Technical Report:

Climate Insights 2020 | Electric Vehicles

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This technical report accompanies the policies and politics installment of the Climate Insights 2020 report. Climate Insights is a survey project by researchers at Stanford University, Resources for the Future, and ReconMR examining American public opinion on issues related to climate change. Since 1997, Stanford University Professor Jon Krosnick has explored American public opinion on these issues through a series of rigorous national surveys of random samples of American adults, often in collaboration with RFF. For the 2020 iteration of the Climate Insights survey, 502 American adults were interviewed during the 80-day period from May 28, 2020 to August 10, 2020.

This series is accompanied by an interactive data tool, which can be used to view specific data from the survey. Please visit www.rff.org/climateinsights or https://climatepublicopinion.stanford.edu/ for more information and to access the data tool, report series, blog posts, and more.

These issues were explored using the data from a recently conducted national telephone survey. In this paper, we describe the methodology of the survey and the measures included in it to address all-electric vehicles. Then we describe the results obtained from statistical analyses of the data and spell out the implications of those results.

Method

Sample

The 2020 National Survey of Public Opinion on Global Warming was conducted by Stanford University, Resources for the Future, and ReconMR. Random Digit Dial telephone interviews were conducted with a representative sample of 502 adults living in the United

States.[1] 183 respondents were interviewed on a landline telephone, and 319 were interviewed on a cell phone. Interviewing was conducted between May 28 and August 10, 2020, in English. The AAPOR Response Rate 3 for the survey was 22% for the landline frame, 5% for the cell phone frame, and 9% for both (see Appendix A for the survey methodology). The data were weighted to match the U.S. population in terms of sex, age, combined race and ethnicity, education, and census region.

Measures

Resistance to purchasing all-electric cars. Respondents were first asked: "Do you think you will buy a car in the future, or do you think you will not do that?" 313 respondents who said they will purchase a car were then asked, "When you buy a car next, do you think you will consider buying a car that runs only on electricity, or do you think you won't consider buying that type of car?" Respondents were coded 1 if they said they would not consider buying an all-electric car and 0 if they said they would, for a total N of 303 (10 people said they didn't know).

Predictors for all-electric cars resistance. All respondents were asked questions measuring perceptions of EVs that might constitute sources of resistance to buying them.

Global warming seriousness. "If nothing is done to reduce global warming in the future, how serious of a problem do you think it will be for the United States? Very serious, somewhat serious, not so serious, or not serious at all?" Coding: 1 = not serious at all; .67 = not so serious, .33 = somewhat serious, 0 = very serious; 0 = did not answer. A dummy variable was coded 1 for respondents who did not answer and 0 for those who did.

[1] Questions on electric vehicle were added to the questionnaire after 43 interviews were conducted; the total sample size for the electric vehicles is 459.

Environmental benefits. "As compared to driving a car that runs on gasoline, how much do you think that driving an all-electric car helps the environment? A great deal, a lot, a moderate amount, a little, or not at all?" Coding: 1 = not at all, .75 = a little, .5 = a moderate amount, .25 = a lot, 0 = a great deal; 0 = did not answer. A dummy variable was coded 1 for respondents who did not answer and 0 for those who did.

Safety.

Catching on fire. "How likely do you think it is that the batteries in cars that run only on electricity will catch on fire? Extremely likely, very likely, moderately likely, slightly likely, or not likely at all?" Coding: 1 = extremely likely, .75 = very likely, .5 = moderately likely, .25 = slightly likely, 0 = not likely at all; 0 = did not answer. A dummy variable was coded 1 for respondents who did not answer and 0 for those who did.

Economics.

Maintenance costs. "As compared to cars that run on gasoline, do you think that people who own cars that run only on electricity spend more money to repair them and keep them running, spend less money on that, or spend about the same amount of money?" Coding: 1 = more money, 0 = less money, .5 = about the same amount of money; 0 = did not answer. A dummy variable was coded 1 for respondents who did not answer and 0 for those who did.

Operation costs. "People who drive cars that run only on electricity have to pay for the electricity to charge the cars' batteries. As compared to the cost of gasoline to drive one mile, do you think the cost of electricity to drive one mile is more, less, or the same?" Coding: 1 = more, 0 = less, .5 = the same; 0 = did not answer. A dummy variable was coded 1 for respondents who did not answer and 0 for those who did.

Depreciation. "As you may know, the more miles a car has been driven, the less money the owner can sell it for. As compared to cars that run on gasoline, do you think the value of cars that run only on electricity goes down faster over the years, goes down more slowly, or goes down about equally fast?" Coding: 1 = more slowly, 0 = faster, .5 = about equally fast; 0 = did not answer. A dummy variable was coded 1 for respondents who did not answer and 0 for those who did.

Performance and efficiency.

Acceleration. "As compared to cars that run on gasoline, do you think that the engines of cars that run only on electricity can speed up more quickly, speed up more slowly, or speed up about equally fast?" Coding: 1 = more slowly, .5 = about equally fast, 0 = more quickly; 0 = did not answer. A dummy variable was coded 1 for respondents who did not answer and 0 for those who did.

Charging inconvenience. "How difficult do you think it is for people who drive cars that run only on electricity to find places to charge them up when they need to be charged? Extremely difficult, very difficult, moderately difficult, slightly difficult, or not difficult at all?" Coding: 1 = extremely difficult, .75 = very difficult, .5 = moderately difficult, .25 = slightly difficult, 0 = not difficult at all; 0 = did not answer. A dummy variable was coded 1 for respondents who did not answer and 0 for those who did.

Availability of mechanics. "How many car mechanics would you guess can fix cars that run only on electricity? All of them, most of them, about half of them, a few of them, or none of them?" Coding: 1 = none of them, .75 = a few of them, .5 = half of them, .25 = most of them, 0 = all of them; 0 = did not answer. A dummy variable was coded 1 for respondents who did not answer and 0 for those who did.

Prior exposure.

Experience with an EV. "As far as you know, have you or anyone you know personally ever driven a car or truck that runs only on electricity and not on gasoline, or has that not happened?" Coding: 1 = have not happened, 0 = have; 0 = did not answer. A dummy variable was coded 1 for respondents who did not answer and 0 for those who did.

Party identification. Respondents were asked **"**Generally speaking, do you usually think of yourself as [a Democrat, a Republican/ a Republican, a Democrat], an Independent, or what?" A dichotomous variable was constructed for "Democrat", set to 1 for people who answered "Democrat" and 0 otherwise. A dichotomous variable was constructed for "Republican", set to 1 for people who answered "Republican" and 0 otherwise**.**

Liberal/conservative ideology. Respondents were asked "Generally speaking, do you consider yourself liberal, moderate, or a conservative?" A dichotomous variable was constructed for "liberal", set to 1 for people who answered "liberal" and 0 otherwise. A dichotomous variable was constructed for "conservative", set to 1 for people who answered "conservative" and 0 otherwise.

Demographics. Respondents reported their sex, age, race, Hispanic ethnicity, education, income, and region of residence (see Appendix B for question wordings and codings). A series of dummy variables identified respondents who did not answer each demographic question (coded 1 for people who did not answer and 0 for people who did), and those respondents were assigned an arbitrary value for that demographic and were included as predictors in all regressions. This avoids losing cases while also preventing distortion of the parameter estimates.

Analytic Methodology

To gauge the impact of potential inhibitors of openness to purchasing an EV, we estimated the parameters of an ordinary least squares regression equation predicting openness with various perceptions of EVs, other factors outlined above, and demographics.

