



# TEXAS TRENDS 2023

## ELECTRIC VEHICLES



Hobby School of Public Affairs  
UNIVERSITY OF HOUSTON



TEXAS SOUTHERN UNIVERSITY  
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# Executive Summary

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The Texas Trends Surveys and Reports are part of a collaboration between Texas Southern University's Barbara Jordan-Mickey Leland School of Public Affairs and the University of Houston's Hobby School of Public Affairs. The survey was fielded by YouGov on behalf of researchers affiliated with the Jordan-Leland School and the Hobby School between October 6 and October 18, 2023, and included 1,914 respondents from across Texas. The questionnaire offered the option to respond in English or Spanish. The respondents were matched to a sampling frame on gender, age, race/ethnicity, and education and are representative of the Texas adult population aged 18 years of age and older, resulting in a weighted confidence interval of +/-2.9.

The results of the 2023 Texas Trends survey are presented in six separate reports. The previous five reports analyzed support for state propositions, vouchers/school choice, the 2023 primary elections, extreme weather, and climate change. This sixth report examines reasons why Texans choose to purchase or lease an electric vehicle (EV) or not. In addition, we explore under which conditions Texans would be more likely to purchase a gasoline-powered vehicle compared to an electric-powered vehicle.

## **Current electric vehicle owners or lessees:**

- Only 5.1% of respondents said they owned an electric-powered vehicle.
- Millennials and those in the Gen Z cohorts were more likely to own or lease an EV.<sup>1</sup>
- Asian (7.5%) and Black (6.1%) respondents had the highest percentages of EV ownership compared to whites, Hispanics, and those in the "Other" category.
- Among Texans who currently own or lease an electric vehicle, the majority (56.6%) considered performance as the biggest attribute when purchasing/leasing followed by charging capabilities (40.5%), and cost compared to gasoline-powered vehicles (39%). Democrats and Republicans (68.4% and 49.3%, respectively) selected performance as the top attribute along with both male and female Texans (54.5% and 58.6%, respectively).

## **Likelihood of leasing or owning an electric in the future:**

- Of the 94.9% of respondents who did not currently own or lease an EV, the 59.5% were not too likely or not at all likely to consider leasing or purchasing an EV in the future.

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<sup>1</sup> See the Hobby School of Public Affairs report [Texas Trends Survey 2021: Electric Vehicles](#)

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- Asian (57.6%), Hispanic (36.7%), and Black (35.7%) respondents revealed higher likelihoods of purchasing or leasing an EV in the future compared to whites (27.1%).
  - Slightly more than a fifth of respondents in the lower income bracket (less than \$30,000) and middle income bracket (\$30,000 and \$79,999) indicated that they would be somewhat likely to purchase an EV in the future. Less than a tenth of Texans in the same income groups said they would be very likely to make a future EV purchase.
  - Democrats led Republicans by 19.4 percentage points when it came to either somewhat or very likely to buy an EV; over 70% of Republicans and over 60% of Independents were not likely to purchase or lease an EV.

## **Reasons for not purchasing an electric vehicle:**

- Forty-six percent of respondents cited lack of charging stations as a the main reason for not wanting to own an electric vehicle in the future. The cost compared to gasoline vehicles (38.2%) and the inability to charge an electric vehicle at home (36.5%) were also main reasons Texans who did not already own an EV did not want to purchase one in the future.
- A majority of respondents who lived in a town or rural area of Texas indicated lack of charging stations was the main reason they did not want an electric vehicle, while those who live in the city or suburbs cited lack of charging stations and the cost was too high.

## **Choice experiment**

- The results from the choice experiment confirm that Texas on average prefer vehicles power by internal combustion engines to hybrid and electric vehicles.
- The conjoint makes apparent that irrespective of the fuel type, lower prices, operating costs and charging time, make respondents less likely to choose a vehicle profile; the ability to drive longer distances on a single-charge, on the other hand, makes vehicles more appealing.
- Overall, the findings highlight the technological and economic hurdles to electric vehicle adoption: as long as the price of buying and operating an EV remain high, and the driving autonomy remains low, consumers are more likely to choose gasoline powered cars to EVs.

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# 2023 Texas Trends Survey: Electric Vehicles Report

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## Introduction

The United States is making strides in the transition to phase out gas-powered vehicles by 2040. The Infrastructure Investment and Jobs Act (H.R.3684), which came into effect on November 15, 2021, dedicates \$7.5 billion with the aim of accelerating EV adoption, reduce emissions, building a national network of EV chargers, setting standards for charging stations, and providing grants for infrastructure development. However, challenges such as high vehicle costs, extended charging times, the need for charging infrastructure, electric grid capacity, and concerns about mileage range persist among consumers. Not many Americans drive EVs: it estimated that 1 in every 9 drivers in the United States own or lease an electric vehicle.<sup>2</sup> While there are tax credits in place for consumers (for instance a \$7,500 full credit incentive is included in the Inflation Reduction Act of 2022 (IRA)), they have restrictions and only apply for those EVs fully made in the US.<sup>3</sup>

To support the transition to EVs, several states, including Texas, offer incentives, such as grants and rebates to individuals purchasing EVs, with local utility companies also providing rebates.<sup>4</sup> Texas faces its own set of challenges and controversies, such as franchise laws that prevent direct sales of vehicles from manufacturers to consumers and proposed legislation to increase the cost of owning an EV to offset lost gasoline tax revenue. In this report, which presents results from the 2023 UH-TSU Texas Trends Survey, we examine reasons why Texans choose to purchase or lease an electric vehicle (EV), and explore under which conditions Texans would be more likely to purchase a gasoline-powered vehicle compared to an electric or hybrid vehicle. The Texas Trends Survey is a five-year survey project by the Hobby School of Public Affairs at the University of Houston and the Barbara Jordan – Mickey Leland School of Public Affairs at Texas Southern University. The aim of this collaboration is to study Texas’s changing population, with emphasis on the state’s Black and Latino residents. In addition to a representative sample of all Texans, the survey includes an oversample of these thtwtoree groups to allow for an objective and statistically valid report of their opinions and experiences.

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<sup>2</sup>Alison Spencer, Stephanie Ross and Alec Tyson, [How Americans view electric vehicles](#), *Pew Research Center*, July 13, 2023.

<sup>3</sup>See Jim Tankersley, Ana Swanson, Jack Ewing, and Coral Davenport, [A New Law Supercharged Electric Car Manufacturing, but Not Sales](#), *The New York Times*, November 8, 2023.

