Revisiting Likely Voter Model 10 Years After

2010-2021

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Overview

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Abstract

- Social Scientists understand the importance of replicating research in theory, though researchers often do not practice it. The authors will revisit our earlier work (Rogers, Aida 2013) on the likely voter screen (LV screen) and evaluate if the idea still holds today.

Abstract

- Earlier work found many self-predicted voters do not vote (flake-out), and many self-predicted nonvoters do vote (flake-in). The authors hypothesize that this pattern will still hold.

Abstract

- We do not know how a surge in turnout on a historic scale changes the profiles of likely voter screen errors. Did LV screen capture the true electorate in a surge election, or did it fail to identify true voters, possibly contributing to the large errors in the 2020 Presidential and Senatorial polling we have witnessed?

Abstract

- We will use large-scale voter survey responses from 2020 presidential election surveys and individual-level validated votes for analysis.

Motivation

Table 1. Self-Prediction Accuracy Across Elections.

		2008 general election			2009 New Jersey general election			2011 Wisconsin recall election		
		Actually vote?			Actually vote?			Actually vote?		
		Yes (%)	No (%)	Total *N*	Yes (%)	No (%)	Total *N*	Yes (%)	No (%)	Total *N*
Self-predicted likelihood to vote	[Yes]	86.7	13.3	9,272	45.8	54.2	8,798	82.7	17.3	4,021
	Probably	74.4	25.6	1,004				59.6	40.4	282
	50–50	66.7	33.3	417				45.3	54.7	232
	[No]	54.7	45.3	201	29.3	70.7	3,149	39.5	60.5	473
	[Don't know]	76.3	23.7	131	42.4	57.6	1,318	51.1	48.9	92
	Total	84.1	15.9	11,025	41.5	58.5	13,265	24.9	75.1	5,100

Figure: From Rogers & Aida, 2013

The survey mode and sampling frame have changed. RDD+voter List phone (2011) to opt-in web (2020). People can change too!

Research Question

This research will address the following questions:

How good is the LV screen (LVS)?

What proportion of responses can we categorize as false positives and false negatives?

Timing

How does the timing of LVS response affect accuracy? (pre-COVID, summer, and post-labor day)

Partisanship

How does partisanship impact accuracy? Were Trump supporters more likely to be screened out from the LVS?

Data

- Data: Survey data collected by Civis Analytics, weekly tracking study in 2020. Total of thirty-three waves between March to November.
- Sample Frame: opt-in web panel matched to TargetSmart voter list (match rate varied from 40% to 50%).
- Typical n-size per wave was n=2400 (matched cases is around n=1200).
- Total n-size is n=43,769.

Analysis I : LVS and Vote

Response	Not Voted 2020G	Voted 2020G	Total
Definitely vote	7,340	15,811	23,151
	31.7	68.3	100
Probably vote	1,414	1,141	2,555
	55.34	44.66	100
50/50	1,617	693	2,310
	70	30	100
Probably not vote	778	154	932
	83.48	16.52	100
Definitely not ..	1,425	195	1,620
	87.96	12.04	100
Total	12,574	17,994	30,568
	41.13	58.87	100

As reported in prior research (Rogers, Aida, 2013), the self-stated likely voter screen not only fails to capture behavior, the response is skewed to more optimistic responses due to social desirability bias. (AUC = .63)

Analysis I : Turnout Score and Vote

Turnout Score	Note Voted 2020G	Voted 2020G
80-100	5,177 20.8	19,713 79.2
60-80	1,902 42.99	2,522 57.01
40-60	2,347 56.84	1,782 43.16
20-40	3,147 73.77	1,119 26.23
0-20	5,498 90.73	562 9.27
Total	18,071 41.29	25,698 58.71

Now let us replicate the same analysis using turnout scores from the voter list. As expected, revealed behaviors outperform stated behaviors. Especially when multiple revealed behaviors are combined into a single scale. The scale can be even more powerful if the machine learning method is used rather than the unsupervised method. (AUC = .77)

Analysis 2: Timing and LVS Accuracy

The patterns look consistent across months. It appears "No" responses are more accurate in the final two months.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Total
Definitely vote	68.1% 2,099	69.8% 2,265	69.3% 3,075	68.7% 3,050	70.6% 2,689	67.9% 3,708	66.5% 2,013	65.6% 3,440	69.4% 813	68.3% 23,152
Probably vote	47.4% 274	48.4% 289	44.9% 372	49.7% 360	47.0% 285	46.2% 407	44.3% 237	30.3% 297	23.5% 34	44.7% 2,555
50/50	31.9% 188	36.7% 270	34.6% 350	36.7% 300	30.1% 256	27.2% 412	21.4% 201	22.1% 285	16.7% 48	30.0% 2,310
Probably not vote	21.1% 71	15.3% 98	21.1% 142	25.8% 120	15.8% 95	14.9% 168	11.7% 77	9.4% 149	0.0% 12	16.5% 932
Definitely not vote	19.7% 117	17.3% 173	17.5% 217	9.8% 183	13.0% 162	9.3% 268	12.6% 174	4.9% 267	8.2% 61	12.0% 1,622
Total	60.3% 2,749	60.3% 3,095	59.8% 4,156	60.7% 4,013	61.5% 3,487	57.7% 4,963	56.1% 2,702	54.9% 4,438	60.4% 968	58.9% 30,571

Analysis 2: Turnout score and Turnout by Month

- Variability within each row is limited
- Variability in total row shows month to month response bias