Results

Distribution of Opinions on Global Warming

Nearly one-quarter (26%) of respondents believe that unchecked global warming will not be a problem for the U.S. (16%) or believe it will be a not so serious problem (10%; see column 1 of Table 1). These individuals may be less motivated to consider buying an EV than the 15% who believe that unchecked global warming will be a somewhat serious problem and the 58% who think that unchecked global warming will be a very serious problem.

Distributions of Perceptions of All-Electric Cars

Environmental benefits. Nearly one-third (28%) of respondents believe that driving an all-electric car will not help the environment at all (14%) or help the environment a little (14%). These individuals may be less motivated to consider buying an all-electric car than the one-quarter of respondents (25%) who believe that driving an all-electric car will help the environment a moderate amount, the 17% who believe that it will help the environment a lot, and the 29% who believe that it will help the environment a great deal.

Safety. About one-third (34%) of respondents believe that the all-electric cars' batteries are extremely likely (5%), very likely (6%), or moderately likely (23%) to catch on fire. These individuals may be less motivated to consider buying an EV than are the 63% who believe that batteries catching on fire is slightly likely (32%) or not likely at all (31%).

Economics. Nearly one-third (29%) of respondents believe that maintaining all-electric cars is more costly than maintaining gasoline-powered cars, and these individuals may be less open to purchasing an EV as compared to the 13% and 50% of respondents believe that maintenance of all-electric cars is less costly than or as costly as maintaining gasoline-powered cars, respectively.

22% of respondents believe that driving all-electric cars is more costly than driving gasoline-powered cars, and these people may be less motivated to buy an EV than are the 45% and 28% of respondents who believe that all-electric cars is less costly than or as costly as driving gasoline-powered cars, respectively.

15% of respondents believe that all-electric cars lose value more quickly than do gasoline-powered cars, and these people may be less motivated to purchase an EV than are the 27% who think that EVs lose value more slowly than do gasoline-powered cars and the 52% who believe that depreciation of all-electric cars and gasoline-powered cars is about the same.

Performance and efficiency. 25% of respondents believe that all-electric cars have poorer acceleration than gasoline-powered cars, and these people may be less motivated to buy EVs than the 26% who believe that all-electric cars have better acceleration than gasoline-powered cars and the 43% who perceive no difference in acceleration between all-electric cars and gasoline-powered cars.

22% of respondents believe that charging all-electric cars' batteries is extremely difficult, 24% believe it is very difficult (24%), and 32% perceive it to be moderately difficult. These individuals may be more reluctant to buy EVs than are the 13% and 8% believe it is slightly difficult and not difficult at all, respectively.

58% of respondents believe that a few auto mechanics can repair EVs, and 7% that essentially none can. These people may be more reluctant to buy EVs than are the 22%, 9%, and 1% of people who believe that about half, most, or all mechanics can fix them, respectively.

Prior exposure. 65% of respondents have not driven or known someone who has driven an all-electric car or truck, and these people may be more reluctant to buy an EV than are the 34% who have driven one or know someone who has driven one.

Distribution of Resistance to Purchasing an All-Electric Car

40% of respondents said they will buy a car in the future and will consider buying an all-electric car, 30% said they will buy a car in the future but will not consider buying an all-electric car, and 28% said they will not buy a car in the future. Thus, of future car buyers, 57% said they will consider buying an EV.

Predictors of Resistance to Purchasing All-Electric Cars

Global warming. In the OLS regression predicting purchase openness, the strongest predictor of reluctance is the belief that global warming will not be a serious problem for the nation in the future. The more serious people believe global warming will be in the future, the more likely they are to consider buying EVs ($b=.306$, $p<.01$; row 1 in Table 2).

Environmental protection. Controlling for beliefs about global warming, perceiving that driving all-electric cars does not help the environment did not inhibit intentions to purchase such cars ($b=.037$, n.s., row 5 in Table 2). When the perception that driving all-electric cars does not help the environment was included among the predictors in the regression equation but beliefs about global warming was not, perceptions of lack of environmental protection was a marginally significant inhibitor purchase intentions, as expected ($b=.164$, $p<.10$). Thus, it seems that beliefs about global warming are the motivator behind this relation involving environmental protection.

Safety. Perceiving that all-electric cars' batteries pose a safety hazard substantially reduced people's openness to purchasing all-electric cars (b=.270, p<.05; row 2 in Table 2).

Economic costs. Perceiving greater maintenance costs of all-electric cars was another predictor of reluctance to buy these cars (b=.212, p<.05; row 3 in Table 2). Believing that EVs are more expensive to maintain is a deterrent to purchasing (see Appendix Table A2, line 3).

Perceiving that all-electric cars are more expensive to operate and depreciate more quickly than gasoline-powered cars did not inhibit purchasing intentions (b=-.075, n.s.; b=.103, n.s.; rows 7 and 9 in Table 2).

Performance and efficiency. Perceiving that all-electric cars have better acceleration than gasoline-powered cars predicted the openness to purchasing all-electric cars marginally significantly (b=.153, p<.10; row 4 in Table 2). Perceiving worse acceleration was not a deterrent (see Appendix Table A2, line 7).

Perceived difficulty of charging batteries and unavailability of car mechanics to repair all-electric cars did not inhibit purchasing intentions (b=.030, n.s.; b=.144, n.s.; rows 8 and 10 in Table 2).

Prior exposure. Prior experience driving EVs did not enhance openness to purchasing all-electric cars (b=-.050, n.s.; row 6 in Table 2).

Other predictors. Liberals are less resistant than moderates to purchasing EVs (b=-.158, p<.05; row 13 in Table 2). Democrats are marginally significantly more resistant than are independents (p=.115, p<.10; row 11 in Table 2). People ages 55 to 64 were significantly more resistant than people ages 18 to 25 (b=.215, p<.05; row 22 in Table 2). High school graduates are significantly more reluctant than people who had not graduated from high school (b=.295, p<.05; row 24 in Table 2). People in the northeast region of the country are marginally significantly less resistant to purchasing EVs (b=-.118, p<.10; row 34 in Table 2). Sex, Hispanic ethnicity, race, income, and marital status were unrelated to resistance (rows 15-18, 28-33 in Table 2).

Moderators of the Predictors of Resistance to Purchasing All-Electric Cars

Moderation by sex. Men and women differed in terms of the predictors of their openness to purchasing EVs (for regression coefficient estimates testing moderation, see Appendix C).

Believing that global warming will be a serious problem significantly enhanced openness to buying an all-electric car in the future among women, and did not among man (b=.303, p<.05; b=.184, n.s.; row 1 columns 2 and 1 in Table 3).

Perceiving that driving all-electric cars does not help the environment inhibited intentions to purchase such cars among men and did not among women (b=.210, p<.10; b=.-200, n.s.; row 5 columns 1-2 in Table 3).

Perceiving that all-electric cars' batteries pose a safety hazard substantially reduced people's openness to purchasing all-electric cars among women but did not among men (b=.359, p<.05; b=.114, n.s.; row 2 columns 2 and 1 in Table 3).

Perceiving greater maintenance costs of all-electric cars was a strong predictor of reluctance to buy these cars among men but not among women (b=.370, p<.01; b=.070, n.s.; row 3 columns 1-2 in Table 3). In contrast, perceiving all-electric cars to depreciate more quickly strongly inhibited purchasing intentions among women but did not among men (b=.494, p<.001.; b=-.055, n.s.; row 9 columns 2 and 1 in Table 3).

