

Historical Evaluation of ARS 28-3151A

During the October 2024 site visit, members of the Monitor's team requested a review of ARS 28-3151A and its impact on citation outcomes using historical TSAR data. Below, we provide these analyses to document the effect of ARS 28-3151A on TSAR results using 2022 and 2021 data years (TSAR 8 and TSAR 7). Four analyses are presented for each data year. The first included the incidence of ARS 28-3151A by race/ethnicity for MCSO and by District (Tables 1 and 5). The second analysis provides citation rates for ARS 28-3151A by race/ethnicity for MCSO and by District (Tables 2 and 6). In the third analysis we provide propensity score matching results using the average treatment effect (ATE) for citation outcomes as reported in TSARs 7 and 8 and controlling for ARS 28-3151A by A) forced matching stops on ARS 28-3151A violations, B) excluding stops with ARS 28-3151A violations, and C) only matching stops with ARS 28-3151A violations (Tables 3 and 7). In the fourth analysis we provide propensity score matching results using the average treatment effect on the treated (ATT) for citation outcomes as reported in TSARs 7 and 8 and controlling for ARS 28-3151A by: A) forced matching stops on ARS 28-3151A violations, B) excluding stops with ARS 28-3151A violations, and C) only matching stops with ARS 28-3151A violations (Tables 4 and 8).

Analyses of ARS 28-3151A for TSAR 7 & 8

TSAR 7

In TSAR 7, MCSO used a different model specification for estimating disparity when compared to TSAR 9. Specifically, we used X and Y coordinates as matching variables and did not spline X and Y coordinates, as was the case for TSAR 8 and TSAR 9. Similarly, we did not use the speed over the speed limit that the driver was traveling, and we did not use the violation categories as matching variables as was done in TSARs 8 and 9. Finally, in TSAR 7, we reported the Average Treatment Effect (ATE) instead of the Average Treatment on the Treated (ATT) as is reported in TSAR 9. For comparison, we provide the ATE as the estimate of disparity in Table 3 and we provide estimates using ATT for TSAR 7 in Table 4.

Table 1: Number and percent of ARS 28-3151A Violations by District and Race/Ethnicity, TSAR 7

	All Drivers	Black	Hispanic	White	Minority
MCSO	330 (1.96%)	32 (2.56%)	222 (5.77%)	61 (0.55%)	269 (4.70%)
District 1	39 (3.76%)	8 (6.40%)	21 (8.37%)	6 (0.98%)	33 (7.82%)
District 2	88 (2.98%)	5 (1.40%)	62 (5.03%)	18 (1.46%)	70 (4.07%)
District 3	40 (2.91%)	9 (6.34%)	24 (7.04%)	7 (0.82%)	33 (6.29%)
District 4	45 (1.36%)	2 (2.27%)	36 (10.06%)	7 (0.25%)	38 (7.29%)
District 5	50 (1.51%)	4 (1.65%)	38 (4.86%)	7 (0.32%)	43 (3.76%)
District 6	26 (1.24%)	3 (1.79%)	19 (4.08%)	4 (0.28%)	22 (3.21%)
District 7	41 (1.49%)	1 (0.79%)	21 (5.21%)	12 (0.58%)	29 (4.22%)

Table 2: Citation Rate for ARS 28-3151A by District and Race/Ethnicity, TSAR 7

	All Drivers	Black	Hispanic	White	Minority
MCSO	93.94%	87.50%	95.95%	88.52%	95.17%*
District 1	92.31%	75.00%	100.00%	83.33%	93.94%
District 2	92.05%	100.00%	95.16%	77.78%	95.71%*
District 3	95.00%	100.00%	91.67%	100.00%	93.94%
District 4	95.56%	100.00%	97.22%	85.71%	97.37%
District 5	92.00%	75.00%	92.11%	100.00%	90.70%
District 6	96.15%	66.67%	100.00%	100.00%	95.45%
District 7	97.56%	100.00%	100.00%	91.67%	100.00%

Table 3: TSAR 7 PSM Results (ATE) Comparing White and Hispanic Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 7	2.62	2.24	Yes
Forced Matches for ARS 28-3151A	0.87	0.73	No
Excluding ARS 28-3151A stops	0.61	0.53	No
Matching only ARS 28-3151A stops	5.73	0.83	No

TSAR 7 PSM Results (ATE) Comparing White and Black Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 7	-7.27	-3.43	Yes
Forced Matches for ARS 28-3151A	-8.12	-3.85	Yes
Excluding ARS 28-3151A stops	-7.88	-3.67	Yes
Matching only ARS 28-3151A stops	1.09	0.17	No

TSAR 7 PSM Results (ATE) Comparing White and Minority Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 7	0.98	1.02	No
Forced Matches for ARS 28-3151A	-10.04	-4.45	Yes
Excluding ARS 28-3151A stops	-0.81	-0.84	No
Matching only ARS 28-3151A stops	5.54	0.85	No