<sup>4</sup>Local organizations like [EvolveHouston](#), a partnership led by the City of Houston, the University of Houston, NRG Energy, CenterPoint Energy, and Shell Energy, are actively engaged in research and outreach activities aimed at accelerating clean transportation through electrification.



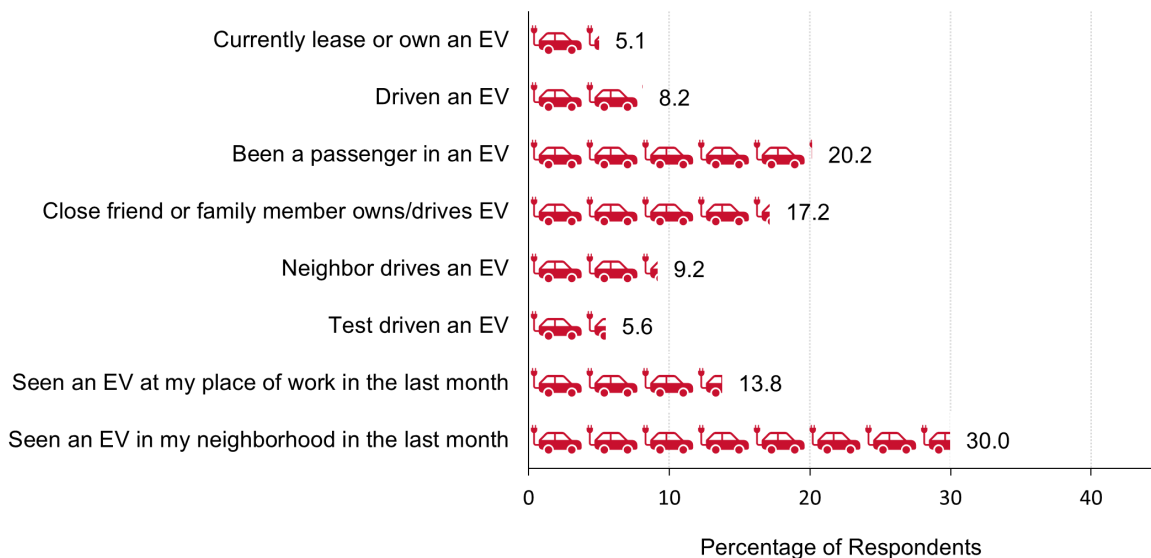
## 2023 Texas Trends Survey: Demographics

For this weighted survey population, women account for slightly more than half of respondents (51.2%) compared to men (48.8%). With regard to race and ethnicity, 44.5% of respondents were white, followed by 35.9% Hispanic, 12.5% Black, 2.1% Asian, and the remaining 5% were in the other category. Regarding age, Millennials (1981-1996) were the largest group (30%), while those in the Silent Generation (1928-1945) made up the smallest age cohort (3.2%). Over a quarter of respondents (26.2%) belong to the Generation X (Gen X; 1965-1980) cohort, slightly more than a fifth (23.2%) of respondents are Baby Boomers (1946-1964), and the remaining respondents belong to the Generation Z (Gen Z; 1997-2012) cohort (17.3%).<sup>5</sup>

## Owning, leasing, and experience with electric vehicles

The US and other nations are taking steps to gradually eliminate the sale of gas-powered vehicles by mid-Century.<sup>6</sup> While there is progress in the adoption of electric vehicles at the national and state levels, some major challenges remain, including sale costs, charging times, limited charging infrastructure, and mileage range, among others. Our survey aims at identifying the importance and relative importance of these factors on the willingness of Texas residents to purchase or lease EVs.

**Figure 1:** Which of the following statements are true for you with regard to EVs?



Survey respondents were first asked about their experiences with vehicles—whether car, truck, or SUV—that *only* use electric power. Figure 1 shows a list of statements respondents were asked to choose about their experiences with electric-powered vehicles. Only 5.1% of respondents currently lease or own an EV, while nearly a fifth of respondents (17.2%) said a close friend or family member owns or drives an EV. More respondents have recently seen an EV in their neighborhood than at their place of work (30% and 13.8%, respectively). Still, respondents indicating they have had none of the listed experiences with EVs was the most common response, with two-fifths (40.6%) reporting no exposure to EVs.

<sup>5</sup>Gen Z extends to 2012, but only respondents aged 18 and older are included in the survey.

<sup>6</sup>Ibid. fn. 1.

## Race and ethnicity

With regard to ownership, Table 1 shows that less than a tenth of respondents of any race or ethnicity said they currently own or lease an EV. Asian (7.5%) and Black (6.1%) respondents had the highest percentages of EV ownership compared to white and Hispanic respondents, and those in the “Other” category. The most common response across all categories of race and ethnicity was seeing an EV in their neighborhood in the past month. The next most common response for Asian, Other, Hispanic, and Black respondents was for those indicating they have been a passenger in an EV (45.8%, 34.8%, 18.9%, and 18%, respectively). White respondents reported knowing a close friend or family member who owns/drives an EV as the second highest experience (19.2%), but also reported being a passenger in an EV at almost the same rate (19.0%). Asian Texans indicated having the most contact with EVs, reporting having been a passenger in and driving an EV at the highest rates (45.8% and 16.6%, respectively). Respondents in the “Other” category and Black respondents had the next most contact compared to white and Hispanic respondents.

**Table 1:** Which of the following statements are true for you with regard to EVs by race and ethnicity

	White	Black	Hispanic	Asian	Other
Currently lease or own an EV	5.2	6.1	5.1	7.5	0.9
Driven an EV	6.3	11.8	8.1	16.6	13.1
Been a passenger in an EV	19.0	18.0	18.9	45.8	34.8
Close friend or family member owns/drives an EV	19.2	15.5	13.9	32.7	20.9
Neighbor drives an EV	7.7	12.0	8.7	19.9	15.4
Test driven an EV	5.3	5.3	6.3	7.5	2.2
Seen an EV at my place of work in the last month	12.4	17.7	12.5	31.4	18.6
Seen an EV in my neighborhood in the last month	30.0	30.4	27.6	47.9	39.5

Note: Percentages are of those who selected the option.

Percentages are weighted and rounded to the nearest tenth.

## Electric vehicle ownership and experience by generation

There is a significant variation among generational cohorts when it comes to experiences with electric vehicles. When it comes to current EV ownership, Millennials are the largest group among any other demographic, with about a tenth saying they are current owners followed by the youngest generation (Gen Z) at 9.4%. Among those in the Silent/Boomer and Gen X cohorts, 13% or less have driven or test driven an EV, been a passenger, know close family or friends or neighbors who own an EV, or have seen one at their place of work in the last month. Conversely, Millennials and those belonging to Gen Z were more likely to report having been a passenger, knowing a close friend or family member who owns an EV, and seen an EV in their neighborhoods or places of work in the last month. Besides currently owning or leasing an EV, Gen Z respondents have the highest percentages for each type of experience with EVs than any other generational cohort.