Perceiving that all-electric cars have poorer acceleration than gasoline-powered cars predicted the resistance to all-electric cars among men but did not among women (b=.210, p<.10; b=.107, n.s.; row 4 columns 1-2 in Table 3). Perceived unavailability of car mechanics to repair all-electric cars decreased purchasing intentions among men but did not among women (b=.376, p<.10; b=.083, n.s.; row 10 columns 1-2 in Table 3).

Moderation by education. More educated people differed from less educated people in terms of the criteria that drive their reluctance to purchase EVs.

For example, believing that global warming will be a serious problem significantly enhances openness to buying an all-electric car people who did not graduate from college (b=.422, p<.001; row 1 column 4 in Table 3) more than among people who did (b=.245, p<.10; row 1 columns 3 in Table 3).

Perceiving that all-electric cars' batteries pose a safety hazard substantially reduced the openness to purchasing all-electric cars among people without a college degree but did not among college graduates (b=.316, p<.05; b=.249, n.s.; row 2 columns 4 and 3 in Table 3).

Perceiving all-electric cars to depreciate more quickly inhibited purchasing intentions among college graduates but did not among people without college degrees (b=.224, p<.10.; b=.202, n.s.; row 9 columns 3-4 in Table 3).

Perceived unavailability of car mechanics to repair all-electric cars substantially decreased purchasing intentions among respondents without college degrees but did not among college graduates (b=.864, p<.001; b=-.159, n.s.; row 10 columns 4 and 3 in Table 3).

Perceiving greater maintenance costs of all-electric cars predicted reluctance to buy these cars equally strongly among people with and without college degrees (b=.241, p<.05; b=.293,

$p<.05$; row 3 columns 3-4 in Table 3).

Moderation by prior experience. Believing that global warming will be a serious problem significantly enhanced openness to buying an all-electric car among respondents without prior exposure to such cars but did not respondents with prior experience ($b=.549$, $p<.001$; $b=-.129$, n.s.; row 1 columns 6 and 5 in Table 3).

Perceiving greater maintenance costs of all-electric cars increased hesitation to buy these cars among people without prior experience but did not among people with previous exposure ($b=.350$, $p<.01$; $b=.138$, n.s.; row 3 columns 6 and 5 in Table 3).

Perceiving that all-electric cars have poorer acceleration than gasoline-powered cars predicted the resistance to all-electric cars among respondents with prior exposure but did not among respondents without prior exposure ($b=.370$, $p<.01$; $b=.129$, n.s.; row 10 columns 5-6 in Table 3).

Perceiving that all-electric car batteries pose a safety hazard equally reduced openness to purchasing all-electric cars among people with and without prior exposure ($b=.279$, $p<.05$; $b=.267$, $p<.10$; row 2 columns 5-6 in Table 3).

Table 1. Frequencies of EV Measures of the Whole Sample and by Various Subgroups

	Among all respondents	Among Women	Among Men	Among respondents without a college degree	Among respondents with a college degree	Among respondents who had prior exposure	Among respondents who had no prior exposure
QN2. As far as you know, have you or anyone you know personally ever driven a car or truck that runs only on electricity and not on gasoline, or has that not happened?							
Have	34%	30%	37%	27%	46%		
Have not	65	70	60	71	53		
DK/RF	1	0	3	2	0		
Total	100%	100%	100%	100%	100%		
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)		
QN4. Do you think you will buy a car in the future, or do you think you will not do that?							
Will	72%	65%	79%	65%	85%	83%	67%
Will not	25	33	18	31	14	14	31
DK/RF	3	3	3	3	0	3	2
Total	100%	100%	100%	100%	100%	100%	100%
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)	(N=163)	(N=290)
QN6. [ASK IF QN4="Will"] When you buy a car next, do you think you will consider buying a car that runs only on electricity, or do you think you won't consider buying that type of car?							
Will consider	40%	37%	43%	34%	54%	51%	36%
Will not consider	30	26	34	30	30	28	30
Will not buy a new car or DK/RF to whether buy a new car	28	35	21	35	15	17	33

	Among all respondents	Among Women	Among Men	Among respondents without a college degree	Among respondents with a college degree	Among respondents who had prior exposure	Among respondents who had no prior exposure
DK/RF	2	1	2	2	2	3	1
Total	100%	100%	100%	100%	100%	100%	100%
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)	(N=163)	(N=290)
QN7. As compared to driving a car that runs on gasoline, how much do you think that driving an all-electric car helps the environment? A great deal, a lot, a moderate amount, a little, or not at all?							
A great deal	29%	30%	29%	29%	31%	36%	26%
A lot	17	20	14	16	18	20	16
A moderate amount	25	27	22	23	28	22	27
A little	14	14	14	15	13	10	16
Not at all	14	8	20	15	9	12	14
DK/RF	1	2	0	1	0	0	2
Total	100%	100%	100%	100%	100%	100%	100%
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)	(N=163)	(N=290)
QN8. As compared to cars that run on gasoline, do you think that people who own cars that run only on electricity spend more money to repair them and keep them running, spend less money on that, or spend about the same amount of money?							
More money	29%	30%	28%	30%	28%	18%	36%
Less money	13	11	15	10	19	23	8
About the same amount of money	50	49	50	53	43	53	47
DJ/RF	8	9	6	7	9	6	9
Total	100%	100%	100%	100%	100%	100%	100%

	Among all respondents	Among Women	Among Men	Among respondents without a college degree	Among respondents with a college degree	Among respondents who had prior exposure	Among respondents who had no prior exposure
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)		
QN9. As compared to cars that run on gasoline, do you think that the engines of cars that run only on electricity can speed up more quickly, speed up more slowly, or speed up about equally fast?							
More quickly	26%	13%	39%	25%	29%	44%	16%
More slowly	25	32	18	24	26	14	31
About equally fast	43	47	40	45	41	39	46
DK/RF	6	8	3	6	4	3	7
Total	100%	100%	100%	100%	100%	100%	100%
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)	(N=163)	(N=290)
QN10. People who drive cars that run only on electricity have to pay for the electricity to charge the cars' batteries. As compared to the cost of gasoline to drive one mile, do you think the cost of electricity to drive one mile is more, less, or the same?							
More	22%	24%	19%	24%	16%	17%	24%
Less	45	31	25	32	20	16	33
The same	28	40	50	37	60	63	36
	6	6	6	7	4	4	7
	100%	100%	100%	100%	100%	100%	100%
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)	(N=163)	(N=290)

	Among all respondents	Among Women	Among Men	Among respondents without a college degree	Among respondents with a college degree	Among respondents who had prior exposure	Among respondents who had no prior exposure
QN11. How difficult do you think it is for people who drive cars that run only on electricity to find places to charge them up when they need to be charged? Extremely difficult, very difficult, moderately difficult, slightly difficult, or not difficult at all?							
Extremely difficult	22%	28%	16%	26%	15%	17%	25%
Very difficult	24	23	25	25	21	18	27
Moderately difficult	32	31	32	27	42	41	27
Slightly difficult	13	10	15	12	14	14	11
Not difficult at all	8	8	8	8	6	8	8
DK/RF	2	1	3	2	1	2	2
Total	100%	100%	100%	100%	100%	100%	100%
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)	(N=163)	(N=290)
QN11a. How likely do you think it is that the batteries in cars that run only on electricity will catch on fire? Extremely likely, very likely, moderately likely, slightly likely, or not likely at all?							
Extremely likely	5%	6%	5%	7%	1%	4%	6%
Very likely	6	6	5	7	2	1	8
Moderately likely	23	23	23	27	16	20	25
Slightly likely	32	30	34	29	37	37	30
Not likely at all	31	30	32	25	43	37	27
DK/RF	3	4	1	4	1	1	4
Total	100%	100%	100%	100%	100%	100%	100%
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)	(N=163)	(N=290)

