Colorado 2014: Comparisons of Predicted and Actual Turnout

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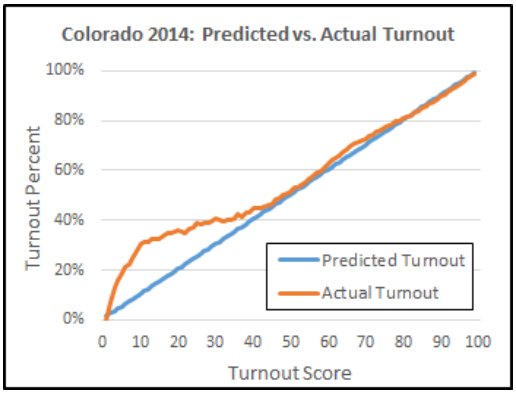
Executive Summary



Analysis of voter turnout in the 2014 midterm election in Colorado shows that low-propensity voters, including young voters, significantly overperformed their predicted turnout levels. This report also contains analyses of predicted versus actual turnout among various subgroups, including those based on demographics, partisanship, and vote history. While not conclusive, the evidence generated by these analyses supports the assertion that Colorado's universal vote-by-mail system -- which debuted in 2014 -- likely played a role in increasing turnout.

1. Background

In 2014 Colorado instituted a new system of voting in which all active voters would receive their ballots in the mail. Voters could then either mail back those ballots or drop them off at one of many official voting centers. The ostensible goal of this program was to make voting easier for more citizens, and to reduce costs.

Without a control group, it is impossible to know whether Colorado's Universal Vote By Mail (UVBM) system affected turnout. There are, however, methods for making *reasonable inferences* about UVBM's effect. The analyses in this report compares predicted voter turnout -- in the form of a respected turnout model -- to actual voter turnout in the 2014 election.

2. Methodology and Descriptive Statistics

2.1 Methods

All analyses in this report aggregate voters into groups according to particular variables: age brackets, model score ranges, racial categories, and so on. For each of these aggregated groups, two key averages are calculated. The first is the average Clarity Turnout Model score (see below for model details). A group's average turnout score is, in essence, the percent of that group that was expected to vote in 2014. For instance, within voters listed as "active" on the Colorado voter file, female Democrats had an average turnout score of 70.6. While perfect prediction is impossible, the political scientists who built this model would tell you that their best guess before Election Day 2014 was that 70.6% of female Democrats would vote.

The second figure calculated for each group in this report is their actual turnout percentage. For instance, female Democrats in Colorado actually turned out at a rate of 73.2%. Looking at the difference between predicted and actual turnout is the crux of the analyses in this report.

2.2 About the Clarity Turnout Model

Like most turnout models, Clarity Campaigns generated its 2014 turnout scores by using data from a similar previous election (2010) to train and validate a model. As documented by Clarity:

> "This model was trained on randomly selected voters from the National Voter File Coop in 50 states and DC based on their 2010 general turnout history. A look-up table was generated of vote history patterns and their probability of predicting turnout in a mid-term general election. Additional sub-models were created using a rules-based classifier on a variety of consumer and vote history synthetic variables. All sub-models were adjusted to take into account the four years since the previous election. The final score was generated using a logistic regression built on top of the sub-models and turnout pattern prediction. Each voter was assigned a weighted probability of turning out, which is that voter's score."[1]

Key variables in model include past vote history, age, gender, marital status, household turnout history, migration history, and various appended consumer variables including home ownership.

Importantly for these analyses, the turnout model did not make any adjustments to account for what might happen in Colorado in 2014 because of UVBM (or any other Colorado-specific quirks). While regional and state-level sub-models may have been incorporated, the final model was national in nature. As mentioned later in this report, the model was shown to be quite accurate nationally.

2.3 Descriptive Statistics

The December 2014 Colorado voter file, as transmitted by TargetSmart, contains 4,563,192 records. However, only 64% of these records were designated as "Active" voters on the file (a status defined by the Secretary of State). The analyses in this report focuses on these active voters.

[1] Model Release Notes, Clarity National Likely Voter Model V2

Of the 2,924,842 active voters, 97% had received a Clarity turnout score. The remaining 3% (91,721) were necessarily excluded from all analyses below. (It is likely many of that these unscored voters were people who registered very late in the cycle.) After this exclusion, the total pool for analysis was 2,833,121 voters.

Descriptive statistics of these 2.8 million voters are represented below.

Party	Count	Percent
Democrat	876,717	30.9%
Republican	930,416	32.8%
Green	8,082	0.3%
Libertarian	23,933	0.8%
No Party	987,314	34.8%
Other	6,659	0.2%
Total	2,833,121	100.0%

Age	Count	Percent
18-24	219,677	7.8%
25-34	476,881	16.8%
35-49	721,501	25.5%
50-64	830,366	29.3%
65-79	453,607	16.0%
80+	131,088	4.6%
Total	2,833,121	100.0%

Gender	Count	Percent
Female	1,473,769	52.0%
Male	1,359,339	48.0%
Unknown	13	0.0%
Total	2,833,121	100.0%

Marital Status	Count	Percent
Married	1,330,169	47.0%
Unknown	151,991	5.4%
Unmarried	1,350,961	47.7%
Total	2,833,121	100.0%

Imputed Race	Count	Percent
Asian	48,699	1.7%
Black	33,271	1.2%
Hispanic	292,052	10.3%
Other/Unknown	200,979	7.1%
White	2,258,120	79.7%
Total	2,833,121	100.0%

Of these 2.8 million active voters, 2014 turnout was approximately 70%. The voter file shows substantial numbers of both absentee and mailed ballots in 2014, but it is unclear whether there is a meaningful distinction between these two designations. (A smaller number of votes cast at polling places, presumably at drop-off centers.)

