

U.S. adults on Twitter follow a wide range of other users on the site. The 3,518 Twitter users in this analysis follow a total of almost 750,000 unique accounts. For the most part, there is very little overlap in the accounts that different users follow. Only 10,151 of these 750,000 accounts are followed by more than 10 users in this sample. But some high-profile accounts – typically public figures from entertainment and politics – are followed by substantial shares of U.S. adults on the site.

Many popular Twitter accounts more likely to be followed by U.S. adult Twitter users of one party

% of U.S. adults with public Twitter accounts who follow ...

	Rep/Lean Rep	Total	Dem/Lean Dem
@BarackObama	12		42
@realDonaldTrump	13		35
@TheEllenShow	11		18
@jimmyfallon	11		16
@cnnbrk	9		15
@POTUS	10		21
@HillaryClinton	3		17
@StephenAtHome	4		17
@AOC	3		16
@JoeBiden	4		15
@POTUS44	4		15
@MichelleObama	2		14
@FoxNews	3		13
@VP	3		11
@RealJamesWoods	1		11
@seanhannity	1		12
@TuckerCarlson	1		12

0%   25   50

Note: Accounts listed include the top 10 most followed by all U.S. adults, as well as any accounts in the top 10 most-followed by either Democrats or Republicans. Center researchers were unable to identify a current twitter account associated with two Twitter IDs.
Source: Pew Research Center analysis of 3,518 U.S. adults with public Twitter accounts. Lists of followed accounts collected via Twitter API, Sept. 6-7, 2020, for ATP respodents and Sept. 10-12, 2020, for KnowledgePanel.
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Certain popular accounts are followed by comparable shares of Democrats and Republicans. Late-night host Jimmy Fallon (@jimmyfallon), for instance, is followed by 16% of Democrats on the site and 11% of Republicans. But it is more common for these popular accounts to be followed by a larger share of members from one party than the other.

This is especially true for the Twitter accounts of the current and preceeding president. Former President Obama (@BarackObama, followed by 31% of U.S. adults) and President Trump (@realDonaldTrump, 20%) are among the most-followed individual accounts by U.S. adults on the platform. And these two accounts are also the most "distinctive" to Twitter users from each party. Some 42% of Democrats and Democratic leaners on Twitter follow Obama, 30 percentage points higher than the 12% of Republicans who do so. Similarly, 35% of Republicans – but just 13% of Democrats – follow Trump's personal account.

A number of other popular accounts from the world of politics are followed largely by users from one party or the other. Notable examples include Rep. Alexandria Ocasio-Cortez (@AOC) and Fox News personalities Tucker Carlson (@TuckerCarlson) and Sean Hannity (@seanhannity).

This analysis also highlights the extent to which members of each party are following their own party's presidential candidates, as well as those from the other party. (Note: In contrast to the preceding analysis that was based on individual accounts, this analysis includes *any* account – whether official or unofficial – belonging belonging to each candidate.)

Among Democrats, former Vice President Joe Biden and Sen. Kamala Harris are followed by similar shares of users. But among Republicans, a substantially larger share follows Trump than follows Vice President Mike Pence. And although relatively small shares of users follow candidates from the other party, nearly one-in-five Democrats (18%) follow at least one account associated with Trump – comparable to the shares who follow each member of the Democratic presidential ticket.

In total, 19% of Democrats on Twitter follow at least one account belonging to a member of their party's presidential ticket, compared with 38% of Republicans who follow at least one member of their own party's ticket.

Partisan differences in following each presidential ticket

% of U.S. adults with public accounts who follow at least one official or unofficial account belonging to ...
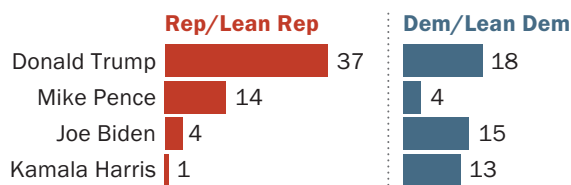
	Rep/Lean Rep	Dem/Lean Dem
Donald Trump	37	18
Mike Pence	14	4
Joe Biden	4	15
Kamala Harris	1	13

Source: Pew Research Center analysis of 3,518 U.S. adults with public Twitter accounts. Lists of followed accounts collected via Twitter API, Sept. 6-7, 2020, for ATP respodents and Sept. 10-12, 2020, for KnowledgePanel.