	Among all respondents	Among Women	Among Men	Among respondents without a college degree	Among respondents with a college degree	Among respondents who had prior exposure	Among respondents who had no prior exposure
QN12. As you may know, the more miles a car has been driven, the less money the owner can sell it for. As compared to cars that run on gasoline, do you think the value of cars that run only on electricity goes down faster over the years, goes down more slowly, or goes down about equally fast?							
Faster	15%	12%	18%	17%	12%	19%	13%
More slowly	27	25	30	27	27	27	28
About equally fast	52	58	46	51	55	49	53
DK/RF	5	5	5	5	5	5	5
Total	100%	100%	100%	100%	100%	100%	100%
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)	(N=163)	(N=290)
QN13. How many car mechanics would you guess can fix cars that run only on electricity? All of them, most of them, about half of them, a few of them, or none of them?							
All of them	1%	2%	1%	2%	1%	1%	1%
Most of them	9	9	10	10	8	8	10
About half of them	22	26	19	20	28	23	22
A few of them	58	54	63	59	58	64	55
None of them	7	7	7	8	3	3	9
DK/RF	2	3	1	2	2	1	3
Total	100%	100%	100%	100%	100%	100%	100%
	(N=459)	(N=239)	(N=216)	(N=231)	(N=224)	(N=163)	(N=290)

Table 2. Predictors of Resistance to Purchasing All-Electric Vehicles

Predictor	Unstandardized regression coefficients
GW will not be a serious national problem	0.306** (0.094)
EV batteries are more likely to catch on fire	0.270* (0.119)
Maintaining EVs is more costly than maintaining gasoline-powered cars	0.212* (0.093)
EVs have poorer acceleration than gasoline-powered cars	0.153+ (0.080)
Driving EV will not help the environment	0.037 (0.087)
Had not experienced EV	-0.050 (0.058)
Driving EVs is more costly than driving gasoline-powered cars	-0.075 (0.075)
Charging EV batteries is more difficult	0.030 (0.100)
EVs lose value more quickly than do gasoline-powered cars	0.103 (0.092)
Mechanics to fix EVs are less available than mechanics to fix gasoline-powered cars	0.144 (0.151)
Democrat	0.115+ (0.069)
Republican	0.100 (0.081)
Liberal	-0.158* (0.070)
Conservative	0.075 (0.075)
Male	0.041 (0.058)
Hispanic	-0.034 (0.083)
Black	0.125 (0.076)
Other race(s)	-0.017 (0.084)
Age 25 to 34	-0.016 (0.084)
Age 35 to 44	0.052 (0.096)
Age 45 to 54	0.086 (0.095)

Age 55 to 64	0.215*
	(0.096)
Age 65 or older	0.092
	(0.094)
High school graduate	0.295*
	(0.136)
Some college	0.165
	(0.137)
College graduate	0.221
	(0.152)
Post college	0.192
	(0.151)
Income $20K-$34,999	0.040
	(0.119)
Income $35K-$49,999	-0.001
	(0.127)
Income $50K-$74,999	0.178
	(0.121)
Income $75K-$99,999	0.080
	(0.100)
Income $100K+	-0.004
	(0.109)
Married	-0.089
	(0.062)
Northeast	-0.118+
	(0.069)
Midwest	0.085
	(0.076)
West	-0.054
	(0.065)
Constant	-0.316
	(0.193)
R^2	0.490
N	303

Notes. Cell entries are unstandardized coefficients (standard errors in parentheses) from an OLS regression, adjusted for sampling weights.

***p<.001 **p<.01 *p<.05 +p<.10

Table 3. Predictors of Public Resistance to Purchasing All-Electric Vehicles Among Various Subgroups of Respondents

	Unstandardized regression coefficients					
Predictor	Among men (1)	Among women (2)	Among respondents with a college degree (3)	Among respondents without a college degree (4)	Among respondents who had prior exposure (5)	Among respondents who had no prior exposure (6)
GW will not be a serious national problem	0.184	0.303*	0.245+	0.422***	-0.129	0.549***
	(0.139)	(0.146)	(0.140)	(0.115)	(0.156)	(0.102)
EV batteries are more likely to catch on fire	0.114	0.359*	0.249	0.316*	0.279*	0.267+
	(0.172)	(0.141)	(0.161)	(0.144)	(0.131)	(0.137)
Maintaining EVs is more costly than maintaining gasoline-powered cars	0.370**	0.070	0.241*	0.293*	0.138	0.350**
	(0.124)	(0.120)	(0.110)	(0.126)	(0.137)	(0.112)
EVs have poorer acceleration than gasoline-powered cars	0.210+	0.107	0.104	-0.065	0.370**	0.129
	(0.108)	(0.109)	(0.089)	(0.103)	(0.120)	(0.084)
Driving EVs will not help the environment	0.259*	-0.200	-0.170	0.035	0.175	0.081
	(0.113)	(0.137)	(0.125)	(0.115)	(0.148)	(0.090)
Had not experienced an EV	-0.163+	0.134*	0.102	-0.215**	-	-
	(0.088)	(0.065)	(0.070)	(0.073)		
Driving EVs is more costly than driving gasoline-powered cars	0.047	-0.242*	-0.054	0.017	0.130	-0.122+
	(0.093)	(0.103)	(0.116)	(0.084)	(0.170)	(0.072)
Charging EV batteries is more difficult	-0.041	0.030	0.165	-0.143	0.177	-0.031
	(0.139)	(0.140)	(0.153)	(0.141)	(0.138)	(0.128)
EVs lose value more quickly than do gasoline-powered cars	-0.055	0.494***	0.224+	0.202	0.113	-0.012
	(0.116)	(0.120)	(0.115)	(0.139)	(0.108)	(0.107)
Mechanics to fix EVs are less available than mechanics to fix gasoline-powered cars	0.376+	0.083	-0.159	0.864***	0.141	0.065
	(0.194)	(0.153)	(0.163)	(0.199)	(0.186)	(0.171)
Democrat	0.170*	0.064	-0.010	0.089	-0.051	0.247**
	(0.083)	(0.082)	(0.079)	(0.105)	(0.110)	(0.086)
Republican	0.021	0.195+	0.045	0.021	0.225+	-0.015
	(0.107)	(0.118)	(0.120)	(0.088)	(0.130)	(0.076)