Table 4: TSAR 7 PSM Results (ATT) Comparing White and Hispanic Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 7	2.56	1.98	Yes
Forced Matches for ARS 28-3151A	0.75	0.58	No
Excluding ARS 28-3151A stops	0.08	0.06	No
Matching only ARS 28-3151A stops	6.42	0.80	No

TSAR 7 PSM Results (ATT) Comparing White and Black Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 7	-5.77	-2.82	Yes
Forced Matches for ARS 28-3151A	-6.59	-3.27	Yes
Excluding ARS 28-3151A stops	-6.73	-3.27	Yes
Matching only ARS 28-3151A stops	-3.23	-0.47	No

TSAR 7 PSM Results (ATT) Comparing White and Minority Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 7	1.45	1.31	No
Forced Matches for ARS 28-3151A	-5.64	-2.78	Yes
Excluding ARS 28-3151A stops	-1.64	-1.44	No
Matching only ARS 28-3151A stops	6.06	0.82	No

TSAR 8

In TSAR 8, MCSO we reported the Average Treatment Effect (ATE) instead of the Average Treatment on the Treated (ATT) as is reported in TSAR 9. For comparison, we provide the ATE as the estimate of disparity in Table 7 and provide estimates using ATT for TSAR 8 in Table 8.

Table 5: Number and percent of ARS 28-3151A Violations by District and Race/Ethnicity, TSAR 8

	All Drivers	Black	Hispanic	White	Minority
MCSO	505 (2.55%)	51 (3.57%)	349 (7.35%)	86 (0.67%)	419 (6.00%)
District 1	72 (3.98%)	10 (4.74%)	43 (9.00%)	14 (1.37%)	58 (7.38%)
District 2	127 (3.54%)	16 (4.16%)	100 (5.90%)	9 (0.66%)	118 (5.29%)
District 3	71 (2.61%)	13 (5.04%)	43 (6.09%)	14(0.84%)	57 (5.43%)
District 4	68 (1.86%)	1 (0.79%)	47 (10.04%)	19(0.64%)	49 (7.22%)
District 5	104 (2.83%)	9(3.69%)	75 (8.94%)	18 (0.74%)	86 (7.00%)
District 7	63 (1.45%)	1 (2.98%)	41 (7.28%)	12 (0.36%)	51 (5.06%)

Table 6: Citation Rate for ARS 28-3151A by District and Race/Ethnicity, TSAR 8

	All Drivers	Black	Hispanic	White	Minority
MCSO	94.26%	92.16%	95.99%	88.37%	95.47%*
District 1	94.44%	100.00%	95.35%	85.71%	96.55%
District 2	92.91%	87.50%	94.00%	100.00%	92.37%
District 3	97.18%	92.31%	100.00%	92.86%	98.25%
District 4	95.59%	100.00%	100.00%	84.21%	100.00%*
District 5	94.23%	88.89%	97.33%	83.33%	96.51%*
District 7	92.06%	100.00%	90.24%	91.67%	92.16%

Table 7: TSAR 8 PSM Results (ATE) Comparing White and Hispanic Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 8	3.68	3.21	Yes
Forced Matches for ARS 28-3151A	1.25	1.10	No
Excluding ARS 28-3151A stops	2.97	2.49	Yes
Matching only ARS 28-3151A stops	5.79	1.65	No

TSAR 8 PSM Results (ATE) Comparing White and Black Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 8	0.27	0.12	No
Forced Matches for ARS 28-3151A	-1.99	-0.95	No
Excluding ARS 28-3151A stops	-0.70	-0.31	No
Matching only ARS 28-3151A stops	-1.48	-0.28	No

TSAR 8 PSM Results (ATE) Comparing White and Minority Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 8	1.03	1.12	No
Forced Matches for ARS 28-3151A	-1.03	-1.12	No
Excluding ARS 28-3151A stops	1.20	-1.25	No
Matching only ARS 28-3151A stops	3.33	1.36	No

Table 8: TSAR 8 PSM Results (ATT) Comparing White and Hispanic Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 8	1.59	1.26	No
Forced Matches for ARS 28-3151A	-1.30	-1.57	No
Excluding ARS 28-3151A stops	0.86	0.68	No
Matching only ARS 28-3151A stops	5.17	1.65	No

TSAR 8 PSM Results (ATT) Comparing White and Black Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 8	-0.07	-0.03	No
Forced Matches for ARS 28-3151A	0.17	0.09	No
Excluding ARS 28-3151A stops	-0.14	-0.70	No
Matching only ARS 28-3151A stops	-7.84	-1.37	No

TSAR 8 PSM Results (ATT) Comparing White and Minority Drivers, Citations

Model	Difference (percentage points)	t-statistic	Statistically Significant
TSAR 8	0.43	0.39	No
Forced Matches for ARS 28-3151A	-2.10	-1.96	Yes
Excluding ARS 28-3151A stops	1.36	1.19	No
Matching only ARS 28-3151A stops	1.67	0.69	No