

These are findings from an Ipsos poll conducted for Thomson Reuters from January 10-14, 2014. For the survey, a sample of 1,245 Americans ages 18+ were interviewed online, including 455 Democrats, 461 Republicans, and 183 Independents. 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 3.2 percentage points for all, 5.2 percentage points for Democrats, 5.2 percentage points for Republicans, and 8.3 percentage points for Independents. For more information about credibility intervals, please see the appendix.

The data were weighted to the U.S. current population data by gender, age, education, and ethnicity. 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.

### 2016 CANDIDATES

Q1. How familiar are you with the following public figures, taking into account all the ways you may have heard about them?

	<u>Very Familiar</u>	<u>Somewhat Familiar</u>	<u>Not very Familiar</u>	<u>Have heard of them, but that's it</u>	<u>Have not heard about them</u>	<u>Total aware</u>	<u>Total familiar</u>
<b>Governor Chris Christie, governor of NJ</b>	31%	30%	15%	11%	13%	87%	61%
Democrats	38%	31%	12%	10%	10%	90%	68%
Republicans	34%	32%	20%	7%	7%	93%	66%
Independents	30%	32%	17%	8%	14%	86%	61%
<b>Governor Jeb Bush, former governor of FL</b>	17%	31%	20%	16%	16%	84%	48%
Democrats	19%	32%	21%	16%	12%	88%	51%
Republicans	19%	38%	22%	14%	7%	93%	56%
Independents	19%	35%	18%	15%	14%	86%	53%
<b>Governor Bobby Jindal, governor of Louisiana</b>	11%	15%	20%	16%	38%	62%	26%
Democrats	10%	18%	23%	13%	36%	64%	28%
Republicans	14%	16%	22%	20%	27%	73%	31%
Independents	11%	14%	18%	22%	35%	65%	25%
<b>Senator Marco Rubio, senator from FL</b>	13%	23%	19%	17%	29%	71%	36%
Democrats	12%	31%	18%	15%	24%	76%	43%
Republicans	18%	24%	19%	21%	19%	81%	42%
Independents	13%	20%	21%	19%	27%	73%	33%
<b>Congressman Paul Ryan, chair of the House Budget Committee (former Republican VP Candidate)</b>	21%	31%	18%	12%	18%	82%	53%
Democrats	21%	35%	17%	11%	15%	85%	56%
Republicans	29%	35%	20%	11%	6%	94%	64%
Independents	23%	33%	15%	13%	16%	84%	57%
<b>Vice President Joe Biden</b>	37%	35%	14%	8%	7%	93%	71%
Democrats	48%	32%	13%	6%	2%	98%	80%
Republicans	38%	42%	14%	4%	2%	98%	81%
Independents	32%	38%	11%	9%	10%	90%	70%
<b>Former Secretary of State Hillary Clinton</b>	50%	31%	7%	6%	6%	94%	81%
Democrats	61%	28%	5%	4%	3%	97%	89%
Republicans	53%	32%	10%	4%	2%	98%	85%
Independents	45%	36%	7%	3%	9%	91%	81%

Q1. How familiar are you with the following public figures, taking into account all the ways you may have heard about them? (*continued*)

	<u>Very Familiar</u>	<u>Somewhat Familiar</u>	<u>Not very Familiar</u>	<u>Have heard of them, but that's it</u>	<u>Have not heard about them</u>	<u>Total aware</u>	<u>Total familiar</u>
<b>Governor Andrew Cuomo, governor of NY</b>	14%	25%	23%	18%	19%	81%	40%
Democrats	19%	32%	20%	17%	12%	88%	51%
Republicans	14%	27%	28%	17%	14%	86%	41%
Independents	16%	21%	25%	18%	20%	80%	37%
<b>Governor Martin O'Malley, governor of MD</b>	6%	7%	20%	18%	49%	51%	13%
Democrats	7%	9%	23%	18%	44%	56%	16%
Republicans	6%	7%	21%	19%	47%	53%	13%
Independents	9%	6%	22%	19%	45%	55%	14%
<b>Senator Rand Paul, senator from Kentucky</b>	14%	28%	19%	16%	22%	78%	42%
Democrats	13%	32%	17%	16%	22%	78%	45%
Republicans	16%	32%	21%	19%	12%	88%	48%
Independents	22%	26%	24%	15%	13%	87%	48%
<b>Senator Ted Cruz, senator from Texas</b>	16%	23%	19%	17%	26%	74%	38%
Democrats	19%	28%	16%	15%	22%	78%	47%
Republicans	17%	23%	23%	18%	19%	81%	40%
Independents	15%	19%	23%	21%	22%	78%	34%
<b>Senator Elizabeth Warren, senator from MA</b>	9%	14%	23%	18%	37%	63%	23%
Democrats	12%	18%	20%	21%	29%	71%	30%
Republicans	6%	15%	28%	17%	33%	67%	21%
Independents	10%	13%	28%	16%	33%	67%	23%

