Ipsos Poll Conducted for Thomson Reuters

Core Political Data

FEBRUARY 4, 2021

GAME CHANGERS

Core Political Data

These are findings from an Ipsos poll conducted

for

REUTERS

date

February 2-3, 2021

For the survey,

a sample of

1,005
Americans

including
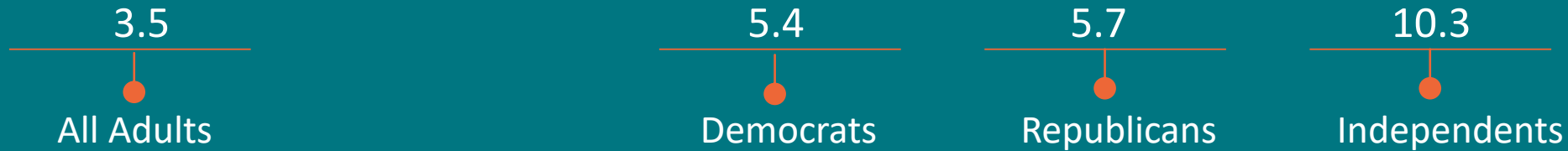
429
Democrats

380
Republicans

117
Independents

ages

18+

w e r e   i n t e r v i e w e d   o n l i n e

Core Political Data

The precision of the Reuters/Ipsos online polls is measured using a credibility interval.

In this case, the poll has a credibility interval of plus or minus the following percentage points

3.5	5.4	5.7	10.3
All Adults	Democrats	Republicans	Independents

For more information about credibility intervals, please see the appendix.

Core Political Data

- **The data were weighted to the U.S. current population data by:**
  - **Gender**
  - **Age**
  - **Education**
  - **Ethnicity**
  - **Region**

- Statistical margins of error are not applicable to online polls.
- All sample surveys and polls may be subject to other sources of error, including, but not limited to coverage error and measurement error.
- Figures marked by an asterisk (*) indicate a percentage value of greater than zero but less than one half of one per cent.
- Where figures do not sum to 100, this is due to the effects of rounding.

- *To see more information on this and other Reuters/Ipsos polls, please visit: http://polling.reuters.com/*

Most Important Problem Facing America

In your opinion, what is the most important problem facing the U.S. today?

|	All Adults	Democrats	Republicans	Independents
Economy, unemployment, and jobs	**23%**	**18%**	**32%**	**21%**
War and foreign conflicts	1%	0%	1%	1%
Immigration	4%	1%	7%	3%
Terrorism and extremism	3%	5%	3%	2%
Healthcare system	**8%**	**10%**	**5%**	**9%**
Public health, disease, and illness	**20%**	**23%**	**15%**	**19%**
Energy issues	1%	0%	1%	0%
Morality	5%	1%	10%	2%
Education	3%	2%	4%	6%
Crime or corruption	5%	3%	7%	9%
Environment and climate	5%	10%	3%	3%
Inequality and discrimination	7%	13%	1%	4%
Other	**11%**	**10%**	**10%**	**12%**
Don't know	4%	2%	2%	10%

Joe Biden's Weekly Approval

Overall, do you approve or disapprove of the way Joe Biden is handling his job as President (previously president-elect)?