**Table 2:** Which of the following statements are true for you with regard to EVs by generation

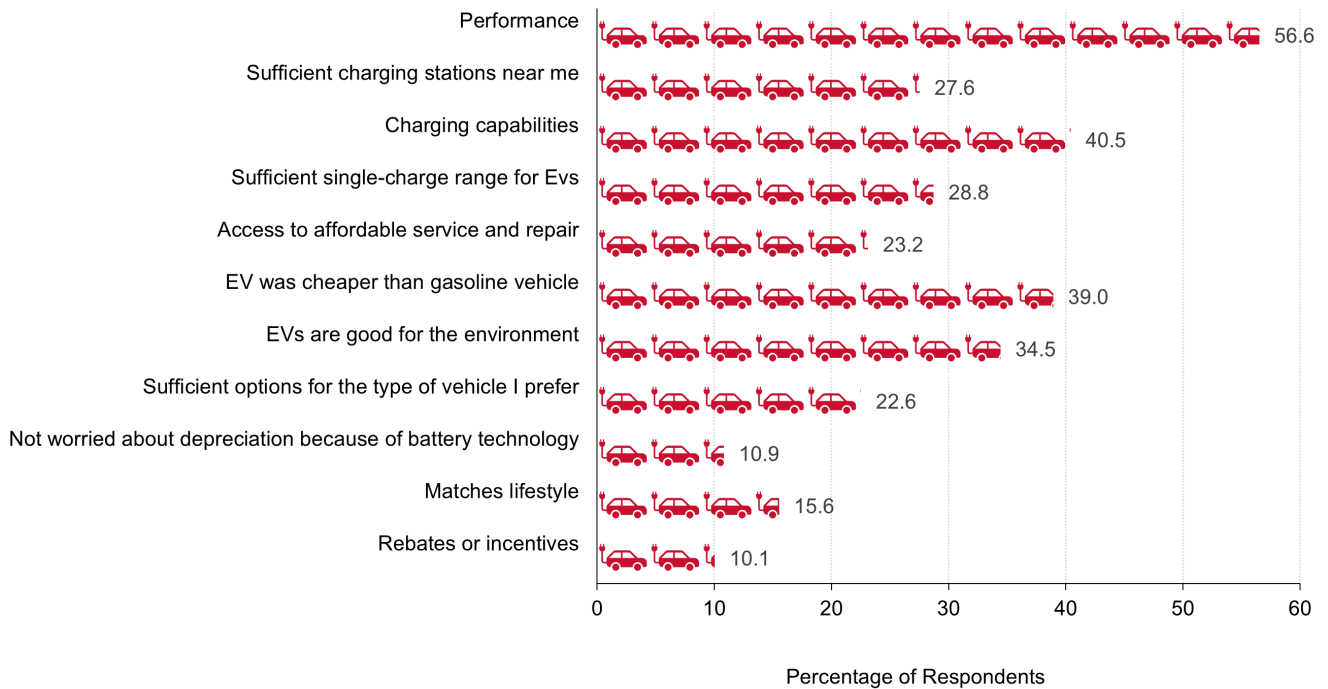
	Silent Generation	Baby Boomer	Generation X	Millennial	Generation Z
Currently lease or own an EV	0.0	0.6	1.2	10.1	9.4
Driven an EV	0.0	2.1	6.2	12.6	13.3
Been a passenger in an EV	12.4	11.9	16.4	25.9	28.8
Close friend or family member owns/drives an EV	8.0	12.7	11.6	21.3	26.4
Neighbor drives an EV	5.5	5.4	7.7	10.1	16.0
Test driven an EV	0.0	1.1	3.0	9.4	9.8
Seen an EV at my place of work in the last month	0.4	7.4	10.2	19.4	20.8
Seen an EV in my neighborhood in the last month	26.3	25.3	29.5	31.8	34.8

Note: Percentages are of those who selected the option.  
Percentages are weighted and rounded to the nearest tenth.

## Reasons for owning or leasing an electric vehicle

Among respondents who indicated they currently owned or leased an EV, Figure 1 displays attributes respondents considered when purchasing or leasing their current EV. A majority indicated that performance was the biggest consideration (56.6%). Two-fifths of respondents like the charging capabilities (40.5%) and feel that an EV was cheaper than a gasoline-powered vehicle (39%). Slightly more than a third (34.5%) of respondents considered environmental factors when purchasing or leasing their EV, believing that these types of vehicles are good for the environment.