2014 General Vote	Count	Percent
Did Not Vote	856,705	30.2%
Absentee	1,380,790	48.7%
Mail	527,441	18.6%
Polling Place	68,185	2.4%
Total	2,833,121	100.0%

TargetSmart receives these vote-method designations from the Colorado Secretary of State and/or county elections officers. It is not uncommon for the absentee/mail designation to vary by county. For the purpose of the analyses below, all vote methods have been combined into a binary turnout variable.

3. Results

3.1 Turnout Model Cohort Results

Overall, turnout in Colorado was 3.3 points higher than the Clarity Turnout Model would have predicted. This is due almost entirely to overperformance among those with the lowest turnout scores.

Turnout Model Score	N	Predicted Turnout	Actual Turnout	Difference
Range: 0-10	272,515	5.9%	19.3%	13.3%
Range: 10-20	139,934	14.4%	32.7%	18.3%
Range: 20-30	130,884	25.0%	37.5%	12.5%
Range: 30-40	148,713	35.1%	41.1%	5.9%
Range: 40-50	164,311	44.8%	47.1%	2.2%
Range: 50-60	161,057	55.1%	56.4%	1.3%
Range: 60-70	189,813	65.0%	67.9%	2.9%
Range: 70-80	227,422	75.2%	76.9%	1.6%
Range: 80-90	338,209	85.5%	85.1%	-0.4%
Range: 90-100	1,060,263	95.8%	95.1%	-0.7%
Total	2,833,121	66.4%	69.8%	3.3%

Of course, it is important to remember that overperformance is inherently easier for people with lower scores. Voters with high turnout scores have less room to

improve. Still, the magnitude of the overperformance among the bottom cohorts is remarkable. The following pages break the scores down further into single percentages.

Turnout Model Score	N	Predicted Turnout	Actual Turnout	Difference
Range: 1.00-2.00	7	1.9%	0.0%	-1.9%
Range: 2.00-3.00	5,330	2.7%	6.9%	4.2%
Range: 3.00-4.00	44,476	3.5%	12.8%	9.3%
Range: 4.00-5.00	52,435	4.4%	16.0%	11.6%
Range: 5.00-6.00	44,988	5.4%	19.1%	13.6%
Range: 6.00-7.00	38,706	6.4%	21.0%	14.6%
Range: 7.00-8.00	33,285	7.4%	22.3%	14.8%
Range: 8.00-9.00	28,209	8.4%	24.7%	16.3%
Range: 9.00-10.00	25,079	9.4%	27.8%	18.3%
Range: 10.00-11.00	21,576	10.4%	30.9%	20.5%
Range: 11.00-12.00	16,911	11.4%	31.4%	20.0%
Range: 12.00-13.00	14,899	12.4%	31.0%	18.6%
Range: 13.00-14.00	13,772	13.4%	32.3%	18.9%
Range: 14.00-15.00	12,671	14.4%	32.6%	18.2%
Range: 15.00-16.00	12,405	15.4%	32.6%	17.1%
Range: 16.00-17.00	11,456	16.5%	33.6%	17.1%
Range: 17.00-18.00	11,667	17.4%	34.8%	17.4%
Range: 18.00-19.00	12,174	18.4%	34.9%	16.5%
Range: 19.00-20.00	12,403	19.5%	35.5%	16.1%
Range: 20.00-21.00	12,280	20.5%	35.8%	15.3%
Range: 21.00-22.00	12,889	21.4%	35.6%	14.2%
Range: 22.00-23.00	13,161	22.5%	34.9%	12.4%
Range: 23.00-24.00	13,151	23.5%	36.3%	12.8%
Range: 24.00-25.00	13,516	24.5%	37.4%	12.9%
Range: 25.00-26.00	13,042	25.5%	38.8%	13.3%
Range: 26.00-27.00	13,209	26.5%	38.3%	11.9%
Range: 27.00-28.00	12,965	27.5%	39.1%	11.6%
Range: 28.00-29.00	13,162	28.4%	39.2%	10.8%
Range: 29.00-30.00	13,509	29.5%	39.3%	9.9%
Range: 30.00-31.00	13,165	30.5%	40.4%	10.0%
Range: 31.00-32.00	14,075	31.4%	40.0%	8.6%
Range: 32.00-33.00	14,238	32.5%	39.4%	6.9%
Range: 33.00-34.00	13,971	33.5%	40.0%	6.5%