Liberal	-0.133	-0.224*	-0.077	-0.206*	-0.140	-0.123
	(0.083)	(0.090)	(0.081)	(0.104)	(0.093)	(0.082)
Conservative	0.117	0.118	0.140	0.132	0.026	0.023
	(0.104)	(0.110)	(0.122)	(0.088)	(0.111)	(0.077)
Male	-	-	0.106	-0.030	0.185*	0.055
			(0.065)	(0.094)	(0.093)	(0.072)
Hispanic	-0.113	0.226+	0.130	-0.051	-0.093	-0.172+
	(0.097)	(0.136)	(0.113)	(0.107)	(0.124)	(0.096)
Black	0.098	0.136	0.295*	0.039	0.010	0.172+
	(0.115)	(0.108)	(0.114)	(0.125)	(0.099)	(0.090)
Other race(s)	-0.074	0.047	0.172	-0.091	-0.087	0.160
	(0.114)	(0.117)	(0.120)	(0.102)	(0.098)	(0.099)
Age 25 to 34	0.181	-0.172	0.050	-0.127	-0.029	0.009
	(0.120)	(0.113)	(0.161)	(0.106)	(0.117)	(0.107)
Age 35 to 44	0.178	-0.125	-0.053	0.239	0.096	0.019
	(0.122)	(0.148)	(0.150)	(0.148)	(0.125)	(0.126)
Age 45 to 54	0.192	0.075	0.067	0.246	0.222	0.053
	(0.133)	(0.131)	(0.174)	(0.150)	(0.152)	(0.112)
Age 55 to 64	0.269*	0.156	0.103	0.140	-0.005	0.349**
	(0.131)	(0.134)	(0.151)	(0.147)	(0.110)	(0.120)
Age 65 or older	0.064	0.086	0.104	0.246+	-0.024	0.192
	(0.143)	(0.146)	(0.166)	(0.138)	(0.167)	(0.125)
High school graduate	0.212	0.469*	-	-	-0.012	0.259*
	(0.151)	(0.227)			(0.156)	(0.103)
Some college	0.050	0.309	-	-	-	0.191+
	(0.140)	(0.199)				(0.105)
College graduate	0.059	0.269	-	-	-0.085	0.323*
	(0.163)	(0.224)			(0.122)	(0.135)
Post college	0.084	0.381+	-	-	-0.192	0.274*
	(0.168)	(0.221)			(0.136)	(0.134)
Income $20K-$34,999	0.122	0.091	-0.316	-0.100	0.273	-0.050
	(0.165)	(0.202)	(0.302)	(0.151)	(0.259)	(0.127)
Income $35K-$49,999	0.089	0.001	-0.651**	-0.268	0.040	-0.165
	(0.166)	(0.170)	(0.202)	(0.171)	(0.198)	(0.116)

Income $50K-$74,999	0.277	0.260+	-0.613**	0.389**	0.298	0.129
	(0.213)	(0.152)	(0.208)	(0.147)	(0.192)	(0.131)
Income $75K-$99,999	0.076	0.069	-0.415*	0.110	0.167	0.021
	(0.151)	(0.149)	(0.180)	(0.144)	(0.202)	(0.104)
Income $100K+	-0.081	0.152	-0.539**	-0.085	0.060	-0.069
	(0.175)	(0.152)	(0.185)	(0.144)	(0.168)	(0.118)
Married	0.012	-0.129	0.009	-0.258**	-0.090	-0.094
	(0.088)	(0.092)	(0.075)	(0.085)	(0.109)	(0.071)
Northeast	-0.247**	0.022	-0.010	-0.151	-0.121	-0.078
	(0.090)	(0.103)	(0.106)	(0.098)	(0.122)	(0.087)
Midwest	-0.001	0.117	0.037	0.195+	0.016	0.012
	(0.098)	(0.086)	(0.097)	(0.102)	(0.126)	(0.084)
West	0.001	-0.135	0.000	-0.025	-0.046	-0.115
	(0.083)	(0.089)	(0.080)	(0.103)	(0.099)	(0.083)
Constant	-0.400	-0.495*	0.425	-0.276	-0.105	-0.403*
	(0.263)	(0.243)	(0.295)	(0.240)	(0.333)	(0.196)
R^2	0.588	0.608	0.569	0.621	0.611	0.621
N	156	144	172	124	122	179

Notes. Cell entries are unstandardized coefficients (standard errors in parentheses) from OLS regressions, adjusted for sampling weights. Some college in column (5) was dropped out from the regression due to its collinearity with other explanatory variables.

***p<.001 **p<.01 *p<.05 +p<.10

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Appendix A. Survey Methodology

Sample Design

Phone numbers used for this study were randomly generated from landline and cell phone sampling frames, with an overlapping frame design. The RDD landline sample was generated through Dynata. The Dynata RDD procedure produces an Equal Probability Selection Method (EPSEM) sample of randomly drawn telephone numbers from all working banks with one or more assigned numbers. The sample was generated shortly before the beginning of data collection to provide the most up-to-date sample possible, maximizing the number of valid telephone extensions. Additional sample was generated during the fielding period to ensure appropriate representation between census regions. The initial landline sample went through Dynata's disconnect screening process. The unlisted phone numbers are sent a 'pulse' to determine switch status. If the switch is not active, the number is flagged disconnected. If the switch is active, the system uses post-call analysis to determine if the number is disconnected (SIT, fax, fast busy etc.) or working (no answer, live answer, answering machine).

The RDD Cell Phone sample was generated by Dynata. Dynata starts with the most recent monthly Telcordia TPM (Terminating Point Master) Data file. This is Telcordia's master file of NPA-NXX and Block-ID records for the North American Number Plan. It contains at least one record per NPA-NXX. For prefixes (NPA-NXXs) where 1000-block number pooling is in effect, this file also provides information for individual 1000-blocks. This allows users to identify those 1000-blocks that have either not been assigned for service or that have been allocated to different service providers. "Mixed" or "shared" 100-blocks (NXXTYPES 50, 54, 66) are then compared to Dynata's list---assisted RDD database. 100-blocks with no listed numbers are retained in the wireless frame and 100-blocks containing listed numbers on the RDD frame are removed. The result is a frame of 100-blocks that is mutually exclusive of Dynata's list-assisted RDD frame while allowing coverage in prefixes and 1000-blocks that potentially provide both landline and wireless service.

Field Procedures

Because of the onset of the global Covid-19 Pandemic and in order to provide a safe environment for the employees to work, ReconMR shut down on-site operations in March 2020, and turned it into a virtualized call center environment. As such, the survey was conducted by interviewers working from home. Measures were taken to ensure data security and the continued adherence to data quality and data collection standards for ReconMR's work from home solution. Interviewers were set up to connect to ReconMR's data center via a secure, private VPN tunnel. This solution employs end-to-end encryption as well as multi-factor authentication. In addition, all servers remained behind a secure firewall, and all calls were initiated from on-premises devices. ReconMR work-from-home solution allowed for all agents to continue to be live-monitored for quality assurance via our Voxco audio and video monitoring systems.

Interviews were conducted using computer-assisted telephone interviewing (CATI) software. Interviewer training was conducted prior to the study pilot. CATI interviewers received an annotated questionnaire and project materials that explained the history, background, and goals of the study. The background and overview training of the study's various components was followed by a detailed CATI program training. Experienced project team supervisors and trainers spent time reviewing both questionnaires one question at a time with each interviewer. The goal was to fully explain the proper delivery of each question and the reasoning and intent behind all the sections and response option in each questionnaire. Interviewers spent a great deal of time practicing with the CATI program and conducting mock interviews with each other and the data collection supervisors. Interviewers were carefully trained to ask for the youngest male or the youngest female currently at home when calling a landline. Interviewers were also trained at explaining the purpose of the study, how to gain respondent cooperation by explaining the inherent benefits of the research, how the project will benefit the public good and how to answer respondent's questions, as well as how to record respondents' answers accurately.

In order to maximize survey participation, the following procedures were enacted during the field period:

Up to 5 follow-up attempts were made to contact non-responsive numbers (e.g. no answer, busy, answering machine). Exception was made to records flagged as belonging to census groups greater than 50% Hispanic. These cases received up to 7 follow-up attempts to non-responsive numbers.

- Non-responsive numbers were contacted multiple times, varying the times of day, and the days of the week that call-backs were placed.
- Interviewers stressed that the study was done for research purposes and that responses were strictly confidential and, when asked, they stated as accurately as possible the expected length of the interview. In addition, interviewers were provided with responses to possible respondent concerns raised during interviews, in order to minimize break offs.
- Respondents were offered the option of scheduling a call-back at their convenience.
- Households where the initial call resulted in respondents hanging up the phone or breaking off during the interview were called back after a 28-hour delay in an attempt to convert

into a completed interview. Interviewers received special instructions on how to handle these calls.