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Donald Trump (@realDonaldTrump) and Joe Biden (@joebiden) among the most-mentioned accounts by members of both parties

As is true of the accounts they follow, U.S. adults on Twitter mention a wide range of other users on the site. In the 10 months included in this analysis, respondents in this study mentioned a total of just over 218,000 distinct Twitter accounts in their own tweets. This figure and the analysis that follows includes accounts mentioned in original tweets, in the original text of quoted tweets, or in replies to a specific account. But it does not include retweets in which no additional text was added by the user.
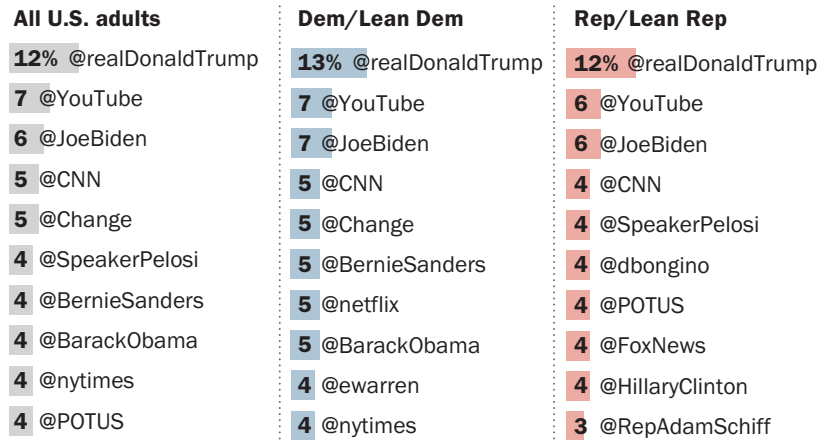
And as is also true of the accounts they follow, a small subset of these accounts were mentioned at least once during

Donald Trump, Joe Biden among most-mentioned accounts by U.S. adult Twitter users of each party

% of U.S. adults with public Twitter accounts who have mentioned _____ in an orginal tweet (not including retweets)

All U.S. adults	Dem/Lean Dem	Rep/Lean Rep
12% @realDonaldTrump	13% @realDonaldTrump	12% @realDonaldTrump
7 @YouTube	7 @YouTube	6 @YouTube
6 @JoeBiden	7 @JoeBiden	6 @JoeBiden
5 @CNN	5 @CNN	4 @CNN
5 @Change	5 @Change	4 @SpeakerPelosi
4 @SpeakerPelosi	5 @BernieSanders	4 @dbongino
4 @BernieSanders	5 @netflix	4 @POTUS
4 @BarackObama	5 @BarackObama	4 @FoxNews
4 @nytimes	4 @ewarren	4 @HillaryClinton
4 @POTUS	4 @nytimes	3 @RepAdamSchiff

Note: Chart shows 10 most mentioned accounts for each group. Analysis includes mentions of each account in an original tweet, in the original text of a quoted tweet or replies to a specific account. Retweets in which no additional text were added by the user are not included in this analysis.
Source: Pew Research Center analysis of 3,518 U.S. adults with public Twitter accounts. Tweets collected via Twitter API, Nov. 11, 2019, through Sept. 14, 2020.
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this time period by a notable share of all U.S. adults on Twitter. Trump (@realDonaldTrump) was mentioned by 12% of U.S. adults on that platform during that period – and by comparable shares of Democrats (13%) and Republicans (12%). Biden (@JoeBiden) and the video-sharing site YouTube (@YouTube) also rank among the three most mentioned accounts during this period for Democrats and Republicans alike.

Outside these three accounts, there is little overlap in the top 10 most mentioned accounts for Democrats and Republicans. The main CNN account (@CNN) is the only other handle that appears in the top 10 most mentioned for members of both parties.

There are also modest differences in the top hashtags used by members of each party, although no single hashtag was used by more than 5% of U.S. adults on Twitter over the study period. The most common hashtags during that time include #BlackLivesMatter, hashtags related to the COVID-19

pandemic (#covid19, #coronovirus), Twitter-related updates (#mytwitteranniversary, #newprofilepic) and those related to various marketing (#sweepstakes, #contest, #giveaway).

A pronounced difference between Democrats and Republicans relates to use of the #BlackLivesMatter hashtag. Some 4% of Democrats on Twitter used this hashtag at least once between Nov. 11, 2019, and Sep. 14, 2020, but just 1% of Republicans did so.

Most common hashtags used by U.S. adult Twitter users

% of U.S. adults with public Twitter accounts who have used each hashtag

#covid19	4%
#blacklivesmatter	3
#coronavirus	3
#mytwitteranniversary	3
#newprofilepic	3
#sweepstakes	2
#contest	2
#giveaway	2

Note: Hashtags less than two chracters in length were excluded from analysis. Source: Pew Research Center analysis of 3,518 U.S. adults with public Twitter accounts. Tweets collected via Twitter API, Nov. 11, 2019, through Sept. 14, 2020. "Differences in How Republicans and Democrats Behave on Twitter"

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Acknowledgments

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. Interviews are conducted in both English and Spanish. The panel is being managed by Ipsos.