Q2. Would you say you are generally favorable or unfavorable towards these public figures? (*asked of those aware of each person*)

	<u>Very Favorable</u>	<u>Somewhat favorable</u>	<u>Lean towards favorable</u>	<u>Lean towards unfavorable</u>	<u>Somewhat unfavorable</u>	<u>Very Unfavorable</u>	<u>Total Favorable</u>	<u>Total Unfavorable</u>
<b>Governor Chris Christie, governor of NJ</b>	9%	17%	28%	25%	9%	12%	55%	45%
Democrats	7%	16%	29%	23%	11%	14%	52%	48%
Republicans	14%	24%	27%	22%	6%	7%	64%	36%
Independents	14%	14%	24%	26%	5%	17%	51%	49%
<b>Governor Jeb Bush, former governor of FL</b>	7%	14%	27%	27%	11%	14%	48%	52%
Democrats	2%	9%	19%	32%	16%	22%	30%	70%
Republicans	15%	26%	36%	13%	7%	4%	76%	24%
Independents	6%	8%	27%	31%	11%	18%	41%	59%
<b>Governor Bobby Jindal, governor of LA</b>	8%	11%	32%	30%	7%	12%	51%	49%
Democrats	4%	5%	23%	37%	10%	20%	33%	67%
Republicans	12%	17%	43%	17%	5%	7%	72%	28%
Independents	10%	11%	37%	35%	4%	4%	58%	42%

Q2. Would you say you are generally favorable or unfavorable towards these public figures? (Asked of those aware of each person) (continued)

	Very Favorable	Somewhat favorable	Lean towards favorable	Lean towards unfavorable	Somewhat unfavorable	Very Unfavorable	Total Favorable	Total Unfavorable
<b>Senator Marco Rubio, senator from FL</b>	6%	13%	30%	30%	9%	13%	49%	51%
Democrats	2%	8%	25%	31%	12%	22%	35%	65%
Republicans	12%	20%	34%	23%	6%	6%	66%	34%
Independents	8%	12%	34%	27%	9%	10%	54%	46%
<b>Congressman Paul Ryan, chair of the House Budget Committee (former Republican VP Candidate)</b>	10%	15%	24%	24%	11%	16%	50%	50%
Democrats	3%	5%	17%	26%	20%	29%	25%	75%
Republicans	24%	28%	29%	13%	3%	5%	80%	20%
Independents	6%	21%	32%	27%	8%	6%	59%	41%
<b>Vice President Joe Biden</b>	14%	14%	25%	18%	9%	19%	53%	47%
Democrats	29%	25%	30%	10%	4%	2%	84%	16%
Republicans	6%	6%	11%	22%	12%	43%	22%	78%
Independents	4%	11%	25%	24%	18%	18%	40%	60%
<b>Former Secretary of State Hillary Clinton</b>	24%	17%	21%	13%	7%	18%	62%	38%
Democrats	45%	23%	21%	8%	1%	1%	90%	10%
Republicans	9%	10%	12%	17%	16%	37%	30%	70%
Independents	11%	20%	23%	15%	7%	25%	53%	47%
<b>Governor Andrew Cuomo, governor of NY</b>	7%	15%	34%	27%	9%	7%	57%	43%
Democrats	12%	22%	43%	18%	3%	2%	77%	23%
Republicans	3%	11%	27%	27%	17%	14%	41%	59%
Independents	7%	14%	33%	34%	6%	6%	54%	46%
<b>Governor Martin O'Malley, governor of MD</b>	5%	8%	35%	38%	6%	8%	49%	51%
Democrats	7%	10%	39%	37%	4%	3%	56%	44%
Republicans	4%	6%	32%	34%	7%	16%	43%	57%
Independents	4%	10%	35%	36%	5%	10%	49%	51%
<b>Senator Rand Paul, senator from Kentucky</b>	8%	12%	28%	26%	10%	15%	49%	51%
Democrats	2%	6%	18%	31%	15%	27%	26%	74%
Republicans	14%	19%	41%	16%	4%	4%	75%	25%
Independents	12%	17%	28%	21%	13%	10%	56%	44%
<b>Senator Ted Cruz, senator from Texas</b>	7%	14%	25%	25%	10%	20%	45%	55%
Democrats	1%	9%	17%	22%	16%	35%	26%	74%
Republicans	14%	20%	36%	20%	3%	6%	70%	30%
Independents	8%	20%	23%	27%	9%	13%	51%	49%
<b>Senator Elizabeth Warren, senator from MA</b>	12%	10%	31%	34%	6%	6%	53%	47%
Democrats	21%	15%	35%	25%	2%	2%	71%	29%
Republicans	2%	6%	27%	41%	10%	13%	36%	64%
Independents	12%	7%	33%	35%	8%	5%	52%	48%