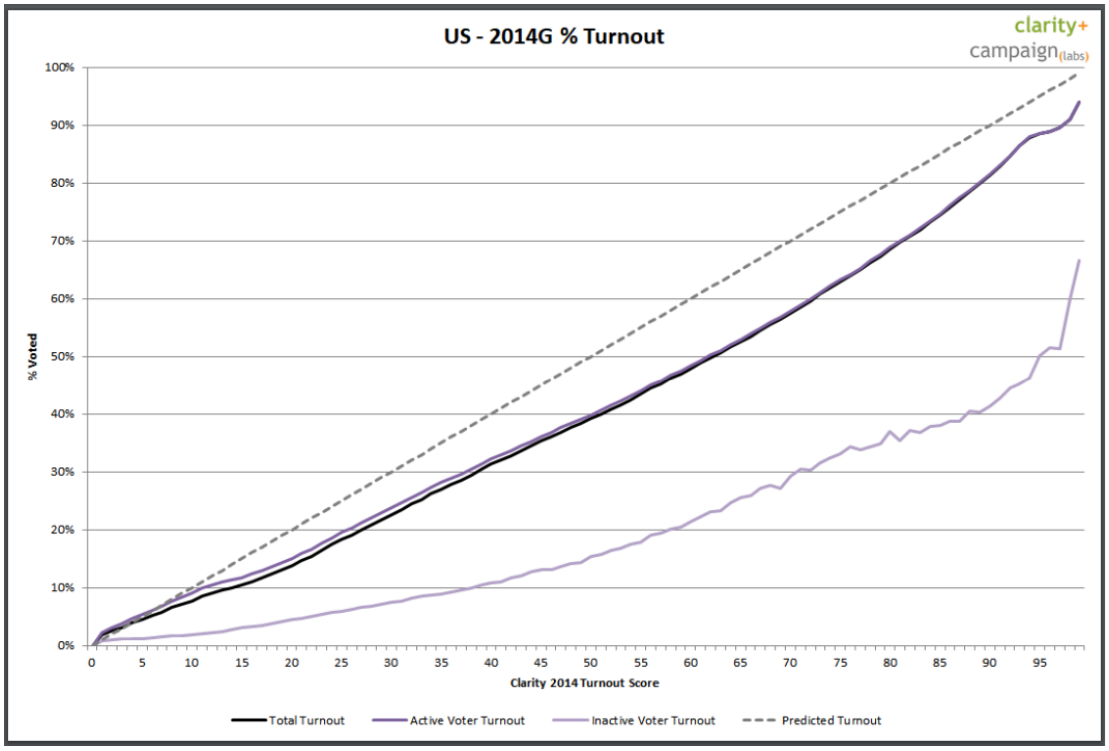
Turnout Model Score	N	Predicted Turnout	Actual Turnout	Difference
Range: 34.00-35.00	15,101	34.4%	40.2%	5.8%
Range: 35.00-36.00	14,560	35.5%	40.7%	5.3%
Range: 36.00-37.00	15,920	36.4%	42.3%	5.8%
Range: 37.00-38.00	15,198	37.5%	41.2%	3.8%
Range: 38.00-39.00	15,835	38.4%	42.9%	4.5%
Range: 39.00-40.00	16,650	39.4%	42.9%	3.4%
Range: 40.00-41.00	16,700	40.4%	44.6%	4.2%
Range: 41.00-42.00	16,939	41.5%	44.8%	3.4%
Range: 42.00-43.00	17,239	42.5%	45.1%	2.6%
Range: 43.00-44.00	17,252	43.4%	45.3%	1.8%
Range: 44.00-45.00	17,100	44.4%	46.0%	1.5%
Range: 45.00-46.00	16,625	45.5%	46.9%	1.4%
Range: 46.00-47.00	15,807	46.4%	48.3%	1.8%
Range: 47.00-48.00	15,730	47.4%	49.3%	1.8%
Range: 48.00-49.00	15,189	48.4%	50.1%	1.7%
Range: 49.00-50.00	15,730	49.5%	51.1%	1.6%
Range: 50.00-51.00	15,163	50.4%	51.4%	1.0%
Range: 51.00-52.00	15,835	51.5%	53.3%	1.8%
Range: 52.00-53.00	15,192	52.5%	53.3%	0.8%
Range: 53.00-54.00	15,769	53.4%	54.6%	1.2%
Range: 54.00-55.00	15,838	54.5%	55.4%	0.9%
Range: 55.00-56.00	16,086	55.5%	56.6%	1.2%
Range: 56.00-57.00	16,328	56.5%	58.1%	1.6%
Range: 57.00-58.00	16,674	57.4%	59.4%	1.9%
Range: 58.00-59.00	17,115	58.5%	59.7%	1.3%
Range: 59.00-60.00	17,057	59.5%	60.7%	1.3%
Range: 60.00-61.00	17,961	60.5%	62.8%	2.3%
Range: 61.00-62.00	18,483	61.5%	64.1%	2.7%
Range: 62.00-63.00	19,235	62.5%	65.1%	2.7%
Range: 63.00-64.00	19,331	63.5%	66.2%	2.7%
Range: 64.00-65.00	19,350	64.5%	67.2%	2.8%
Range: 65.00-66.00	19,189	65.4%	68.6%	3.2%
Range: 66.00-67.00	19,100	66.4%	69.9%	3.5%
Range: 67.00-68.00	18,824	67.5%	70.7%	3.2%