**Figure 2:** Which of the following attributes did you consider when you purchased/leased your current EV?

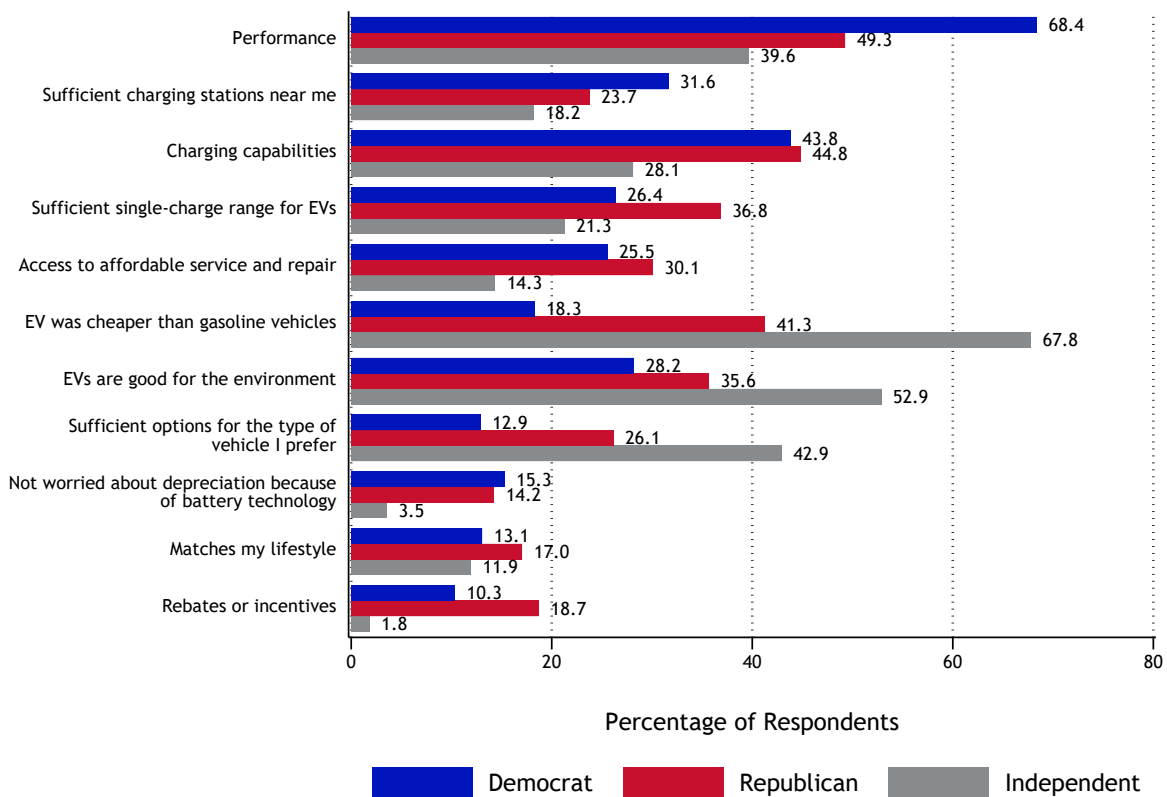




## Party identification

When we explore the attributes considered when purchasing or leasing a current electric-powered vehicle by groups, we found some variation by party identification, gender, and income groups. Figure 3 examines selected EV attributes by party identification. Overall, respondents identifying as Democrats or Republicans were more likely to say they purchased an EV because of the performance (68.4% and 49.3%, respectively) and charging capabilities (43.8% and 44.8%, respectively). Conversely, those identifying as Independents considered the cost the an EV compared to a gasoline-powered vehicle (67.8%) and the environmental impact of EVs (52.9%) when they purchased or leased their current electric vehicle.

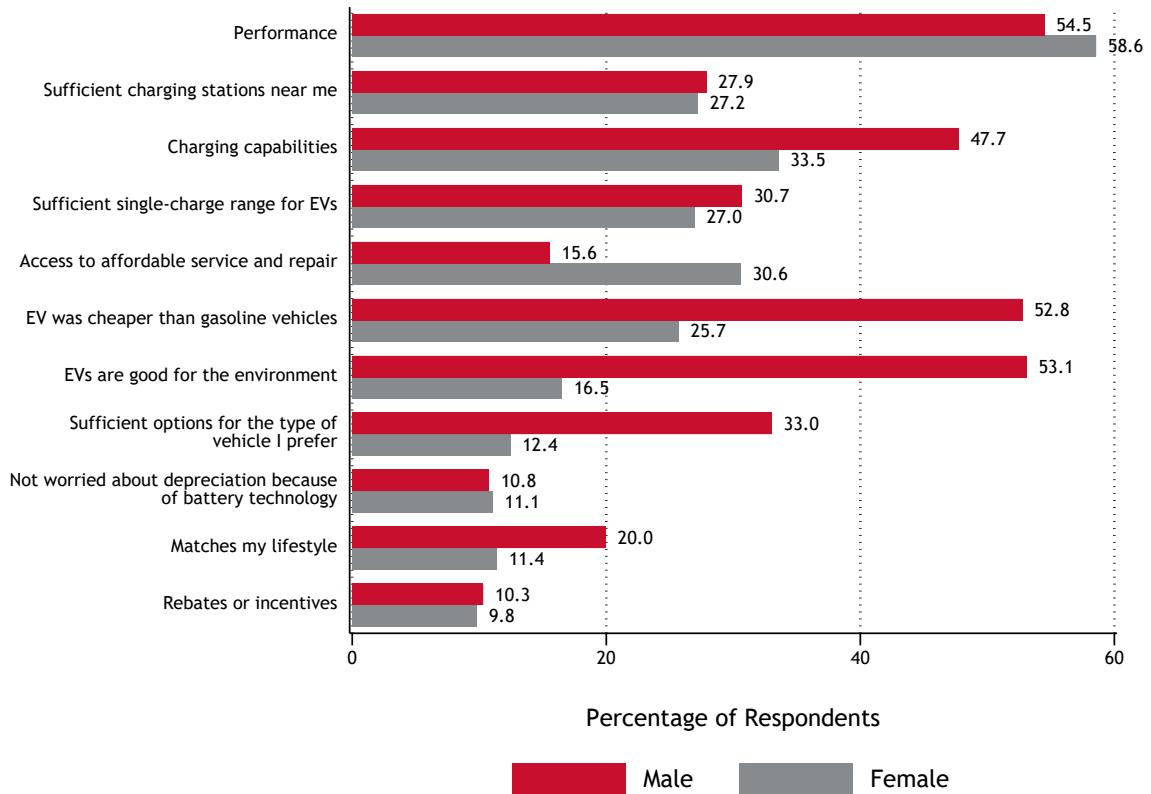
**Figure 3:** Attributes considered when purchasing/leasing an EV by party identification



## Gender and income groups

In Figures 4 and 5, we examined reasons why current EV drivers chose this type of vehicle by gender and income group. The majority EV owners/lessees who are men said they considered performance (55.8%), environmental factors (53.1%), and cost compared to gasoline-powered vehicles (52.8%). A majority of women EV drivers also selected performance as the key attribute when choosing to buy or lease their current EV (58.6%). About a third of women also selected charging capabilities (33.5%) and the make/model for the type of vehicle they prefer (33%).

**Figure 4:** Attributes considered when purchasing/leasing an EV by gender



We also find attribute variation across income groups (see Figure 5). Texans who currently own or lease an EV in the lower income group (family income of less than \$30,000) said they picked an EV because it was cheaper compared to gasoline vehicles (60.7%). On the other hand, the majority respondents in the middle and upper income groups (family income between \$30,000 and \$79,999 and \$80,000 or more) chose their EV based on performance (58% and 64.4%, respectively).

**Figure 5: Attributes considered when purchasing/leasing an EV by income**



## Likelihood of Leasing or Owning and Electric Vehicle

Respondents who did not already own or lease an EV were asked how likely they are to seriously consider leasing or purchasing an EV based on what they already know about them. Figure 6 shows that a majority of respondents (59.4%) were not too likely or not at all likely to seriously consider owning or purchasing an EV. Only 10.3% said they were very likely to consider purchasing or leasing an electric vehicle in the future, while slightly more than a fifth (22.2%) said they would be somewhat likely to consider it.