- Respondents reached by cell phone were offered $10 if they requested compensation for their time. No such cell phone complaints were made during fielding of either study.

Quality/Data Verification

Project supervisors validated 10% of each interviewer's completed surveys by calling back the respondent and verifying specific responses. Additionally, supervisors continually monitored live calls through ReconMR's call monitoring system in order to ensure proper interviewing procedures were maintained.

Appendix B. Demographics Measures

Respondents reported their sex, age, race, ethnicity, education, income, and zip code. For each of these questions, respondents who did not answer the question were coded with an arbitrary value, and a dummy variable was constructed, coded 1 for respondents who did not answer and 0 otherwise.

Male: "Pardon, but I'm required to verify: are you male or female?" A dichotomous variable "*male*" was set to 1 of respondents who answered "male" and 0 otherwise.

Age. "What is your age?" IF DID NOT ANSWER: "Could you please tell me if you are between the ages of 18 to 24, 25 to 34, 35 to 44, 45-54, 55 to 64, or 65 or older?" Six dummy variables were constructed for six age groups: 18-24, 25-34, 35-44, 45-54, 55-64, 65+. *Age 18-24* was the omitted group in the regressions.

Race. "I am going to read you a list of five race categories. Please choose one or more races that you consider yourself to be: White; Black or African American; American Indian or Alaska Native; Asian; OR Native Hawaiian or Other Pacific Islander." Dummy variables for *white, black,* and *other race* were constructed and were set to 1 for respondents who selected "White" and nothing else, "Black or African American" and nothing else, and another category or more than one category, respectively, and 0 otherwise. *White* was the omitted group in the regressions.

Hispanic ethnicity. "Are you Spanish, Hispanic, or Latino?" A dichotomous variable "*Hispanic*" was set to 1 of respondents who answered "yes" and 0 otherwise.

Education. "What is the highest grade of school you completed? Less than 1st grade, 1st, 2nd, 3rd or 4th grade, 5th or 6th grade, 7th or 8th grade, 9th grade, 10th grade, 11th grade, 12th grade NO DIPLOMA, HIGH SCHOOL GRADUATE-high school DIPLOMA or the equivalent (For example: GED), Some college but no degree, Associate degree in college - Occupational/vocational program, Associate degree in college - Academic program, Bachelor's degree (For example: BA, AB, BS), Master's degree (For example: MA, MS, MEng, MEd, MSW, MBA), Professional School Degree (For example: MD, DDS, DVM, LLB, JD), and Doctorate degree (For example: PhD, EdD)". Dummy variables for *less than high school graduate, high school graduate, some college, college graduate,* and *post-college* were constructed and set to 1 if respondents who chose any response up to "12 grade NO DIPLOM"; "HIGH SCHOOL GRADUATE-high school DIPLOMA or the equivalent (For example: GED)"; "Some college but no degree", "Associate degree in college - Occupational/vocational program", or "Associate degree in college - Academic program"; "Bachelor's degree (For example: BA, AB, BS)"; and "Master's degree (For example: MA, MS, MEng, MEd, MSW, MBA)", "Professional School Degree (For example: MD, DDS, DVM, LLB, JD)", or "Doctorate degree (For example: PhD, EdD)" and 0 otherwise. *Less than high school graduate* was the omitted group in the regressions.

Income. **"**The next question is about the total income in 2019 for you and all members of your family who lived with you during 2019, before taxes. Please include money you and all members of your family received from jobs, pensions, social security, interest, dividends, capital gains, profits from businesses, unemployment payments, and all other money received. Adding up the income from all these sources and all other sources, which of the following CATEGORIES best describes your total income of you and all members of your family who lived with you in 2019, before taxes, from all sources? under 20 thousand dollars, 20 to under 35 thousand, 35 to under 50 thousand, 50 to under 75 thousand, 75 to under 100 thousand, 100 thousand or more?" Six dummy variables were constructed for six income groups: *under $20K, $20K to under $35K, $35K to under $50K, $50K to under $75K, $75K to under $100K,* and *$100K or more*. *Under $20K* was the omitted group in the regressions.

Marital status. "Are you married, widowed, divorced, separated or never married?" A dichotomous variable "*married*" was set to 1 of respondents who answered "married" and 0 otherwise.

Region. "What is your five-digit zip code at your home?" Zip codes were matched with states, which were matched with Census regions. Dummy variables for *northeast*, *Midwest*, *south*, and *west* were constructed. *West* was the omitted group in the regressions.

Appendix C: Appendix Tables

Appendix Table A1. Frequencies of EV Measures Among Respondents Who Will Buy a Car in the Future and Among Respondents Who Will Buy a Car But Will Not Consider Buying an EV

	Among respondents who will buy a car in the future	Among respondents who will buy a car in the future and will not consider buying an EV
QN2. As far as you know, have you or anyone you know personally ever driven a car or truck that runs only on electricity and not on gasoline, or has that not happened?		
Have	39%	32%
Have not	60	65
DK/RF	1	3
Total	100%	100%
	(N=313)	(N=130)
QN7. As compared to driving a car that runs on gasoline, how much do you think that driving an all-electric car helps the environment? A great deal, a lot, a moderate amount, a little, or not at all?		
A great deal	33%	26%
A lot	19	12
A moderate amount	24	22
A little	12	13
Not at all	12	28
DK/RF	0	0
Total	100%	100%
	(N=313)	(N=130)
QN8. As compared to cars that run on gasoline, do you think that people who own cars that run only on electricity spend more money to repair them and keep them running, spend less money on that, or spend about the same amount of money?		
More money	30%	46%
Less money	14	7
About the same amount of money	50	44
DJ/RF	5	3
Total	100%	100%
	(N=313)	(N=130)

	Among respondents who will buy a car in the future	Among respondents who will buy a car in the future and will not consider buying an EV
QN9. As compared to cars that run on gasoline, do you think that the engines of cars that run only on electricity can speed up more quickly, speed up more slowly, or speed up about equally fast?		
More quickly	33%	22%
More slowly	23	32
About equally fast	39	38
DK/RF	5	7
Total	100%	100%
	(N=313)	(N=130)
QN10. People who drive cars that run only on electricity have to pay for the electricity to charge the cars' batteries. As compared to the cost of gasoline to drive one mile, do you think the cost of electricity to drive one mile is more, less, or the same?		
More	21%	29%
Less	26	29
The same	48	35
	5	8
	100%	100%
	(N=313)	(N=130)
QN11. How difficult do you think it is for people who drive cars that run only on electricity to find places to charge them up when they need to be charged? Extremely difficult, very difficult, moderately difficult, slightly difficult, or not difficult at all?		
Extremely difficult	20%	28%
Very difficult	22	20
Moderately difficult	36	38
Slightly difficult	15	7
Not difficult at all	6	7
DK/RF	1	0
Total	100%	100%
	(N=313)	(N=130)

	Among respondents who will buy a car in the future	Among respondents who will buy a car in the future and will not consider buying an EV
QN11a. How likely do you think it is that the batteries in cars that run only on electricity will catch on fire? Extremely likely, very likely, moderately likely, slightly likely, or not likely at all?		
Extremely likely	4%	9%
Very likely	5	8
Moderately likely	20	25
Slightly likely	33	33
Not likely at all	35	22
DK/RF	3	3
Total	100%	100%
	(N=313)	(N=130)
QN12. As you may know, the more miles a car has been driven, the less money the owner can sell it for. As compared to cars that run on gasoline, do you think the value of cars that run only on electricity goes down faster over the years, goes down more slowly, or goes down about equally fast?		
Faster	14%	21%
More slowly	30	22
About equally fast	53	54
DK/RF	3	3
Total	100%	100%
	(N=313)	(N=130)
QN13. How many car mechanics would you guess can fix cars that run only on electricity? All of them, most of them, about half of them, a few of them, or none of them?		
All of them	1%	1%
Most of them	10	12
About half of them	24	22
A few of them	60	57
None of them	4	7
DK/RF	0	0
Total	100%	100%
	(N=313)	(N=130)