Turnout Model Score	N	Predicted Turnout	Actual Turnout	Difference
Range: 68.00-69.00	19,083	68.4%	71.4%	3.0%
Range: 69.00-70.00	19,257	69.5%	72.4%	2.9%
Range: 70.00-71.00	19,683	70.5%	72.8%	2.4%
Range: 71.00-72.00	20,213	71.5%	73.7%	2.3%
Range: 72.00-73.00	21,117	72.5%	74.4%	2.0%
Range: 73.00-74.00	21,782	73.5%	75.6%	2.2%
Range: 74.00-75.00	22,166	74.5%	76.4%	2.0%
Range: 75.00-76.00	22,934	75.5%	77.3%	1.8%
Range: 76.00-77.00	23,512	76.5%	78.1%	1.6%
Range: 77.00-78.00	24,471	77.5%	78.5%	1.0%
Range: 78.00-79.00	25,493	78.4%	79.5%	1.1%
Range: 79.00-80.00	26,051	79.5%	80.0%	0.5%
Range: 80.00-81.00	26,783	80.5%	81.3%	0.8%
Range: 81.00-82.00	27,742	81.5%	81.7%	0.3%
Range: 82.00-83.00	28,676	82.5%	82.4%	0.0%
Range: 83.00-84.00	29,651	83.5%	83.3%	-0.2%
Range: 84.00-85.00	31,249	84.5%	83.9%	-0.5%
Range: 85.00-86.00	32,794	85.5%	85.1%	-0.3%
Range: 86.00-87.00	35,330	86.5%	85.9%	-0.6%
Range: 87.00-88.00	38,367	87.5%	86.8%	-0.6%
Range: 88.00-89.00	41,448	88.5%	87.7%	-0.7%
Range: 89.00-90.00	46,169	89.5%	88.6%	-0.9%
Range: 90.00-91.00	51,239	90.5%	89.7%	-0.8%
Range: 91.00-92.00	57,831	91.5%	90.5%	-0.9%
Range: 92.00-93.00	67,557	92.5%	91.7%	-0.8%
Range: 93.00-94.00	78,652	93.5%	92.7%	-0.8%
Range: 94.00-95.00	94,232	94.5%	93.7%	-0.8%
Range: 95.00-96.00	118,761	95.5%	94.9%	-0.6%
Range: 96.00-97.00	158,507	96.5%	95.7%	-0.7%
Range: 97.00-98.00	202,015	97.5%	96.9%	-0.6%
Range: 98.00-99.00	209,325	98.4%	97.9%	-0.5%
Range: 99.00-100.00	22,144	99.1%	98.8%	-0.3%
Total	2,833,121	66.4%	69.8%	3.3%

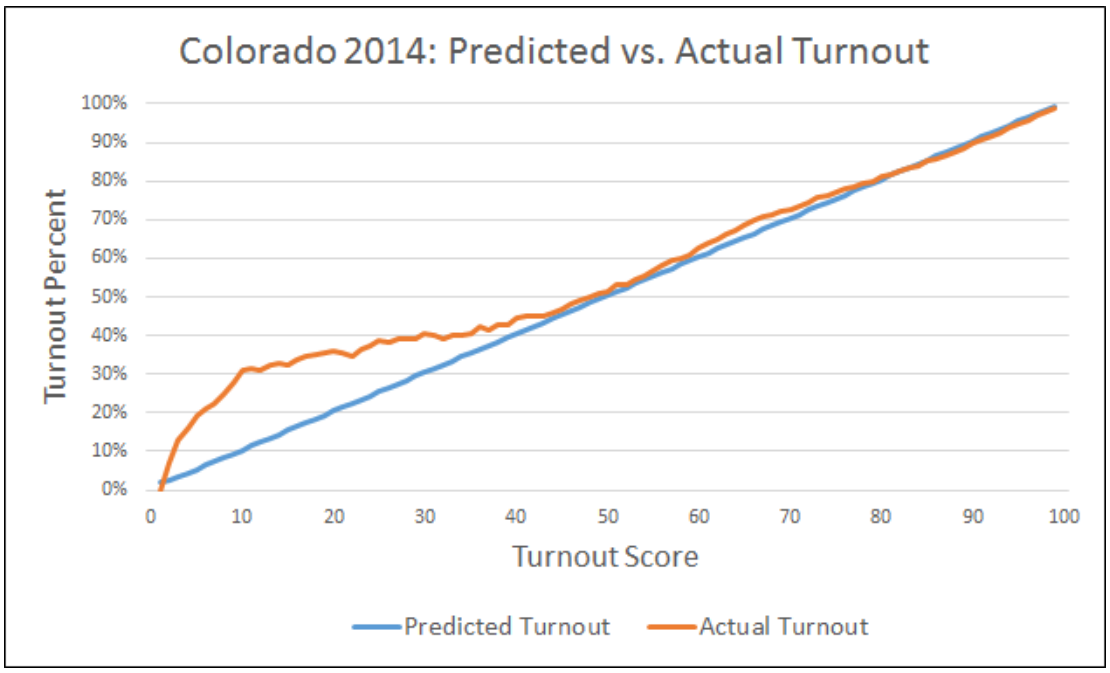
Above the score threshold of 40 (i.e. 40% predicted turnout) the Clarity Turnout Model proved reasonably accurate. No cohort above this threshold was off by more than a few points. At the lower end of the spectrum, however, turnout was often much higher than predicted. Voters who had been predicted to turn out at a rate of

10% actually turned out at a rate of nearly 31%. Voters who had been predicted to vote 20% of the time actually voted 36% of the time, and so on.

We cannot know whether UVBM is the root cause of these voters' overperformance (or, to put it another way, the model's underprediction). But Colorado appears to be unique in this particular pattern of predicted-versus-actual performance when looking at the Clarity Turnout Model nationwide. A post-election analysis by Clarity of its model across all states showed a much more linear relationship between predicted and actual turnout.