Data in the first part of this report is drawn from the panel wave conducted Aug. 31 to Sept. 7, 2020. A total of 9,220 panelists responded out of 9,810 who were sampled, for a response rate of 94%. This does not include two 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%. The break-off rate among panelists who logged on to the survey and completed at least one item is 1%. The margin of sampling error for the full sample of 9,220 respondents is plus or minus 1.7 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	2,302
Aug. 27 to Oct. 4, 2015	Landline/cell RDD	6,004	2,976	1,334
April 25 to June 4, 2017	Landline/cell RDD	3,905	1,628	683
Aug. 8 to Oct. 31, 2018	ABS/web	9,396	8,778	6,398
Aug. 19 to Nov. 30, 2019	ABS/web	5,900	4,720	3,023
June 1 to July 19, 2020	ABS/web	1,865	1,636	1,633
Total		**36,879**	**25,076**	**15,373**

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 consisted of 9,810 ATP members that responded to the Wave 57 survey, the annual profile survey and were still active. Panelists who had not yet completed the annual profile survey were ineligible.

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 (RDD) 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. The same recruitment procedure was carried out on Aug. 19, 2019, from which a total of 5,900 were invited to join the panel and 4,720 agreed to join the panel and completed an initial profile survey. Another recruitment using the same procedure was carried out on June 1, 2020, from which a total of 1,865 were invited to join the panel and 1,636 agreed to join the panel and completed an initial profile survey. Of the 25,076 individuals who have ever joined the ATP, 15,373 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] The American Trends Panel never uses breakout routers or chains that direct respondents to additional surveys.

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

Weighting

The ATP data was weighted in a multistep process that accounts for multiple stages of sampling and nonresponse that occur at different points in the survey process. First, each panelist begins with a base weight that reflects their probability of selection for their initial recruitment survey (and the probability of being invited to participate in the panel in cases where only a subsample of respondents were invited). The base weights for panelists recruited in different years are scaled to be proportionate to the effective sample size for all active panelists in their cohort. To correct for nonresponse to the initial recruitment surveys and gradual panel attrition, the base weights for all active panelists are calibrated to align with the population benchmarks identified in the accompanying table to create a full-panel weight.

Weighting dimensions

Variable	Benchmark source
Age x Gender Education x Gender Education x Age Race/Ethnicity x Education Born inside vs. outside the U.S. among Hispanics and Asian Americans Years lived in the U.S.	2018 American Community Survey
Census region x Metro/Non-metro	2019 CPS March Supplement
Volunteerism	2017 CPS Volunteering & Civic Life Supplement
Voter registration	2018 CPS Voting and Registration Supplement
Party affiliation	Average of the three most recent Pew Research Center telephone surveys
Frequency of internet use	ATP 2020 ABS recruitment survey

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 U.S. adult population. The ATP 2020 ABS recruitment survey featured 1,862 online completions and 2,247 mail survey completions.

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For ATP waves in which only a subsample of panelists are invited to participate, a wave-specific base weight is created by adjusting the full-panel weights for subsampled panelists to account for any differential probabilities of selection for the particular panel wave. For waves in which all active panelists are invited to participate, the wave-specific base weight is identical to the full-panel weight.

In the final weighting step, the wave-specific base weights for panelists who completed the survey are again calibrated to match the population benchmarks specified above. These weights are trimmed (typically at about the 1st and 99th percentiles) to reduce the loss in precision stemming from variance in the weights. Sampling errors and test of statistical significance take into account the effect of weighting.

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	9,220	1.7 percentage points
Dem/Lean Dem, use Twitter	1,604	4.6 percentage points
Dem/Lean Dem, do not use Twitter	3,575	2.8 percentage points
Rep/Lean Rep, use Twitter	822	5.9 percentage points
Rep/Lean Rep, do not use Twitter	2,956	2.8 percentage points

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

Twitter data methodology

Twitter handle collection

The analysis of Twitter use in this report is based on two surveys of U.S. adults ages 18 years and older. The first was a survey of Twitter users conducted from Nov. 21 to Dec. 17, 2018, by Ipsos in English using KnowledgePanel. The second was a nationally representative survey of U.S. adults (including both Twitter users and non-users) conducted from Oct. 29 to Nov. 11, 2019, on Pew Research Center's American Trends Panel. This report focuses on the current day activity of 2,791 respondents from the KnowledgePanel survey and 1,345 respondents from the ATP survey who said they use Twitter, agreed to allow researchers to examine their Twitter behaviors, and provided a valid Twitter handle. The margin of sampling error for the combined sample of 4,136 Twitter users is plus or minus 2.4 percentage points.