**Figure 6:** The next time you lease or purchase a vehicle, how likely are you to seriously consider leasing or purchasing an EV?

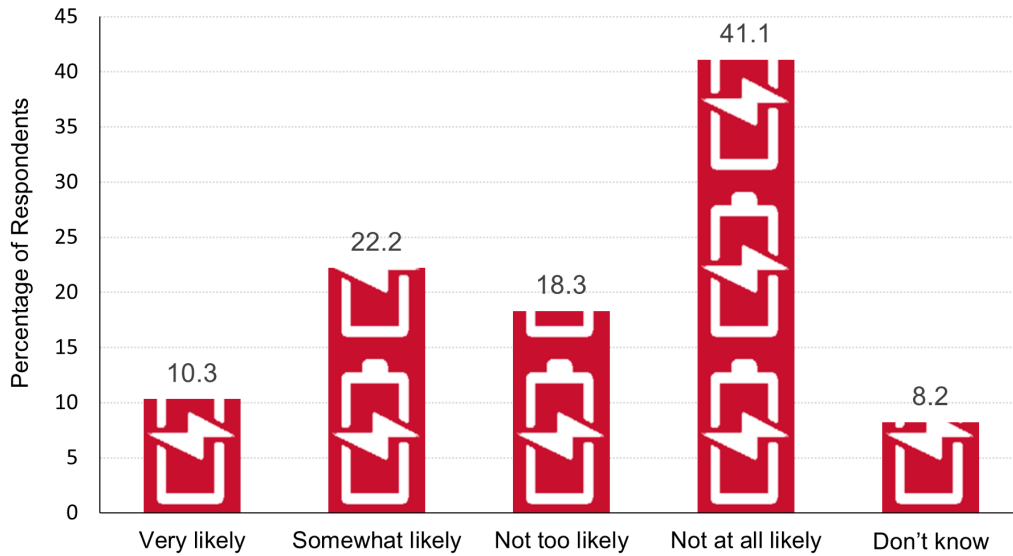
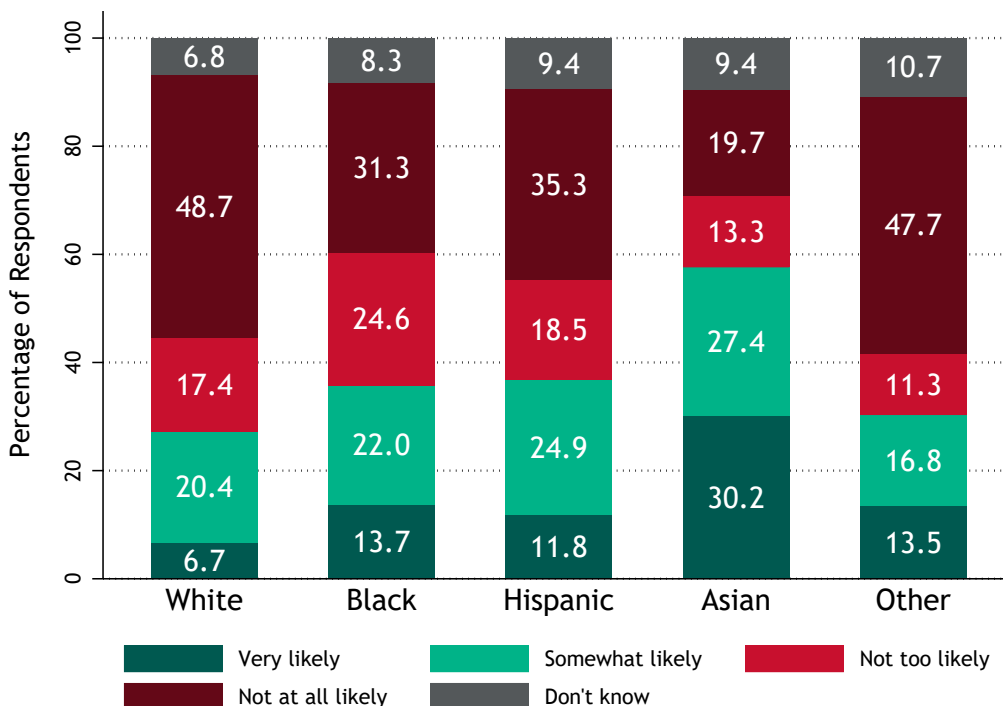


Figure 7 shows Asian respondents were more likely to consider leasing or purchasing an EV compared to white, Black, Hispanic, and Other respondents (57.6%). Conversely, white respondents (66.1%) are least likely to consider purchasing or leasing an EV in the future. Similarly, a majority of Black and Hispanic respondents said they are not at all or not too likely to consider purchasing an EV in the future, though the percentage of unlikely Black and Hispanic respondents was ten or more percentage points lower than among white respondents (55.9% and 53.8%, respectively).

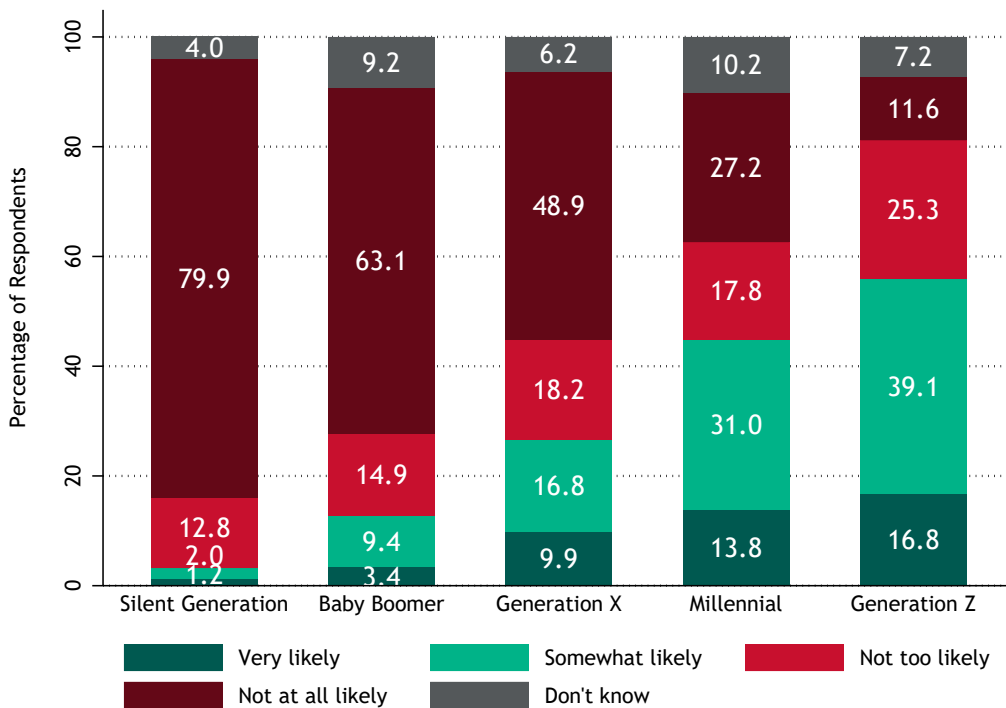
**Figure 7:** Likelihood of seriously considering leasing or purchasing an EV by race and ethnicity