Nationally, the Clarity turnout model slightly ~~underpredicted~~ turnout, particularly in the middle-to-upper end of the spectrum. On the whole, however, Clarity's model was reasonably accurate; the linear relationship between predicted and actual turnout is a good measure of reliability for a turnout model. As shown in the tables above and the chart below, however, the Clarity turnout model's predictions for Colorado's active voters were quite accurate *except* for the lower end of the spectrum.



What made Colorado different? Why did low-propensity voters voters in Colorado vote at rates that were significantly higher than expected, even as low-propensity voters nationwide voted close to (or slightly below) their predicted levels? While it is possible to imagine any number of explanations -- targeted GOTV programs, for example -- it is not unreasonable to conclude that UVBM played a large role.

3.2 Demographic Comparisons

Age is a usually strong predictor of turnout, particularly in non-presidential elections. Young people simply do not vote at the same rates as older people. Thus, it is not a surprise that younger people had lower predicted turnout in Colorado in 2014. Given the evidence in the previous section, it is also not surprising that young people strongly overperformed their predicted turnout. There is a strong overlap between younger voters and low-propensity voters.

Age Bracket	N	Predicted Turnout	Actual Turnout	Difference
Age: 18-24	219,677	26.6%	38.7%	12.1%
Age: 25-34	476,881	41.1%	48.6%	7.4%
Age: 35-49	721,501	63.1%	65.9%	2.8%
Age: 50-64	830,366	79.3%	80.8%	1.5%
Age: 65-79	453,607	88.0%	89.2%	1.3%
Age: 80+	131,088	87.4%	82.5%	-4.9%
Age: Total	2,833,121	66.4%	69.8%	3.3%

While the youngest voters overperformed their predicted turnout by twelve points, the oldest voters underperformed by five points. If we posit that some of the elevated youth turnout is thanks to UVBM, must we also conclude that some older voters might have been dissuaded by UVBM? Perhaps. Though, again, it is important to caution that with any group with very high scores -- such as the elderly -- there is inherently more opportunity for underperformance than overperformance. Still, it is at least plausible that after a lifetime of voting at polling places, at least a few older voters might have found their mailed ballots confusing. (One would think that mailed ballots would actually be a boon to voters in assisted living facilities, but perhaps this benefit was offset by other negative effects such as delivery issues.)

Gender	N	Predicted Turnout	Actual Turnout	Difference
Female	1,473,769	67.4%	70.3%	2.9%
Male	1,359,339	65.4%	69.2%	3.8%
Total	2,833,121	66.4%	69.8%	3.3%

Gender differences in over- versus under-performance were slight. Males outperformed their predicted score to a slightly greater degree, but the difference is minimal in comparison to the age and general turnout analyses.

Marital Status	N	Predicted Turnout	Actual Turnout	Difference
Married	1,330,169	76.2%	78.6%	2.4%
Unmarried	1,350,961	58.4%	61.5%	3.1%
Unknown	151,991	52.6%	65.5%	12.9%
Total	2,833,121	66.4%	69.8%	3.3%

Likewise, there were not large overperformance differences between married and unmarried voters. The small number of voters whose marital status was unknown overperformed by thirteen points, but this mostly reflects the younger average age for voters with missing marital status information.

Racial differences in overperformance were also relatively small. Traditionally Democratic groups such as Blacks, Hispanics, and Asians had lower levels of overperformance compared to Whites. It is worth noting, however, that the race variable on the Colorado voter file is imputed -- most likely by matching a voter's name and geography against racial probability models. Exit polls showed higher levels of non-White turnout than the imputed numbers below would suggest.[2] The numbers below should therefore be viewed with some caution.

Imputed Race	N	Predicted Turnout	Actual Turnout	Difference
Asian	48,699	57.0%	59.2%	2.2%
Black	33,271	62.7%	64.5%	1.8%
Hispanic	292,052	53.8%	54.0%	0.2%
Other/Unknown	200,979	61.8%	65.7%	3.8%
White	2,258,120	68.8%	72.5%	3.7%
Total	2,833,121	66.4%	69.8%	3.3%

Still, even if we had more reliable figures for race than those above, there is little evidence to suggest a strong association between race and overperformance. Certainly, the association is less strong than for age.

3.3 Partisanship Comparisons

There are three ways to look at a voter's partisanship. The most obvious method is to look at party registration, which Colorado records on its voter file. The second method examines which partisan presidential primaries voters have chosen to participate in (or caucuses, in Colorado's case). The final method uses the Clarity Partisanship Model, which generates a score for each voter based on massive

[2] http://www.cbsnews.com/elections/2014/senate/colorado/exit/

numbers of surveys. This model was the official partisanship model used by the Democratic National Committee in 2014.

Party Registration	N	Predicted Turnout	Actual Turnout	Difference
Democrat	876,717	69.7%	72.5%	2.8%
Republican	930,416	76.5%	80.3%	3.7%
Green	8,082	54.0%	61.2%	7.3%
Libertarian	23,933	52.3%	61.2%	8.9%
No Party	987,314	54.6%	57.8%	3.1%
Other	6,659	53.7%	59.0%	5.3%
Total	2,833,121	66.4%	69.8%	3.3%

Registered Republicans overperformed slightly more than registered Democrats overperformed, though the difference is not large in the context of other analyses in this report. Greens, Libertarians, and other third party registrants had the highest levels of overperformance, though these groups are fairly small.