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Total
80-100	77.6% 1,343	80.5% 2,287	80.5% 3,575	79.3% 3,635	78.8% 2,453	79.1% 2,354	80.8% 2,079	77.7% 2,784	78.6% 1,477	78.1% 2,306	78.6% 597	79.2% 24,890
60-80	58.1% 363	58.0% 393	55.8% 650	59.6% 602	55.1% 385	59.1% 403	57.0% 321	54.9% 490	52.9% 261	55.7% 463	67.7% 93	57.0% 4,424
40-60	38.3% 298	42.7% 293	43.1% 569	43.1% 540	44.6% 408	46.3% 374	44.2% 335	43.9% 492	42.6% 258	42.8% 477	37.6% 85	43.2% 4,129
20-40	24.8% 327	25.8% 322	29.5% 596	26.8% 545	25.2% 397	26.7% 386	26.6% 346	26.8% 526	24.1% 286	25.0% 460	17.3% 75	26.2% 4266
0-20	7.9% 442	7.1% 591	9.1% 888	7.6% 785	11.5% 513	11.5% 496	10.6% 405	11.5% 671	9.3% 419	8.3% 732	6.8% 118	9.3% 6,060
Total	53.5% 2,773	59.7% 3,886	59.6% 6,278	60.3% 6,107	59.8% 4,156	60.7% 4,013	61.5% 3,486	57.7% 4,963	56.2% 2,701	54.9% 4,438	60.4% 968	58.7% 43,769

Analysis 2: Summary

- LVS responses, especially "no" responses, seem more accurate in the final two months. This indicates, among those who are not constrained by social desirability (saying prob not vote, def not vote), the prediction of their behavior is more accurate when prediction is made closer to the election day.

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- Evaluation with turnout score shows the existence of month-to-month response bias even when the fundamental survey condition is identical.

Analysis 3: LVS and Presidential Vote

- No sign of Trump supporters lie at a higher rate than Biden supporters
- Though we do not know if vote preference is trustworthy.

	Donald Trump	Joe Biden	Others	Don't Know
Definitely vote	68.0% 10,186	69.0% 11,993	63.5% 956	68.3% 23,135
Probably vote	44.0% 1,123	44.0% 1,075	49.1% 352	44.7% 2,550
50/50	29.5% 821	29.3% 822	31.5% 666	30.0% 2,309
Probably not vote	12.2% 304	21.7% 277	16.2% 351	16.5% 932
Definitely not vote	12.0% 349	11.9% 370	12.1% 892	12.0% 1,611
Total	60.5% 12,783	62.5% 14,537	35.9% 3,217	58.9% 30,537

Analysis 3: LVS and Partisanship Score

- If a pollster terminated all of "50/50", "Prob not vote" and "Def note vote", it will result in slight bias under-representing Republican voters.

	Likely Rep 1:0-20	2:20-40	3:40-60	4:60-80	**Likely Dem** 5:80-100
Definitely vote	77.6% 6,032	61.1% 2,787	55.8% 2,968	58.9% 3,653	72.9% 7,711
Probably vote	59.3% 391	38.9% 414	36.6% 557	36.8% 557	53.3% 636
50/50	46.6% 264	27.0% 363	20.2% 494	25.2% 606	37.6% 583
Probably not vote	27.4% 84	14.5% 173	12.8% 243	11.2% 242	25.3% 190
Definitely not vote	33.3% 126	11.9% 270	7.0% 457	6.5% 463	19.4% 304
Total	74.0% 6,897	50.4% 4,007	42.8% 4,719	46.5% 5,521	66.7% 9,424

Analysis: Partisanship

- Republican voters turnout was higher than what the model suggested.
- Good example of actual voter enthusiasm higher than past benchmarks.

	1:0-20	2:20-40	3:40-60	4:60-80	5:80-100
80-100	82.0% 7,752	74.7% 2,605	74.3% 2,501	74.2% 3,196	81.3% 8,836
60-80	62.9% 736	56.9% 740	54.7% 856	55.3% 952	56.5% 1,140
40-60	51.1% 566	43.8% 676	38.3% 892	37.7% 983	47.8% 1,012
20-40	38.3% 413	22.7% 765	22.0% 967	25.2% 1,112	29.1% 1,009
0-20	20.0% 404	8.4% 1,062	6.7% 1,778	7.6% 1,781	13.1% 1,035
Total	74.4% 9,871	50.0% 5,848	42.9% 6,994	45.9% 8,024	67.1% 13,032

Analysis: Partisanship

- Some evidence that Republican voters were more likely understate (thus missing some Trump voters) in LV screen

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- Some evidence that Republican voters were more likely understate (thus missing some Trump voters) in LV screen
- Actual turnout of Republican voters were higher than what turnout score indicated.

Takeaway

	Turnout Score				
	80-100	**60-80**	**40-60**	**20-40**	**0-20**
Definitely vote	80.1% 15,927	61.1% 2,149	52.0% 1,767	35.1% 1,541	15.6% 1,767
Probably vote	72.4% 837	53.8% 355	44.2% 437	25.5% 420	8.7% 506
50/50	64.4% 430	43.7% 277	29.0% 424	19.3% 554	10.4% 625
Probably not vote	63.8% 105	31.2% 93	16.8% 161	9.0% 211	3.3% 362
Definitely not vote	50.7% 138	27.7% 119	20.2% 188	9.3% 353	2.6% 822

The accuracy of the statement (LVS) depends on if the response is consistent with past behaviors (Rogers, Aida 2013). While it is not very predictive by own, it still explains variation within each turnout score class.

Summary

- LVS responses, especially "no" responses, seem more accurate in the final two months. This indicates, among those who are not constrained by social desirability (saying prob not vote, def not vote), the prediction of their behavior is more accurate when prediction is made closer to the election day.
- There were more errors in LVS among Republicans, along with higher actual turnout than turnout score; it is plausible there was an in-cycle movement of voter enthusiasm that increased Republican turnout.
- The best practice in pre-election polls is not to TERMINATE respondents by LVS, but rather use turnout score class for weighting.

The End