## Generation cohorts

The survey shows there is a large variation among generational groups. Respondents in the younger generations, specifically Millennials and those in Gen Z, are substantially more likely to consider purchasing or leasing an EV compared to those in the Silent and Baby Boomer generations. More than half (55.9%) of Gen Z respondents were either somewhat likely or very likely to purchase an EV in the future, whereas over two-fifths (44.8%) of Millennial respondents were either somewhat or very likely to purchase an EV. By contrast, 92.7% of respondents belonging to the Silent Generation, 78% of those Baby Boomers, and 67.1% of respondents in Generation X were not too likely or not at all likely to consider purchasing or leasing an EV in the future.

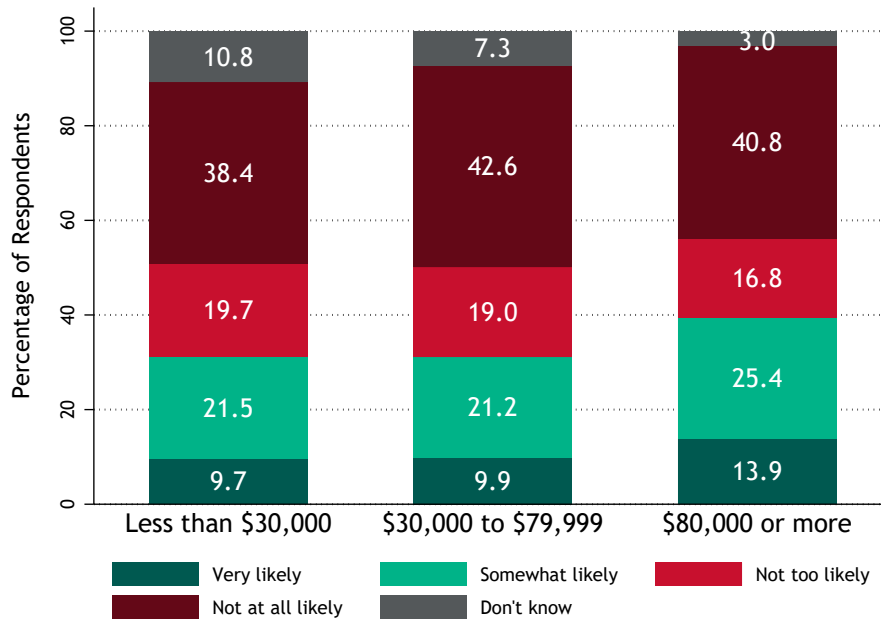
**Figure 8:** Likelihood of seriously considering leasing or purchasing an EV by generation



## Income and gender

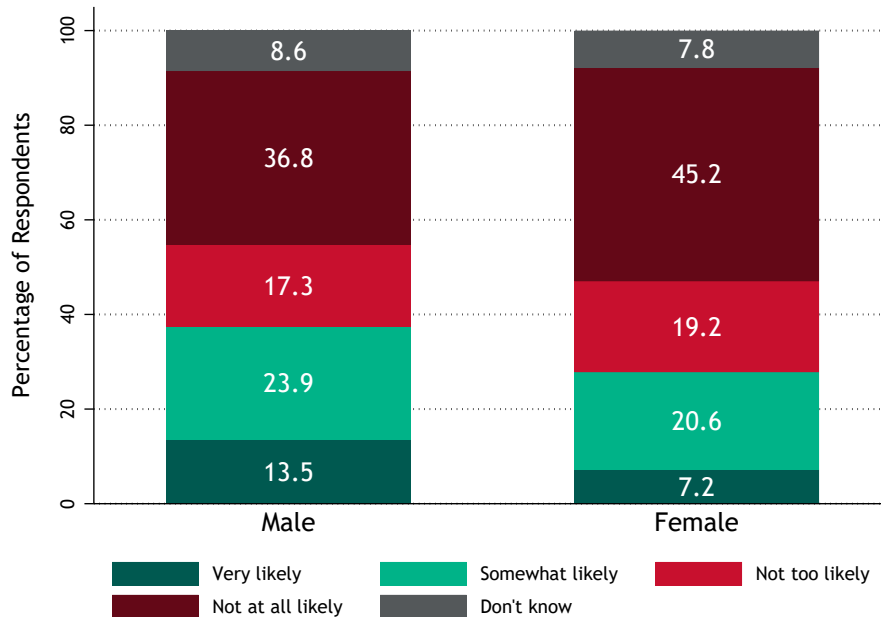
Like the differences among generational cohorts, there are differences across family income groups and by gender. Figure 9 shows similar proportions of respondents who have a yearly family income of less than \$30,000 and those in the middle-income group, with a yearly family income between \$30,000 and \$79,999, are either somewhat likely or very likely to consider purchasing an EV in the future. Slightly more than a fifth of respondents in the lower and middle-income brackets said they are somewhat likely to consider an EV purchase in the future (21.5% and 21.2%, respectively), while just under a tenth said they are very likely to purchase an electric vehicle in the future (9.7% and 9.9%). More than a third (39.3%) of respondents in the upper-income group - those with a yearly family income of \$80,000 or more- said they would be likely to consider purchasing or leasing an EV. The middle-income bracket had the highest proportion (61.6%) of respondents saying they were either not too likely or not likely at all to make that type of purchase compared to those in the upper and lower-income groups.

**Figure 9:** Likelihood of seriously considering leasing or purchasing an EV by income



Concerning gender differences, men are slightly more inclined to consider leasing or purchasing an EV compared to women. As shown in Figure 10, the proportion of male respondents (37.4%) who said they are likely to consider purchasing this type of vehicle is about ten percentage points higher than their female counterparts (27.8%). Nearly half of female respondents said they were not likely to purchase or lease an EV at all compared to slightly more than a third of male respondents.