2008 Prez Caucus	N	Predicted Turnout	Actual Turnout	Difference
	2,511,783	62.9%	66.6%	3.8%
D	143,257	93.7%	93.6%	0.0%
R	178,081	95.2%	94.8%	-0.5%
Total	2,833,121	66.4%	69.8%	3.3%

Since 2012 only had presidential primaries on the Republican side, 2008 was the best choice for examining partisan caucus-goers on both sides. Unsurprisingly, caucus-goers are a small and unique bunch; these die-hard Democrats and Republicans had incredibly high predicted turnout for 2014, which they more or less met.

Partisanship Score	N	Predicted Turnout	Actual Turnout	Difference
Range: .00-10.00	816,943	81.1%	83.3%	2.3%
Range: 10.00-20.00	203,551	59.9%	64.8%	4.9%
Range: 20.00-30.00	109,662	58.9%	63.3%	4.3%
Range: 30.00-40.00	95,596	55.9%	59.5%	3.6%
Range: 40.00-50.00	113,954	49.8%	55.9%	6.1%
Range: 50.00-60.00	136,965	47.9%	52.3%	4.4%
Range: 60.00-70.00	162,353	45.1%	53.1%	7.9%
Range: 70.00-80.00	166,464	55.1%	58.6%	3.5%
Range: 80.00-90.00	284,484	58.0%	62.1%	4.2%
Range: 90.00-100.00	743,148	71.0%	72.8%	1.8%
Total	2,833,121	66.4%	69.8%	3.3%

Using the Clarity Partisanship Model as a lens for examining partisan differences in overperformance, we can get a somewhat more nuanced view. Again, the die-hards at either end of the spectrum were predicted to have high turnout and only exceeded expectations by a little. Voters predicted to be most Republican (i.e. those with scores under 10) overperformed by a little over two points, while voters predicted to be the most Democratic (i.e. those with scores above 90) overperformed by just under two points.

The highest levels of overperformance were among those with middle-of-the-road partisanship scores. Voters with scores between 60 and 70 -- i.e. potential Democratic leaners -- turned out at a rate eight points higher than predicted. Voters with scores between 40 and 50 turned out at a rate six points higher than predicted. Historically, voters in these middle bands of partisanship (particularly 40-60 but also 30-70) have been prime targets for persuasion messaging by campaigns. It is also worth noting that young people and others without much history of voting are often placed in the middle of the spectrum.

3.4 Previous Vote Methods

Prior to 2014, a large majority of Coloradans -- over 70% in 2012, for example -- voted by returning mailed-out "absentee" ballots." While it might be tempting to

view Colorado's UVBM system as little more than "absentee ballots on steroids," that would obscure a subtle but profound distinction. While Colorado's "permanent absentee" system made ballots very accessible, voters still had to apply to receive them. The new UVBM system arguably abolished traditional absentee ballots, too, since every registered voter would now receive ballot (a mailed-out one, to be sure), regardless of whether they asked for or even expected one. On the other hand, it is plausible that previous absentee voters experienced less disruption with UVBM. The chart below examines 2014 overperformance broken out by whether, and by what method, people had voted in 2012.

Vote Method in 2012	N	Predicted Turnout	Actual Turnout	Difference
Did Not Vote	507,333	14.7%	29.0%	14.4%
Absentee	1,702,471	82.0%	82.3%	0.3%
Early	219,961	75.7%	79.4%	3.7%
Polling Place	403,338	61.0%	62.7%	1.7%
Total	2,833,121	66.4%	69.8%	3.3%

People who did not vote in 2012 had the greatest level of 2014 overperformance. This is not surprising, given the analyses in the previous sections. People who did not vote in 2012 are largely those who were very young and/or had little previous history of voting (or who were not registered/eligible in 2012), and would therefore end up with very low predicted turnout scores.

Notably, people who had voted absentee in 2012 had almost no overperformance in 2014, whereas people who had voted in polling locations (either early or on election day) overperformed just slightly. These numbers are all fairly small, so it is important not to overinterpret. But the pattern is consistent with the idea that UVBM would have a smaller effect on those who had voted by mail previously.

3.5 Multi-dimensional Comparisons

All of the variables in the above analyses can be combined for deep-dive comparisons. A few of these multi-dimensional analyses are presented below. The

results largely follow the patterns seen above, with few unexpected results for "hidden" subgroups.

Age and Gender	N	Predicted Turnout	Actual Turnout	Difference
18-24 F	111,034	27.4%	40.5%	13.1%
18-24 M	108,636	25.8%	36.9%	11.1%
25-34 F	246,205	42.5%	50.3%	7.8%
25-34 M	230,673	39.7%	46.8%	7.1%
35-49 F	370,193	64.3%	66.4%	2.1%
35-49 M	351,308	61.9%	65.4%	3.5%
50-64 F	431,846	79.9%	80.7%	0.8%
50-64 M	398,519	78.7%	81.0%	2.3%
65-79 F	237,332	88.0%	88.8%	0.8%
65-79 M	216,273	88.0%	89.7%	1.8%
80+ F	77,158	86.3%	80.8%	-5.5%
80+ M	53,930	89.0%	84.9%	-4.1%
Total	2,833,121	66.4%	69.8%	3.3%