Total Approve
Total Disapprove
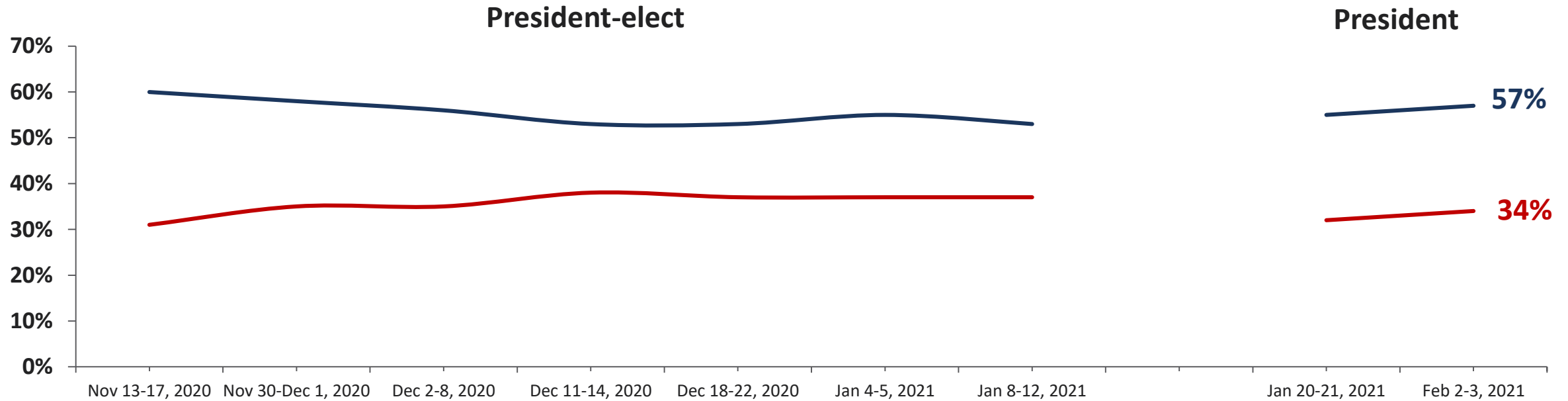
How to Calculate Bayesian Credibility Intervals

The calculation of credibility intervals assumes that Y has a binomial distribution conditioned on the parameter θ\, i.E., $Y|\theta \sim bin(n,\theta)$, where n is the size of our sample. In this setting, Y counts the number of "yes", or "1", observed in the sample, so that the sample mean ($\bar{Y}$) is a natural estimate of the true population proportion θ. This model is often called the likelihood function, and it is a standard concept in both the bayesian and the classical framework. The bayesian[1] statistics combines both the prior distribution and the likelihood function to create a posterior distribution.

The posterior distribution represents our opinion about which are the plausible values for θ adjusted after observing the sample data. In reality, the posterior distribution is one's knowledge base updated using the latest survey information. For the prior and likelihood functions specified here, the posterior distribution is also a beta distribution ($\pi(\frac{\theta}{y}) \sim \beta(y+a,n-y+b)$), but with updated hyper-parameters.

Our credibility interval for θ is based on this posterior distribution. As mentioned above, these intervals represent our belief about which are the most plausible values for θ given our updated knowledge base. There are different ways to calculate these intervals based on $\pi\left(\frac{\theta}{y}\right)$. Since we want only one measure of precision for all variables in the survey, analogous to what is done within the classical framework, we will compute the largest possible credibility interval for any observed sample. The worst case occurs when we assume that a=1 and b=1 and y=n/2. Using a simple approximation of the posterior by the normal distribution, the 95% credibility interval is given by, approximately: $\bar{Y} \mp \frac{1}{\sqrt{n}}$

How to Calculate Bayesian Credibility Intervals

FOR THIS POLL

The Bayesian credibility interval was adjusted using standard weighting design effect 1+L=1.3 to account for complex weighting[2]

Examples of credibility intervals for different base sizes are below:

SAMPLE SIZE	CREDIBILITY INTERVALS
2,000	2.5
1,500	2.9
1,000	3.5
750	4.1
500	5.0
350	6.0
200	7.9
100	11.2

[1] Bayesian Data Analysis, Second Edition, Andrew Gelman, John B. Carlin, Hal S. Stern, Donald B. Rubin, Chapman & Hall/CRC | ISBN: 158488388X | 2003
[2] Kish, L. (1992). Weighting for unequal Pi . Journal of Official, Statistics, 8, 2, 183200.

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that makes our complex world easier and faster to navigate and inspires our clients to make smarter decisions.

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Through specialisation, we offer our clients a unique depth
of knowledge and expertise. Learning from different experiences gives us perspective and inspires us to boldly
call things into question, to be creative.

By nurturing a culture of collaboration and curiosity, we attract the highest calibre of people who have the ability
and desire to influence and shape the future.

"GAME CHANGERS" – our tagline – summarises our ambition.