**Figure 10:** Likelihood of seriously considering leasing or purchasing an EV by gender

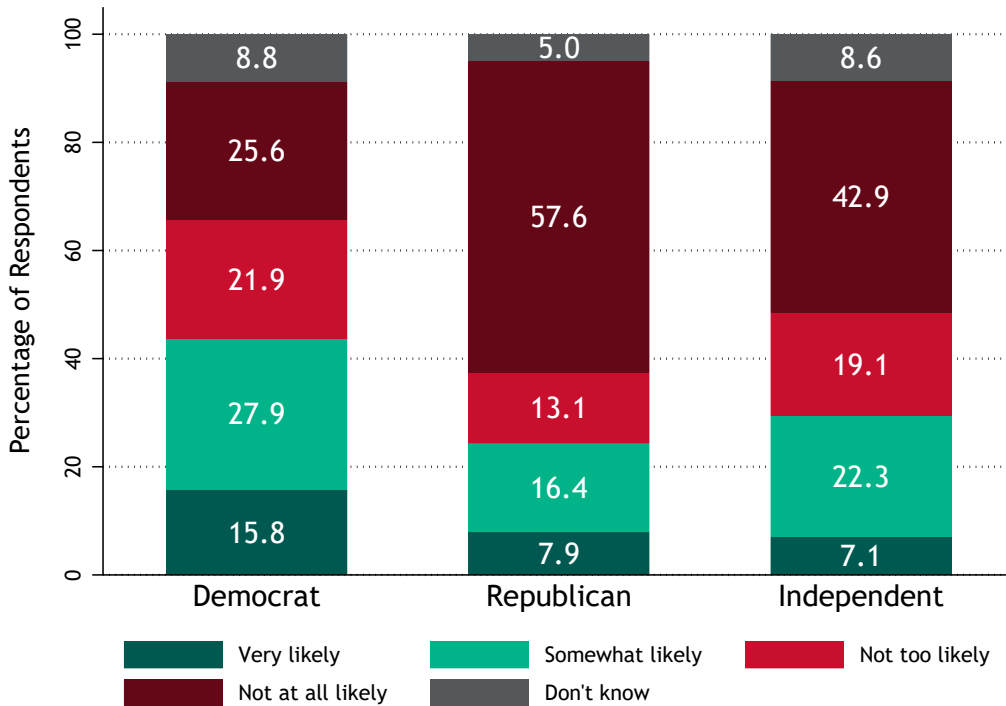




## Party identification

As shown in Figure 11, Democrats were the most likely group to consider purchasing or leasing an electric vehicle in the future (43.7%) compared to Republicans, who had the lowest proportion of respondents to either be very likely or somewhat likely to purchase one in the future (24.3%). Over half of Republican respondents (57.6%) said they were not likely at all, with an additional 13.1% saying they are not too likely to purchase an EV. Independents had similar patterns to Republicans with regard to likelihood of future EV purchasing. Sixty-two percent of Independents said they would either be not too likely or not likely at all to lease or purchase an EV in the future.

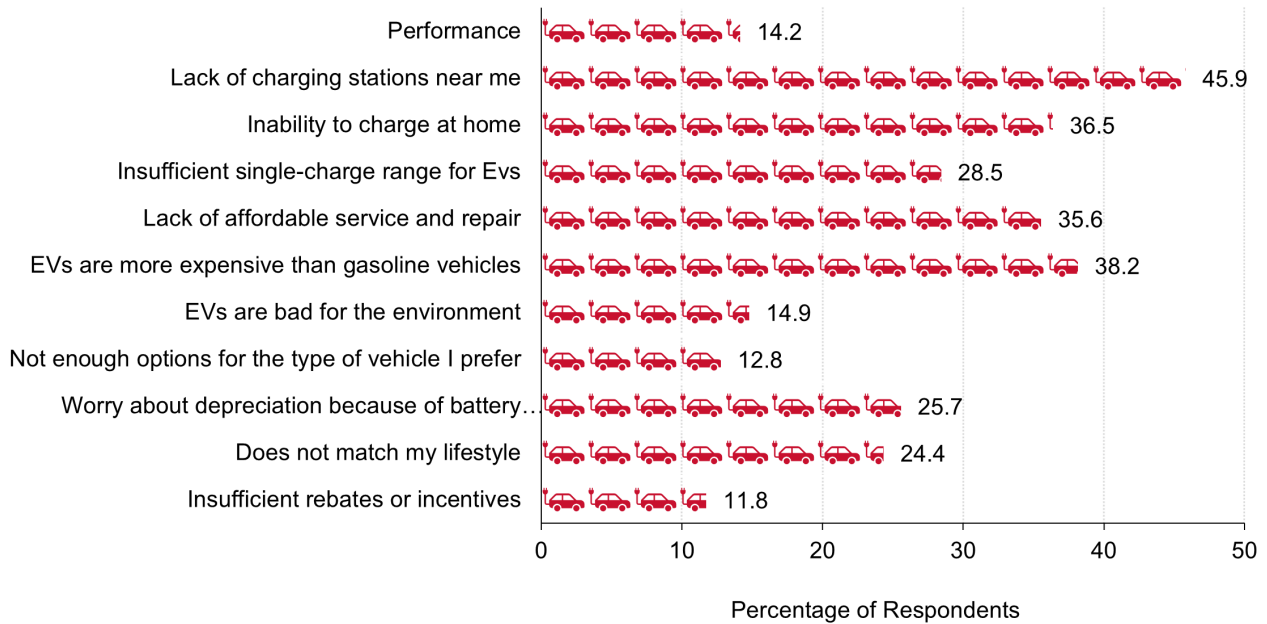
**Figure 11:** Likelihood of seriously considering leasing or purchasing an EV by party identification



## Reasons for not purchasing an electric vehicle

Figure 12 displays attributes that could deter non-EV owners from purchasing one in the future. The main attributes include: lack of charging stations nearby (45.9%), price compared to gasoline-powered vehicles (38.2%), inability to charge an EV at home (36.5%), and service and repair affordability (35.6%). About a quarter of these respondents also feel that EVs have insufficient single-charge range and depreciate faster because of changing battery technology (28.5% and 25.7%, respectively). Rebates and incentives, or lack thereof, is the attribute that concerned both current owners/lessees (10.1%, see Figure 2) and prospective owners/lessees (11.8%) the least.