Party and Gender	N	Predicted Turnout	Actual Turnout	Difference
Democrat Female	520,550	70.6%	73.2%	2.7%
Democrat Male	356,162	68.3%	71.4%	3.1%
Green Female	3,489	54.8%	62.9%	8.1%
Green Male	4,593	53.3%	60.0%	6.7%
Libertarian Female	8,943	50.6%	58.5%	7.9%
Libertarian Male	14,990	53.4%	62.8%	9.4%
No Party Female	479,016	55.1%	57.6%	2.6%
No Party Male	508,291	54.2%	57.9%	3.7%
Other Female	2,683	54.8%	59.6%	4.8%
Other Male	3,976	53.0%	58.6%	5.6%
Republican Female	459,088	77.3%	80.6%	3.3%
Republican Male	471,327	75.8%	80.0%	4.2%
Total	2,833,121	66.4%	69.8%	3.3%

Marital, Age, Gender	N	Predicted Turnout	Actual Turnout	Difference
Married 18-24 F	40,014	35.6%	51.6%	15.9%
Married 18-24 M	41,621	33.6%	48.0%	14.4%
Married 25-34 F	89,441	52.6%	59.4%	6.8%
Married 25-34 M	85,278	49.9%	54.8%	4.9%
Married 35-49 F	170,230	73.2%	74.7%	1.5%
Married 35-49 M	164,814	71.1%	73.0%	1.9%
Married 50-64 F	214,579	86.4%	86.9%	0.5%
Married 50-64 M	208,183	85.5%	86.7%	1.2%
Married 65-79 F	122,258	92.2%	93.1%	0.8%
Married 65-79 M	132,752	91.8%	93.3%	1.5%
Married 80+ F	27,882	91.8%	86.8%	-5.0%
Married 80+ M	33,116	92.6%	89.1%	-3.6%
Unknown 18-24 F	10,782	23.5%	51.9%	28.3%
Unknown 18-24 M	8,749	21.9%	45.9%	24.0%
Unknown 25-34 F	22,661	38.5%	58.3%	19.8%
Unknown 25-34 M	17,446	36.1%	58.0%	22.0%
Unknown 35-49 F	20,939	53.8%	61.3%	7.5%
Unknown 35-49 M	18,771	52.9%	64.1%	11.3%
Unknown 50-64 F	16,847	69.9%	76.0%	6.1%
Unknown 50-64 M	15,341	68.6%	76.2%	7.7%
Unknown 65-79 F	7,963	82.7%	85.8%	3.1%
Unknown 65-79 M	6,475	81.0%	86.2%	5.2%
Unknown 80+ F	4,178	85.4%	81.0%	-4.5%
Unknown 80+ M	1,839	85.5%	80.4%	-5.1%
Unmarried 18-24 F	60,238	22.7%	31.2%	8.5%
Unmarried 18-24 M	58,266	20.8%	27.6%	6.8%
Unmarried 25-34 F	134,103	36.5%	42.9%	6.4%
Unmarried 25-34 M	127,949	33.4%	39.9%	6.5%
Unmarried 35-49 F	179,024	57.1%	59.1%	2.1%
Unmarried 35-49 M	167,723	53.9%	58.0%	4.2%
Unmarried 50-64 F	200,420	73.8%	74.4%	0.7%
Unmarried 50-64 M	174,995	71.6%	74.7%	3.1%
Unmarried 65-79 F	107,111	83.5%	84.2%	0.7%
Unmarried 65-79 M	77,046	82.0%	83.8%	1.8%
Unmarried 80+ F	45,098	82.9%	77.0%	-5.9%
Unmarried 80+ M	18,975	82.9%	78.0%	-4.9%
Total	2,833,121	66.4%	69.8%	3.3%

Party, Age, Gender	N	Predicted Turnout	Actual Turnout	Difference
Democrat 18-24 F	29,844	29.2%	44.1%	14.8%
Democrat 18-24 M	22,878	27.9%	40.4%	12.5%
Democrat 25-34 F	78,529	45.6%	54.6%	9.0%
Democrat 25-34 M	54,696	43.1%	50.8%	7.7%
Democrat 35-49 F	128,909	66.5%	69.2%	2.7%
Democrat 35-49 M	87,741	63.7%	67.0%	3.4%
Democrat 50-64 F	160,144	80.8%	81.2%	0.4%
Democrat 50-64 M	108,651	78.8%	80.1%	1.3%
Democrat 65-79 F	92,502	87.9%	88.1%	0.2%
Democrat 65-79 M	64,308	87.6%	88.5%	0.9%
Democrat 80+ F	30,621	85.8%	79.4%	-6.4%
Democrat 80+ M	17,888	87.5%	81.7%	-5.8%
Green 18-24 F	499	26.2%	45.3%	19.1%
Green 18-24 M	623	24.8%	35.8%	11.0%
Green 25-34 F	967	41.5%	53.3%	11.8%
Green 25-34 M	1,332	38.1%	46.2%	8.1%
Green 35-49 F	1,003	60.8%	67.5%	6.7%
Green 35-49 M	1,334	58.4%	64.7%	6.3%
Green 50-64 F	757	73.1%	73.2%	0.1%
Green 50-64 M	953	74.6%	79.0%	4.4%
Green 65-79 F	234	83.3%	87.6%	4.3%
Green 65-79 M	314	84.1%	85.0%	1.0%
Green 80+ F	29	79.1%	65.5%	-13.6%
Green 80+ M	37	89.0%	89.2%	0.2%
Libertarian 18-24 F	1,515	26.1%	42.2%	16.1%
Libertarian 18-24 M	2,187	26.5%	41.5%	14.9%
Libertarian 25-34 F	2,851	39.5%	50.5%	11.0%
Libertarian 25-34 M	4,577	40.5%	53.0%	12.5%
Libertarian 35-49 F	2,380	57.9%	62.6%	4.7%
Libertarian 35-49 M	4,566	60.1%	68.5%	8.3%
Libertarian 50-64 F	1,682	71.6%	74.3%	2.7%
Libertarian 50-64 M	2,708	74.7%	79.1%	4.3%
Libertarian 65-79 F	440	82.3%	81.1%	-1.1%
Libertarian 65-79 M	847	84.0%	86.0%	1.9%
Libertarian 80+ F	75	81.7%	78.7%	-3.0%
Libertarian 80+ M	105	81.8%	81.0%	-0.9%

