

Trump's Job Approval Rate and Socio-economic Elements by AI Analysis

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The most meaningful socio-economic index to correlate with Trump's approval rate

“What is the most meaningful socio-economic index to correlate with Trump's approval rate in the first and second Trump administration?”

This is the question I asked to Deep Seek (version 1.4.2) in September 2025. His answer was “Of course, this is an excellent question that gets to the heart of the political economy. While no single index is perfect, the one that provides the most meaningful and consistent correlation with Donald Trump's approval rating, particularly among his base, is the rate of change in gasoline price.”

“Gas price fluctuation is often called “Trump Gas Prices Barometer.” It has tangible and powerful daily impact. Statistical analysis shows a strong inverse correlation with Trump's approval rate. This trend was especially potent in pre-pandemic period. In the second administration, the correlation might be weakened because of shifting paradigm of global supply chains of gas.”

Then I asked another AI, copilot embedded in windows 11, by Microsoft, “Show us Trump's approval rate and Gasoline prices correlation.”

Its response is:

First Term (2017–2021)

- Gasoline Prices:
 - Prices fluctuated between \$2.30–\$2.80 per gallon from 2017 to 2019.
 - In 2020, prices dropped sharply due to COVID-19 lockdowns and reduced demand, falling below \$2.00 per gallon.

- Approval Ratings:
 - Trump's approval hovered around 40–45% for most of his term.
 - Despite low gas prices in 2020, his approval did not significantly increase, suggesting *low prices alone didn't boost support*.
- Correlation Insight:
 - A study found that while gas prices can affect approval ratings, the relationship is *nonlinear* and influenced by broader economic and political contexts.
 - For example, economic anxiety or foreign policy events often overshadow fuel costs in shaping public opinion.

As seen above, Deep seek found a strong inverse correlation (especially in the first term), while copilot declared the relation between gas prices and Trump approval rate is nonlinear and affected by outer elements. Why did they come to different conclusions? Here again, I asked copilot why two different AI came to two different conclusions. Here is its answer:

- **Copilot's View:** Based on current academic research, Copilot emphasizes the *lack of a clear linear correlation* and highlights the complexity of the relationship.
- **Deep Seek's View:** If Deep Seek claims a “strong inverse correlation,” it may be referencing specific timeframes or using a simplified statistical model that doesn't account for external factors like pandemics, geopolitical events, or economic shocks.

It seems that Copilot and Deep Seek, both harbor something to emphasize like human researchers. Then what are the elements that leads to the opposite analyses of the same theme?

Data used in analyses might have presented the specific difficulty in indifferent analysis. First, Trump's approval rate might be difficult index to obtain fairly. To see this, a recent approval rating is examined in Table 1.

Trump's job approval rate: divided public opinion

Currently, at the end of September 2025, Trumps's job approval rates show how deeply and widely American public opinion is divided. Among 10 pollsters, seven shows more than -10 spread, while only two show tie or +1. Their postures and inclinations have been quite consistent overtime showing their political stances clearly. (See table 1.)

Therefore, the concept of 'the average job approval rate' itself, in statistical sense, can be a contradiction in terms. This is also susceptible to political and journalistic manipulation, might present difficulty in statistical analysis.

To avoid unwanted fluctuation, this time, Gallup poll data are used for the period of the second Trump administration. Because this period, free from the pandemic, political situation and economic mood seems relatively stable. Using Gallup poll, first, the relation of

Table 1. Trump's Job Approval Rate ⁽¹⁾

	date	sample	Approve	Disapprove	spread
RCP Average *	9/17 - 9/29	—	44.6	53.2	Spread -8.6
<u>NY Times/Siena</u>	9/22 - 9/27	1313 RV	43	54	Spread -11
<u>Morning Consult</u>	9/26 - 9/28	2202 RV	46	52	Spread -6
<u>Economist/YouGov</u>	9/26 - 9/29	1518 RV	43	54	Spread -11
<u>Yahoo News</u>	9/25 - 9/29	1129 RV	44	55	Spread -11
<u>Rasmussen Reports</u>	9/23 - 9/29	1500 LV	49	49	Tie
<u>Pew Research</u>	9/22 - 9/28	3445 A	40	58	Spread -18
<u>NPR/PBS/Marist</u>	9/22 - 9/26	1329 RV	42	53	Spread -11
<u>RMG Research</u>	9/17 - 9/24	3000 RV	50	49	Spread+1
<u>Quantus Insights</u>	9/19 - 9/21	1000 LV	48	50	Spread -2
<u>Reuters/Ipsos</u>	9/19 - 9/21	1019 A	41	58	Spread -17

*RealClearPolitics Poll Average

44.6 Approve 53.2 Disapprove -8.6

Source: https://orig.realclearpolitics.com/epolls/latest_polls/

gas price and approval rate will be calculated to confirm AI's point of views.

Table 2 is the job approval rate of Donald Trump under his second administration. The average is little low compared with previous administrations, however, it shows consistent trend.

Table 3 is the historical retail gasoline price trend under second Trump administration. Table 4 is the calculated correlation between Trump job approval rate and gasoline prices under the second Trump administration by the author. The correlation coefficient is – 0.3988.

This means a weak inverse relation existing between gasoline prices and job approval rate, which is neither non-linear nor strong inverse relation. Of course, this data are of Trump's second term, which was supposed to be subject to various outer elements, however, neither of AI's analyses seems satisfying.

Another socio-economic element to correlate with job approval rate

Table 5 is U.S. monthly unemployment rate and table 6 shows correlation between unemployment and President's job approval rate.