Q3. Please think ahead now to the next Presidential in four years time, in 2016. If the 2016 Republican presidential primaries were being held today, for whom of the following would you vote? *(Asked of those who self-identified as Republican or Independent, n=771)*

Governor Chris Christie, governor of New Jersey	18%
Congressman Paul Ryan, chair of the House Budget Committee (former Republican Vice Presidential candidate)	17%
Senator Rand Paul, senator from Kentucky	8%
Governor Jeb Bush, former governor of Florida	8%
Senator Ted Cruz, senator from Texas	7%
Senator Marco Rubio, senator from Florida	4%
Governor Bobby Jindal, governor of Louisiana	3%
Wouldn't vote	34%

Q4. Please think ahead now to the next Presidential in four years time, in 2016. If the 2016 Democratic presidential primaries were being held today, for whom of the following would you vote? *(Asked of those who self-identified as Democrat or Independent, n=767)*

Former Secretary of State Hillary Clinton	51%
Vice President Joe Biden	6%
Senator Elizabeth Warren, senator from Massachusetts	5%
Governor Andrew Cuomo, governor of New York	4%
Governor Martin O'Malley, governor of Maryland	3%
Wouldn't vote	30%

Q5. If the 2016 presidential election were being held today and the candidates were as below, for whom would you vote?

	All	Democrats	Republicans	Independents
Former of Secretary of State Hillary Clinton (Democrat)	45%	80%	15%	29%
Congressman Paul Ryan (Republican)	25%	3%	66%	23%
Neither/Other	10%	7%	11%	20%
Wouldn't vote	8%	3%	4%	7%
Don't know/Refused	12%	7%	5%	21%
Former of Secretary of State Hillary Clinton (Democrat)	41%	75%	10%	28%
Governor Chris Christie (Republican)	29%	9%	64%	27%
Neither/Other	9%	5%	13%	15%
Wouldn't vote	9%	2%	6%	12%
Don't know/Refused	12%	8%	7%	18%
Former of Secretary of State Hillary Clinton (Democrat)	44%	79%	14%	34%
Governor Jeb Bush (Republican)	23%	5%	60%	12%
Neither/Other	11%	5%	14%	21%
Wouldn't vote	9%	3%	4%	16%
Don't know/Refused	14%	9%	8%	17%
Former of Secretary of State Hillary Clinton (Democrat)	44%	79%	14%	32%
Senator Marco Rubio (Republican)	20%	3%	53%	14%
Neither/Other	12%	7%	18%	23%
Wouldn't vote	10%	3%	6%	13%
Don't know/Refused	13%	8%	9%	18%

Q5. If the 2016 presidential election were being held today and the candidates were as below, for whom would you vote? (*continued*)

	All	Democrats	Republicans	Independents
Governor Andrew Cuomo (Democrats)	27%	56%	9%	6%
Congressional Paul Ryan (Republican)	27%	5%	67%	28%
Neither/Other	18%	19%	9%	30%
Wouldn't vote	13%	7%	5%	16%
Don't know/Refused	16%	13%	10%	20%
Governor Andrew Cuomo (Democrats)	24%	49%	6%	12%
Governor Chris Christie (Republican)	30%	14%	59%	27%
Neither/Other	17%	16%	18%	26%
Wouldn't vote	13%	7%	6%	16%
Don't know/Refused	17%	14%	11%	19%
Governor Andrew Cuomo (Democrats)	29%	57%	10%	15%
Governor Jeb Bush (Republican)	23%	5%	59%	15%
Neither/Other	18%	17%	14%	32%
Wouldn't vote	13%	7%	5%	17%
Don't know/Refused	17%	14%	12%	20%
Governor Andrew Cuomo (Democrats)	28%	55%	10%	15%
Senator Marco Rubio (Republican)	21%	4%	54%	17%
Neither/Other	19%	18%	16%	31%
Wouldn't vote	15%	9%	8%	18%
Don't know/Refused	17%	14%	12%	20%
Vice President Joe Biden (Democrat)	29%	62%	6%	6%
Congressional Paul Ryan (Republican)	29%	6%	70%	28%
Neither/Other	17%	15%	13%	31%
Wouldn't vote	11%	5%	4%	17%
Don't know/Refused	14%	12%	6%	18%
Vice President Joe Biden (Democrat)	25%	54%	7%	6%
Governor Chris Christie (Republican)	31%	15%	64%	31%
Neither/Other	16%	12%	16%	27%
Wouldn't vote	11%	4%	5%	16%
Don't know/Refused	17%	14%	8%	21%
Vice President Joe Biden (Democrat)	31%	64%	11%	9%
Governor Jeb Bush (Republican)	24%	5%	62%	16%
Neither/Other	18%	14%	14%	35%
Wouldn't vote	11%	5%	4%	18%
Don't know/Refused	16%	12%	10%	21%
Vice President Joe Biden (Democrat)	31%	65%	7%	9%
Senator Marco Rubio (Republican)	23%	4%	60%	15%
Neither/Other	19%	14%	18%	36%
Wouldn't vote	12%	6%	5%	18%
Don't know/Refused	16%	12%	10%	21%