Party, Age, Gender	N	Predicted Turnout	Actual Turnout	Difference
No Party 18-24 F	54,750	23.3%	32.9%	9.6%
No Party 18-24 M	56,210	21.7%	29.7%	8.0%
No Party 25-34 F	109,854	36.1%	42.1%	5.9%
No Party 25-34 M	113,591	33.8%	39.4%	5.7%
No Party 35-49 F	130,547	55.7%	56.5%	0.8%
No Party 35-49 M	143,485	54.2%	56.9%	2.7%
No Party 50-64 F	117,920	71.9%	71.8%	-0.1%
No Party 50-64 M	126,323	71.5%	73.8%	2.3%
No Party 65-79 F	52,659	82.2%	83.0%	0.9%
No Party 65-79 M	58,042	82.7%	85.0%	2.3%
No Party 80+ F	13,286	79.4%	73.2%	-6.2%
No Party 80+ M	10,640	83.7%	79.8%	-3.8%
Other 18-24 F	278	25.0%	36.0%	11.0%
Other 18-24 M	474	24.6%	32.7%	8.1%
Other 25-34 F	520	37.5%	52.7%	15.2%
Other 25-34 M	904	37.1%	46.6%	9.5%
Other 35-49 F	727	52.2%	54.1%	1.8%
Other 35-49 M	1,123	54.1%	58.1%	3.9%
Other 50-64 F	798	67.7%	70.7%	3.0%
Other 50-64 M	1,093	68.8%	73.5%	4.7%
Other 65-79 F	295	78.5%	75.9%	-2.5%
Other 65-79 M	329	76.4%	78.1%	1.7%
Other 80+ F	65	82.6%	66.2%	-16.5%
Other 80+ M	53	85.0%	81.1%	-3.9%
Republican 18-24 F	24,148	34.7%	53.3%	18.6%
Republican 18-24 M	26,264	32.8%	49.2%	16.4%
Republican 25-34 F	53,484	51.4%	60.8%	9.4%
Republican 25-34 M	55,573	48.4%	57.2%	8.8%
Republican 35-49 F	106,627	72.4%	75.3%	2.9%
Republican 35-49 M	113,059	70.4%	74.8%	4.3%
Republican 50-64 F	150,545	85.4%	87.2%	1.8%
Republican 50-64 M	158,791	84.6%	87.4%	2.8%
Republican 65-79 F	91,202	91.5%	92.9%	1.4%
Republican 65-79 M	92,433	91.6%	93.6%	2.0%
Republican 80+ F	33,082	89.4%	85.1%	-4.4%
Republican 80+ M	25,207	92.3%	89.3%	-3.0%
Total	2,833,121	66.4%	69.8%	3.3%

5. Discussion

Because we don't have a true control group, we cannot be certain about the role that UVBM played in the 2014 Colorado election. The analyses above are, however, consistent with the patterns one would expect if UVBM had a positive effect on voter turnout.

Low propensity voters overperformed their 2014 Clarity Turnout Model predictions in Colorado, contrasting with low propensity voters nationwide who turned out mostly as expected. Age, which is strongly correlated with turnout in every election, was also a notable predictor of overperformance; young people in Colorado voted at higher rates than expected. Demographic and partisan distinctions were less relevant to overperformance, though there were some small differences. People who had voted absentee in 2012 turned out at almost exactly their predicted rate, while those who had previously voted in person overperformed slightly.

6. Next Steps

Analysis of other states and other elections would help provide context to these results. In other locations where UVBM has been introduced, do similar patterns emerge? Though Oregon and Washington instituted UVBM many cycles ago, perhaps it would be possible to find contemporaneous turnout models and perform similar analysis. Likewise, if there are particular counties that have instituted vote-by-mail in non-UVBM states, analysis could be performed there. Many counties in Utah, for instance, moved to a UVBM system in 2016.

It is also possible that more evidence can be gleaned from Colorado itself. Repeating the analyses in this report on Colorado's 2016 voter file could yield valuable new evidence. There is reason to believe that UVBM's effects, if any, would continue to confound the national turnout model for at least another cycle.

Particularly among new voters, infrequent voters, and recent arrivals to Colorado, the 2016 turnout model might similarly under-predict turnout if indeed UVBM has a positive effect on these groups.

Another avenue for analysis would be to compare sub-populations -- in Colorado or other UVBM states -- with histories of recent migration. As UVBM becomes the norm within a state over the course of several cycles, the turnout effects presumably become “baked in” for the model scores assigned to voters there. But what about people who move into those states from elsewhere? Comparisons between intra-state migrants and inter-state migrants may yield interesting results.