Appendix Table A2. Predictors of Resistance to Purchasing All-Electric Vehicles Using Alternative Codings of Bipolar Measures

Predictor	Unstandardized regression coefficients
GW will not be a serious national problem	0.300**
	(0.096)
EV batteries are more likely to catch on fire	0.274*
	(0.118)
Maintaining EVs is more costly than maintaining gasoline-powered cars	0.128+
	(0.070)
Maintaining EVs is less costly than maintaining gasoline-powered cars	-0.047
	(0.077)
Maintaining EVs is as costly as maintaining gasoline-powered cars (omitted)	-
EVs have poorer acceleration than gasoline-powered cars	0.030
	(0.067)
EVs have better acceleration than gasoline-powered cars	-0.122+
	(0.065)
EVs have the same acceleration as gasoline-powered cars (omitted)	-
Driving EV will not help the environment	0.050
	(0.087)
Had not experienced EV	-0.045
	(0.058)
Driving EVs is more costly than driving gasoline-powered cars	0.059
	(0.079)
Driving EVs is less costly than driving gasoline-powered cars	0.035
	(0.293)
Driving EVs is as costly as driving gasoline-powered cars (omitted)	-
Charging EV batteries is more difficult	0.038
	(0.100)
EVs lose value more quickly than do gasoline-powered cars	0.047
	(0.076)
EVs lose value less quickly than do gasoline-powered cars	-0.056
	(0.064)
EVs lose value as quickly as do gasoline-powered cars (omitted)	-
Mechanics to fix EVs are less available than mechanics to fix gasoline-powered cars	0.136
	(0.157)
Democrat	0.115+
	(0.069)
Republican	0.102
	(0.083)
Liberal	-0.164*

	(0.070)
Conservative	0.069
	(0.075)
Male	0.039
	(0.059)
Hispanic	-0.064
	(0.081)
Black	0.097
	(0.080)
Other race(s)	-0.017
	(0.084)
Age 25 to 34	0.001
	(0.086)
Age 35 to 44	0.073
	(0.094)
Age 45 to 54	0.116
	(0.102)
Age 55 to 64	0.229*
	(0.098)
Age 65 or older	0.097
	(0.094)
High school graduate	0.295*
	(0.143)
Some college	0.158
	(0.147)
College graduate	0.205
	(0.160)
Post college	0.171
	(0.161)
Income $20K-$34,999	0.056
	(0.122)
Income $35K-$49,999	0.014
	(0.131)
Income $50K-$74,999	0.202
	(0.123)
Income $75K-$99,999	0.096
	(0.107)
Income $100K+	0.018
	(0.116)
Married	-0.091
	(0.062)
Northeast	-0.120+
	(0.069)
Midwest	0.081
	(0.077)
West	-0.044
	(0.063)
Constant	-0.141

	(0.193)
R^2	0.492
N	303

Notes. Cell entries are unstandardized coefficients (standard errors in parentheses) from an OLS regression, adjusted for sampling weights.

***p<.001 **p<.01 *p<.05 +p<.10

Appendix Table A3. Moderating Roles of Sex, College Degree, and No Prior Exposure to the Predictors of Public Resistance to Purchasing All-Electric Vehicles

Predictor	Unstandardized regression coefficients (1)	Unstandardized regression coefficients (2)	Unstandardized regression coefficients (2)
GW will not be a serious national problem	0.280+ (0.143)	0.404*** (0.118)	-0.070 (0.155)
GW will not be a serious national problem × male	-0.101 (0.199)	-	-
GW will not be a serious national problem × college degree	-	-0.162 (0.178)	-
GW will not be a serious national problem × no exposure	-	-	0.615** (0.188)
EV batteries are more likely to catch on fire	0.372** (0.135)	0.244* (0.124)	0.289* (0.133)
EV batteries are more likely to catch on fire × male	-0.211 (0.213)	-	-
EV batteries are more likely to catch on fire × college degree	-	-0.135 (0.194)	-
EV batteries are more likely to catch on fire × no exposure	-	-	-0.042 (0.186)
Maintaining EVs is more costly than maintaining gasoline-powered cars	0.081 (0.113)	0.426*** (0.119)	0.088 (0.130)
Maintaining EVs is more costly than maintaining gasoline-powered cars × male	0.284+ (0.152)	-	-
Maintaining EVs is more costly than maintaining gasoline-powered cars × college degree	-	-0.197 (0.150)	-
Maintaining EVs is more costly than maintaining gasoline-powered cars × no exposure	-	-	0.267+ (0.161)
EVs have poorer acceleration than gasoline-powered cars	0.143 (0.106)	0.050 (0.099)	0.371*** (0.107)

EVs have poorer acceleration than gasoline-powered cars × male	0.076 (0.146)	-	-
EVs have poorer acceleration than gasoline-powered cars × college degree	-	0.087 (0.127)	-
EVs have poorer acceleration than gasoline-powered cars × no exposure	-	-	-0.262* (0.131)
Driving EV will not help the environment	-0.225+ (0.126)	0.114 (0.113)	0.080 (0.148)
Driving EV will not help the environment × male	0.486** (0.167)	-	-
Driving EV will not help the environment × college degree	-	-0.244 (0.166)	-
Driving EV will not help the environment × no exposure	-	-	-0.003 (0.172)
Had no experienced EV	0.115+ (0.067)	-0.287*** (0.080)	-0.237 (0.317)
Had no experienced EV × male	-0.271* (0.108)	-	-
Had no experienced EV × college degree	-	0.390*** (0.103)	-
Driving EVs is more costly than driving gasoline-powered cars	-0.053 (0.070)	-0.020 (0.069)	-0.094 (0.074)
Driving EVs is more costly than driving gasoline-powered cars × male	-0.020 (0.025)	-	-
Driving EVs is more costly than driving gasoline-powered cars × college degree	-	-0.016 (0.025)	-
Driving EVs is more costly than driving gasoline-powered cars × no exposure	-	-	0.066** (0.024)
Charging EVs' batteries is more difficult	0.050 (0.135)	-0.006 (0.144)	0.207 (0.141)
Charging EVs' batteries is more difficult × male	-0.079 (0.192)	-	-
Charging EVs' batteries is more difficult × college degree	-	0.202 (0.208)	-

Charging EVs' batteries is more difficult × no exposure	-	-	-0.207 (0.185)
EVs lose value more quickly than do gasoline-powered cars	0.487*** (0.115)	0.097 (0.136)	0.110 (0.109)
EVs lose value more quickly than do gasoline-powered cars × male	-0.568*** (0.163)	-	-
EVs lose value more quickly than do gasoline-powered cars × college degree	-	0.114 (0.173)	-
EVs lose value more quickly than do gasoline-powered cars × no exposure	-	-	-0.105 (0.154)
Mechanics are less available to fix EVs than fix gasoline-powered cars	0.044 (0.157)	0.594** (0.200)	0.026 (0.166)
Mechanics are less available to fix EVs than fix gasoline-powered cars × male	0.363 (0.249)	-	-
Mechanics are less available to fix EVs than fix gasoline-powered cars × college degree	-	-0.753** (0.253)	-
Mechanics are less available to fix EVs than fix gasoline-powered cars × no exposure	-	-	0.019 (0.228)
Democrat	0.100 (0.084)	0.220* (0.098)	-0.007 (0.106)
Democrat × male	0.073 (0.119)	-	-
Democrat × college degree	-	-0.214+ (0.126)	-
Democrat × no exposure	-	-	0.251+ (0.137)
Republican	0.206+ (0.116)	0.065 (0.085)	0.225+ (0.130)
Republican × male	-0.174 (0.153)	-	-
Republican × college degree	-	-0.025 (0.144)	-
Republican × no exposure	-	-	-0.235 (0.152)