The two surveys had different designs and eligibility criteria. For the KnowledgePanel survey, a total of 7,850 panelists who had previously indicated that they have a Twitter account were invited to participate. Of the 4,829 who responded, 3,649 (76%) confirmed that they used Twitter. Among confirmed Twitter users, 3,293 (90%) agreed to provide their Twitter handle. Next, researchers reviewed each account and removed any that were nonexistent or belonged to institutions, products or international entities. In the end, there were 2,791 respondents who both completed the survey and provided a valid handle (76% of confirmed Twitter users).

KnowledgePanel members are recruited through probability sampling methods and include those with internet access and those who did not have internet access at the time of their recruitment (KnowledgePanel provides internet access for those who do not have it, and if needed, a device to access the internet when they join the panel). A combination of RDD and ABS methodologies have been used to recruit panel members. (In 2009 KnowledgePanel switched its sampling methodology for recruiting members from RDD to ABS.) KnowledgePanel continually recruits new panel members throughout the year to offset panel attrition.

The ATP sample is comprised of adults who responded to ATP Wave 57. A total of 12,043 panelists responded out of 14,412 who were sampled, for a response rate of 84%.[2] On this survey, a total of 2,561 (21%) stated that they used Twitter. Of these Twitter users, 1,517 (59%) agreed to provide their Twitter handle. Researchers reviewed each account in a similar manner as for the KnowledgePanel respondents. This yielded 1,345 Twitter users who agreed to participate in the study and provided a valid handle (53% of confirmed Twitter users).

Weighting

The final sample of 4,136 Twitter users with valid handles was weighted in a multi-stage process. Both the KnowledgePanel and ATP samples begin with a base weight that reflects each respondent's probability of selection into the sample. In the first step, a propensity adjustment was made to the ATP sample's base weight so that the adjusted ATP sample more closely resembled the KnowledgePanel sample on gender, age, race, Hispanic ethnicity, education, region, party affiliation, volunteerism, voter registration, and metropolitan area. In addition to demographics, the propensity adjustment also balanced on whether panelists tweeted at least once between Oct. 28, 2019, and April 28, 2020, the number of tweets in that six month period, the number of followers, the number of accounts followed, and the number of tweets favorited per day. This was done to adjust for differences between the two samples in terms of the frequency of Twitter use that are likely attributable to differences in the design, timing and incentivization of the two surveys.

Next, the samples were combined and the weights were further adjusted using an iterative technique to match a set of benchmarks for gender, age, race, Hispanic ethnicity, education, region, party affiliation, volunteerism, voter registration, and metropolitan area. Because there are no official benchmarks for the population of Twitter users, population parameters were estimated using the set of respondents to ATP Wave 57 who indicated that they use Twitter (regardless of

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whether they agreed to provide their Twitter handle). For details on how the full Wave 57 sample was weighted see the survey methodology.

Sampling errors and statistical tests of significance take into account the effect of weighting at each of these stages. In addition to sampling error, question wording and practical difficulties in conducting surveys can introduce error or bias into the findings of opinion polls.

Data collection

Respondents with valid accounts were loaded into a secure database. Researchers regularly collect and record the publicly available data from these accounts. This includes only profile description, number of tweets, and number of followers and followed accounts for users with protected accounts. This includes the tweets and the list of accounts followed by and following each user for accounts that are not protected. This study only includes data about users that do not protect their accounts, whose accounts are public.

Tweets and general profile data were collected daily, and the lists of followed and following accounts once a week. The weekly collection is staggered for the two sets of survey respondents to avoid hitting limits on querying the Twitter API.

The tweets analyzed in this study were produced between Nov. 11, 2019, and Sept. 14, 2020. The general profile information, such as number of followers, is from Sept. 14, 2020. Data about accounts followed by respondents to the ATP survey was collected between Sept. 6 and Sept. 7, 2020, and to the KnowledgePanel survey between Sept. 10 and Sept. 12, 2020. Monthly tweet frequency was estimated by multiplying the daily tweet count by 30 to approximate the monthly tweet total. Analyses of mentions and hashtags exclude retweets, but include original tweets, replies, and the original text on quote tweets. Mentions and hashtags are identified using a regular expression identifying the @ or # before the term, and transformed to lowercase before analysis. Hashtags less than two characters in length were excluded from analysis. In identifying the most followed accounts, center researchers were unable to identify a current twitter account associated with the twitter ID for two accounts. These accounts were dropped from the analysis.