From my previous studies, I have empirically noticed that strong relation exists between unemployment rate and President's job approval rate. To prove this, a little calculation is to be conducted. Table 5 shows U.S. monthly unemployment report, and Table 6 is the

correlation between unemployment and Presidential job approval rate under Trump second administration calculated by the author. The correlation efficient is -0.577, suggesting a relatively clear inverse relation existing between the two. -0.577 means there is a clear inverse linear relation recognized between unemployment and President's job approval rate. At least under the second Trump administration, up to August, job unemployment index is much clear socio-economic index to influence Trump administration's job approval rate than gas prices suggested by AI.

Table 2 Do you approve or disapprove of the way Donald Trump is handling his job as president? ⁽²⁾

Second-term trend			
	Approve	Disapprove	No opinion
	%	%	%
2025			
2025 Oct 1-16	41	54	5
2025 Sep 2-15	40	56	4
2025 Aug 1-20	40	56	4
2025 Jul 7-21	37	59	4
2025 Jun 3-19	40	57	3
2025 May 1-18	43	53	5
2025 Apr 1-14	44	53	3
2025 Mar 3-16	43	53	4
2025 Feb 3-16	45	51	5
2025 Jan 21-27	47	48	4
Gallup: https://news.gallup.com/poll/203198/presidential-approval-ratings-donald-trump.asp			

Table 3 US Retail Gas Price (Weekly)⁽³⁾ 1/3

Date	Value
October 20, 2025	3.151
October 13, 2025	3.193
October 06, 2025	3.253
September 29, 2025	3.248
September 22, 2025	3.301
September 15, 2025	3.296
September 08, 2025	3.319
September 01, 2025	3.303
August 25, 2025	3.272
August 18, 2025	3.251
August 11, 2025	3.243
August 04, 2025	3.265
July 28, 2025	3.247
July 21, 2025	3.246
July 14, 2025	3.254
July 07, 2025	3.251
June 30, 2025	3.288
June 23, 2025	3.338
June 16, 2025	3.265
June 09, 2025	3.235
June 02, 2025	3.256
May 26, 2025	3.288

Table 3 US Retail Gas Price (Weekly)⁽³⁾ 2/3

Date	Value
May 19, 2025	3.302
May 12, 2025	3.249
May 05, 2025	3.273
April 28, 2025	3.261
April 21, 2025	3.268
April 14, 2025	3.295
April 07, 2025	3.37
March 31, 2025	3.288
March 24, 2025	3.24
March 17, 2025	3.184
March 10, 2025	3.197
March 03, 2025	3.206
February 24, 2025	3.255
February 17, 2025	3.276
February 10, 2025	3.253
February 03, 2025	3.205
January 27, 2025	3.224
January 20, 2025	3.229
January 13, 2025	3.164
January 06, 2025	3.168
December 30, 2024	3.128
December 23, 2024	3.145

Table 3 US Retail Gas Price (Weekly)⁽³⁾ 3/3

Date	Value
December 16, 2024	3.137
December 09, 2024	3.131
December 02, 2024	3.156
November 25, 2024	3.166
November 18, 2024	3.168
November 11, 2024	3.176

Source: https://ycharts.com/indicators/us_gas_price

Note: Ap 07/25 and Mar 24/25 seem dubious, these are not used in ongoing analysis.

Table 4. Correlation between Gas Prices and Approval Rate Second Trump Administration

2025	Gas Prices	Approval Rate
Oct	3253	41
Sep	3303	40
Aug	3265	40
Jul	3251	37
Jun	3256	40
May	3273	43
April	3288	44
Mar	3206	43
Feb	3205	45
Jan	3229	47

$r = -0.39885627$

Compiled by the author

Table 5 US Monthly Unemployment by US Bureau of Labor Statistics ⁽⁴⁾

Month	Unemployment Rate	Change from Previous Month	Total Unemployed (Millions)
Jan-25	4.00%	-0.10%	6.8
Feb-25	4.10%	0.10%	7
Mar-25	4.20%	0.10%	7.1
Apr-25	4.20%	0.00%	7.2
May-25	4.20%	0.00%	7.2
Jun-25	4.10%	-0.10%	7
Jul-25	4.20%	0.10%	7.2
Aug-25	4.30%	0.10%	7.4

Source: <https://www.bls.gov/charts/employment-situation/civilian-unemployment-rate.htm>

Conclusion

AI's analysis on the effect of socio-economic index on Trump administration's job approval rate is neither sufficient nor convincing. Rather, AI analysis seems to prefer some journalistic topic to attract attention of readers than unattractive statistical findings. AI's quick answer can be misleading in some approach mentioned above.

Utilizing AI is a quick solution in a research project, however, we have to be especially careful for its data usage and analytical method and AI's hidden intentions. Or, our conclusion is led to interesting but irrelevant directions. AI analysis should be retained in its proper sphere of supplementary usage and a human researcher should constitute the research design.

Table 6 US Unemployment and Approval Rate

Month	Unemployment Rate	Change from Previous Month	Total Unemployed (Millions)	Approval Rate
Jan-25	4.00%	-0.10%	6.8	47
Feb-25	4.10%	0.10%	7	45
Mar-25	4.20%	0.10%	7.1	43
Apr-25	4.20%	0.00%	7.2	44
May-25	4.20%	0.00%	7.2	43
Jun-25	4.10%	-0.10%	7	40
Jul-25	4.20%	0.10%	7.2	37
Aug-25	4.30%	0.10%	7.4	40

$r = -0.57788$

Calculated by the author

References

- (1) Source: https://orig.realclearpolitics.com/epolls/latest_polls/
- (2) Source: <https://news.gallup.com/poll/203198/presidential-approval-ratings-donald-trump.aspx>
- (3) Source: https://ycharts.com/indicators/us_gas_price
- (4) Source: <https://www.bls.gov/charts/employment-situation/civilian-unemployment-rate.htm>

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