Methodology Statement

Likely Voter Survey
Michigan, Pennsylvania, and Wisconsin
March 5 - 7, 2020

This 0ptimus survey was conducted from March 5 - 7, 2020 and interviewed likely 2020 general election voters in Michigan (n=550), Pennsylvania (n=533), and Wisconsin (n=502). Interviews were conducted with a probabilistic sample via live calls to cell phones (34%), live calls to landlines (34%), and peer-to-peer text-to-web (32%). Telephone interviews were conducted by Dynata and text messages were sent by Opn Sesame.

	MI	PA	WI
LIVE CELL	158 (28.7%)	162 (30.4%)	171 (34.1%)
LIVE LANDLINE	169 (30.7%)	173 (32.5%)	170 (33.9%)
TEXT-TO-WEB	223 (40.5%)	198 (37.1%)	161 (32.1%)
TOTAL N =	550	533	502

Note: Column percentages may not add to 100% due to rounding.

The sample frame covers likely 2020 general election voters with reported landline or cellphone numbers from each state's voter file. Likely voters were identified by their recent vote history plus additional voters who are expected to vote in the 2020 presidential general election as determined by 0ptimus turnout modeling. The probability sample was selected using registration-based sampling (RBS) stratified by age group, gender, (registered or modeled) political party, and DMA.

The full sample included 550 likely voters in Michigan, 533 likely voters in Pennsylvania, and 502 likely voters in Wisconsin While the margins of error vary slightly across questions due to item non-response and the base rate, the margins of errors based on Q1 are reported as ± 4.6% in Michigan, ± 5.0% in Pennsylvania, and ± 4.7% in Wisconsin. We calculate the margin of error as:

$$\sqrt{D_{eff}} * Z * \sqrt{\frac{\hat{p}(1-\hat{p})}{n-1}}$$

where *n* is sample size, Z is set to 1.96, and $\hat{p}$ is the response proportion. The design effect (D_{eff}) in Michigan is reported as 1.37, in Pennsylvania is reported as 1.47, and in Wisconsin is reported as 1.29. The sample was weighted to account for non-response across age group, gender, and (registered or modeled) political party, and DMA.

Weighted Data

MICHIGAN	RAW N	UNBALANCED (%)	BALANCED (%)	POPULATION (%)
AGE GROUP				
18-29	60	11.1	13.2	13.1
30-44	106	19.3	22.0	22.0
45-64	195	35.5	36.8	37.3
65+	188	34.2	28.0	27.6
GENDER				
MALE	261	47.5	46.3	45.9
FEMALE	289	52.5	53.7	54.1
PARTY				
DEMOCRAT	273	49.6	51.7	51.0
REPUBLICAN	224	40.7	37.7	37.3
NONPARTISAN	53	9.6	10.6	11.7

PENNSYLVANIA	RAW N	UNBALANCED (%)	BALANCED (%)	POPULATION (%)
AGE GROUP				
18-29	68	12.8	12.0	11.9
30-44	90	16.9	21.9	22.1
45-64	186	34.9	37.5	37.6
65+	189	35.5	28.6	28.3
GENDER				
MALE	263	49.3	45.3	44.7
FEMALE	260	48.8	53.6	53.6
PARTY				
DEMOCRAT	239	44.8	47.1	46.5
REPUBLICAN	229	43.0	41.1	40.5
NONPARTISAN	65	7.7	8.0	8.7

WISCONSIN	RAW N	UNBALANCED (%)	BALANCED (%)	POPULATION (%)
AGE GROUP				
18-29	19	3.8	4.3	4.3
30-44	67	13.3	15.5	15.5
45-64	149	29.7	33.5	33.5
65+	135	26.9	26.3	26.3
MISSING	128	25.5	19.6	19.6
GENDER				
MALE	259	51.6	46.3	46.3
FEMALE	233	46.4	51.7	51.7
PARTY				
DEMOCRAT	168	33.5	32.6	32.6
REPUBLICAN	206	41.0	44.4	44.4
NONPARTISAN	118	23.5	21.1	21.1