Liberal	-0.243**	-0.301**	-0.232*
	(0.091)	(0.099)	(0.096)
Liberal × male	0.116	-	-
	(0.119)		
Liberal × college degree	-	0.192	-
		(0.125)	
Liberal × no exposure	-	-	0.107
			(0.123)
Conservative	0.075	0.055	0.049
	(0.108)	(0.081)	(0.118)
Conservative × male	0.051	-	-
	(0.153)		
Conservative × college degree	-	0.074	-
		(0.144)	
Conservative × no exposure	-	-	-0.022
			(0.140)
Male	0.021	0.035	0.247**
	(0.357)	(0.079)	(0.084)
Male × college degree	-	0.085	-
		(0.099)	
Male × no exposure	-	-	-0.207+
			(0.106)
Hispanic	0.111	-0.109	-0.080
	(0.136)	(0.105)	(0.124)
Hispanic × male	-0.205	-	-
	(0.162)		
Hispanic × college degree	-	0.233	-
		(0.150)	
Hispanic × no exposure	-	-	-0.121
			(0.156)
Black	0.084	0.033	-0.015
	(0.111)	(0.107)	(0.099)
Black × male	0.049	-	-
	(0.152)		

Black × college degree	-	0.272+ (0.152)	-
Black × no exposure	-	-	0.177 (0.132)
Other race(s)	0.033 (0.115)	-0.126 (0.103)	-0.067 (0.105)
Other race(s) × male	-0.130 (0.155)	-	-
Other race(s) × college degree	-	0.284+ (0.154)	-
Other race(s) × no exposure	-	-	0.230 (0.144)
Age 25 to 34	-0.155 (0.119)	-0.017 (0.099)	-0.071 (0.111)
Age 25 to 34 × male	0.348* (0.167)	-	-
Age 25 to 34 × college degree	-	0.050 (0.179)	-
Age 25 to 34 × no exposure	-	-	0.086 (0.154)
Age 35 to 44	-0.108 (0.148)	0.318* (0.139)	0.065 (0.126)
Age 35 to 44 × male	0.270 (0.189)	-	-
Age 35 to 44 × college degree	-	-0.374* (0.189)	-
Age 35 to 44 × no exposure	-	-	-0.026 (0.174)
Age 45 to 54	0.065 (0.136)	0.187 (0.124)	0.197 (0.149)
Age 45 to 54 × male	0.107 (0.187)	-	-
Age 45 to 54 × college degree	-	-0.103 (0.196)	-

Age 45 to 54 × no exposure	-	-	-0.120 (0.181)
Age 55 to 64	0.155 (0.134)	0.291* (0.135)	-0.096 (0.115)
Age 55 to 64 × male	0.110 (0.184)	-	-
Age 55 to 64 × college degree	-	-0.197 (0.191)	-
Age 55 to 64 × no exposure	-	-	0.472** (0.165)
Age 65 or older	0.102 (0.144)	0.224+ (0.130)	-0.099 (0.165)
Age 65 or older × male	-0.018 (0.205)	-	-
Age 65 or older × college degree	-	-0.129 (0.196)	-
Age 65 or older × no exposure	-	-	0.300 (0.201)
High school graduate	0.383 (0.250)	-	0.431* (0.184)
High school graduate × male	-0.195 (0.289)	-	
High school graduate × no exposure	-	-	-0.155 (0.165)
Some college	0.308 (0.229)	-	0.491* (0.193)
Some college × male	-0.288 (0.264)	-	
Some college × no exposure	-	-	-0.288+ (0.171)
College graduate	0.310 (0.247)	-	0.371* (0.163)
College graduate × male	-0.275 (0.288)	-	-

College graduate × no exposure	-	-	-0.056
			(0.134)
Post college	0.375	-	0.280*
	(0.244)		(0.135)
Post college × male	-0.313	-	-
	(0.289)		
Post college × no exposure	-	-	0.000
			(0.000)
College degree	-	0.385	
		(0.345)	
Income $20K-$34,999	0.084	-0.038	-0.071
	(0.174)	(0.118)	(0.222)
Income $20K-$34,999 × male	0.099	-	-
	(0.210)		
Income $20K-$34,999 × college degree	-	0.166	-
		(0.290)	
Income $20K-$34,999 × no exposure	-	-	0.074
			(0.251)
Income $35K-$49,999	-0.100	-0.123	-0.104
	(0.140)	(0.138)	(0.185)
Income $35K-$49,999 × male	0.246	-	-
	(0.186)		
Income $35K-$49,999 × college degree	-	-0.143	-
		(0.217)	
Income $35K-$49,999 × no exposure	-	-	-0.012
			(0.200)
Income $50K-$74,999	0.180	0.425***	0.107
	(0.133)	(0.125)	(0.153)
Income $50K-$74,999 × male	0.150	-	-
	(0.205)		
Income $50K-$74,999 × college degree	-	-0.627**	-
		(0.215)	
Income $50K-$74,999 × no exposure	-	-	0.088
			(0.194)

Income \$75K-\$99,999	0.022 (0.126)	0.160 (0.120)	-0.007 (0.164)
Income \$75K-\$99,999 × male	0.122 (0.152)	-	-
Income \$75K-\$99,999 × college degree	-	-0.187 (0.208)	-
Income \$75K-\$99,999 × no exposure	-	-	0.066 (0.176)
Income \$100K+	0.060 (0.129)	-0.098 (0.127)	-0.093 (0.128)
Income \$100K+ × male	-0.055 (0.167)	-	-
Income \$100K+ × college degree	-	-0.052 (0.194)	-
Income \$100K+ × no exposure	-	-	0.076 (0.150)
Married	-0.146 (0.091)	-0.275*** (0.076)	-0.109 (0.115)
Married × male	0.138 (0.124)	-	-
Married × college degree	-	0.266* (0.106)	-
Married × no exposure	-	-	0.004 (0.134)
Northeast	0.034 (0.104)	-0.249** (0.090)	-0.042 (0.120)
Northeast × male	-0.284* (0.136)	-	-
Northeast × college degree	-	0.235+ (0.135)	-
Northeast × no exposure	-	-	-0.026 (0.147)
Midwest	0.114 (0.092)	0.164+ (0.093)	0.032 (0.125)

Midwest × male	-0.116	-	-
	(0.133)		
Midwest × college degree	-	-0.138	-
		(0.131)	
Midwest × no exposure	-	-	-0.017
			(0.148)
West	-0.106	0.006	-0.009
	(0.086)	(0.094)	(0.094)
West × male	0.102	-	-
	(0.120)		
West × college degree	-	0.000	-
		(0.121)	
West × no exposure	-	-	-0.091
			(0.126)
Constant	-0.452+	-0.351	-0.262
	(0.273)	(0.229)	(0.266)
R^2	0.579	0.589	0.605
N	303	303	303

Notes. Cell entries are coefficients (standard errors in parentheses) of OLS regression, adjusted for sampling weights.

***p<.001 **p<.01 *p<.05 +p<.10