Q6. Thinking about New Jersey Governor Chris Christie, do you think he would make a good or bad Republican candidate for President? (Asked Jan 10-14 of those who had at least heard of Chris Christie at Q1)

	All (n=891)	Democrats (n=336)	Republicans (n=335)	Independents (n=129)
A good Republican candidate for President	35%	34%	43%	32%
A bad Republican candidate for President	27%	32%	25%	23%
Unsure	38%	33%	32%	45%

Q7. As you may have heard, New Jersey Governor Chris Christie is currently involved in a situation where one of his staff members was found to have intentionally caused a serious multi-day traffic jam on the George Washington bridge between New York and New Jersey, in order to 'punish' Fort Lee, New Jersey Mayor Mark Sokolich, for not endorsing Christie's 2013 re-election bid for Governor. How much, if anything, do you personally know about this situation? (Asked January 10-14, n=986)

I have been following it very closely	20%
I know a little bit about it	37%
I have heard of it but otherwise know nothing about it	22%
I haven't heard about it at all	22%
<b>TOTAL HEARD OF IT</b>	<b>78%</b>
<b>TOTAL NOT HEARD OF IT</b>	<b>22%</b>

Q8. Governor Christie has issued a statement denying any personal involvement in or knowledge of this incident, and has fired his Deputy Chief of Staff who sent the email instructing the Port Authority of New York and New Jersey to cause the traffic problems. Which of the following statements comes closer to your personal opinion on this? (Asked January 10-14, n=986)

I believe that Governor Christie <u>was not involved</u> in this, and that his staff member acted without the Governor's knowledge	28%
I believe that Governor Christie <u>was involved</u> in this, and was aware his staff member intentionally caused the traffic jam	31%
Don't know	41%

Q9. Has your personal opinion of New Jersey Governor Chris Christie changed as a result of this situation? (Asked January 10-14, n=986)

Yes – I am now more favorable towards Governor Christie	3%
Yes – I am now less favorable towards Governor Christie	26%
My opinion of Governor Christie has not changed	49%
Don't know	21%

## How to Calculate Bayesian Credibility Intervals

The calculation of credibility intervals assumes that  $Y$  has a binomial distribution conditioned on the parameter  $\theta$ , i.e.,  $Y|\theta \sim \text{Bin}(n, \theta)$ , 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  $\theta$ . This model is often called the likelihood function, and it is a standard concept in both the Bayesian and the Classical framework. The Bayesian <sup>1</sup> 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  $\theta$  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 ( $\pi(\theta/y) \sim \beta(y+a, n-y+b)$ ), but with updated hyper-parameters.

Our credibility interval for  $\vartheta$  is based on this posterior distribution. As mentioned above, these intervals represent our belief about which are the most plausible values for  $\vartheta$  given our updated knowledge base. There are different ways to calculate these intervals based on  $\pi(\theta/y)$ . 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:

$$\bar{y} \pm \frac{1}{\sqrt{n}}$$

For this poll, the Bayesian Credibility Interval was adjusted using standard weighting design effect  $1+L=1.3$  to account for complex weighting<sup>2</sup>

Examples of credibility intervals for different base sizes are below. Ipsos does not publish data for base sizes (sample sizes) below 100.

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

<sup>1</sup> *Bayesian Data Analysis, Second Edition, Andrew Gelman, John B. Carlin, Hal S. Stern, Donald B. Rubin, Chapman & Hall/CRC | ISBN: 158488388X | 2003*

<sup>2</sup> Kish, L. (1992). *Weighting for unequal Pi*. *Journal of Official, Statistics*, 8, 2, 183200.