**Figure 12:** Which of the following, if any, are holding you back from purchasing an electric vehicle?



## Geographic area

When we looked at responses by geographical region, we found that overall, lack of charging stations, inability to charge at home, insufficient single-charge range, lack of affordable service and repair, and cost were the largest deterrents for respondents to buy an EV regardless of where respondents live. For instance, lack of charging stations near them is cited as the top deterrent for purchasing or leasing an EV among respondents who live in cities, suburbs, towns, and rural areas across Texas. Table 3 shows the second-highest proportion of respondents who live in the city said that the inability to charge an EV at home (34.8%), while those living in the suburbs (47.9%), towns (48.3%), and rural areas (50.4%) said that the cost of EVs compared to gasoline vehicles was too high.

**Table 3:** Reasons for not purchasing an electric vehicle by geography

	City	Suburb	Town	Rural
Performance	10.9	16.0	15.1	22.6
Lack of charging stations near me	42.1	49.8	58.4	54.0
Inability to charge at home	34.8	38.4	48.4	42.1
Insufficient single-charge range for EVs	26.8	38.4	39.1	37.9
Lack of affordable service and repair	32.1	40.5	42.1	45.4
EVs are more expensive than gasoline vehicles	33.7	47.9	48.3	50.4
EVs are bad for the environment	10.8	19.4	15.6	27.8
Not enough options for the type of vehicle I prefer	11.1	10.5	12.9	17.2
Worry about depreciation because of battery technology	22.1	32.2	33.6	32.9
Does not match my lifestyle	19.8	24.4	29.9	36.6
Insufficient refunds or rebates	14.4	12.8	9.4	10.9

Note: Percentages are of those who selected the option as a reason to not purchase an EV. Percentages are weighted and rounded to the nearest tenth.

## Income

Table 4 shows variation in reasons to not purchase an EV by income group. Respondents who reported having a family income of less than \$30,000 cited lack of charging stations (39.7%) and inability to charge at home (34.8%) the most while those making between \$30,000 and \$79,999 said the inability to charge at home (42.3%) and cost (40.9%). Those in the highest income bracket said they did not want to purchase an electric vehicle because of the insufficient single-charge range (46.9%) and the cost compared to gasoline vehicles (45.4%). Neither performance, vehicle options, nor insufficient refunds or rebates seem to be contributing deterrent factors for any income group.

**Table 4:** Reasons for not purchasing an electric vehicle by income group

	Less than \$30,000	\$30,000 to \$79,999	\$80,000 or more
Performance	13.9	13.3	17.6
Lack of charging stations near me	39.7	13.3	17.6
Inability to charge at home	34.8	42.3	32.9
Insufficient single-charge range for EVs	17.9	27.7	46.9
Lack of affordable service and repair	31.2	37.0	40.4
EVs are more expensive than gasoline vehicles	30.1	40.9	45.4
EVs are bad for the environment	8.1	15.0	25.7
Not enough options for the type of vehicle I prefer	14.7	9.3	16.3
Worry about depreciation because of battery technology	20.3	24.6	36.0
Does not match my lifestyle	25.1	23.5	22.6
Insufficient refunds or rebates	12.9	11.0	12.4

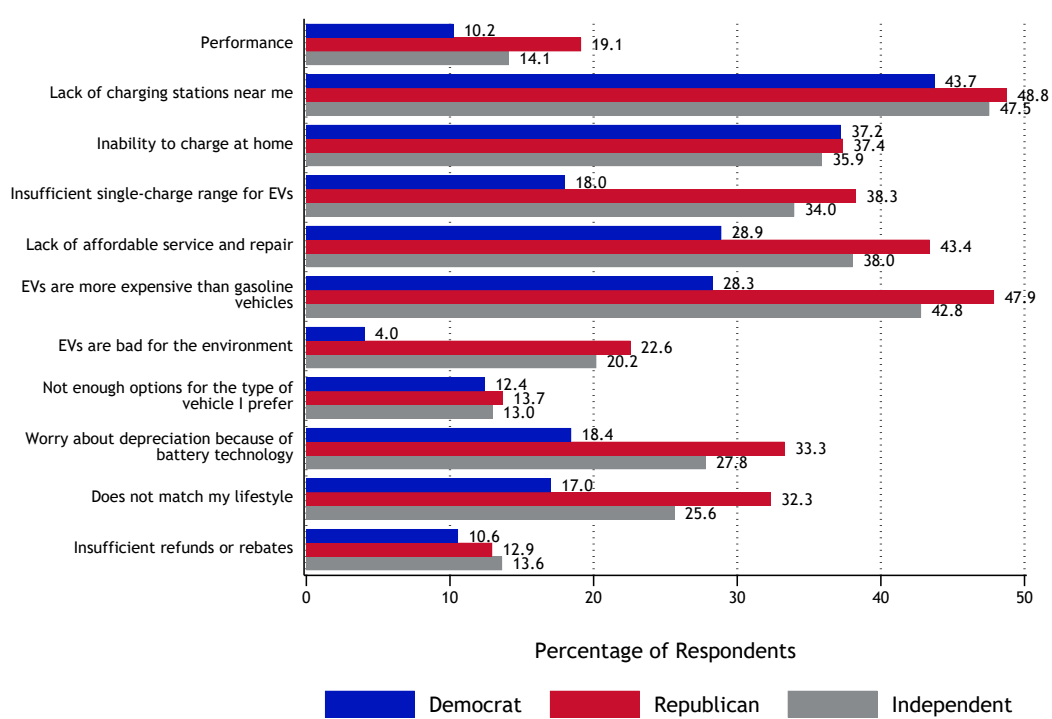
Note: Percentages are of those who selected the option as a reason to not purchase an EV.

Percentages are weighted and rounded to the nearest tenth.

## Party identification

Next, we looked at differences by party identification (Figure 13). We find that there are similar proportions of Democrats, Republicans, and Independents who said that they did not plan to purchase an EV in the future because of the inability to charge at home and lack of charging stations nearby. A higher percentage of Democrats were more likely to cite the lack of charging stations (43.7%) and the inability to charge an EV at their home (37.2%). Republicans and Independents were more likely to say lack of charging stations near them (48.8% and 47.5%, respectively) and cost compared to gasoline vehicles (47.9% and 42.8%, respectively) as the main reasons for not purchasing or leasing an EV in the future. Additionally, Republicans (22.6%) and Independents (20.2%) were five times more likely than Democrats (4.0%) to report not willing to purchase electric vehicles because they are bad for the environment. Almost one-in-three Republicans (32.3%) reported that the reason for not buying EVs is because it does not fit their lifestyle, compared to 24.5% of Independents and 17% of Democrats.

**Figure 13: Reasons for not purchasing an electric vehicle by party identification**



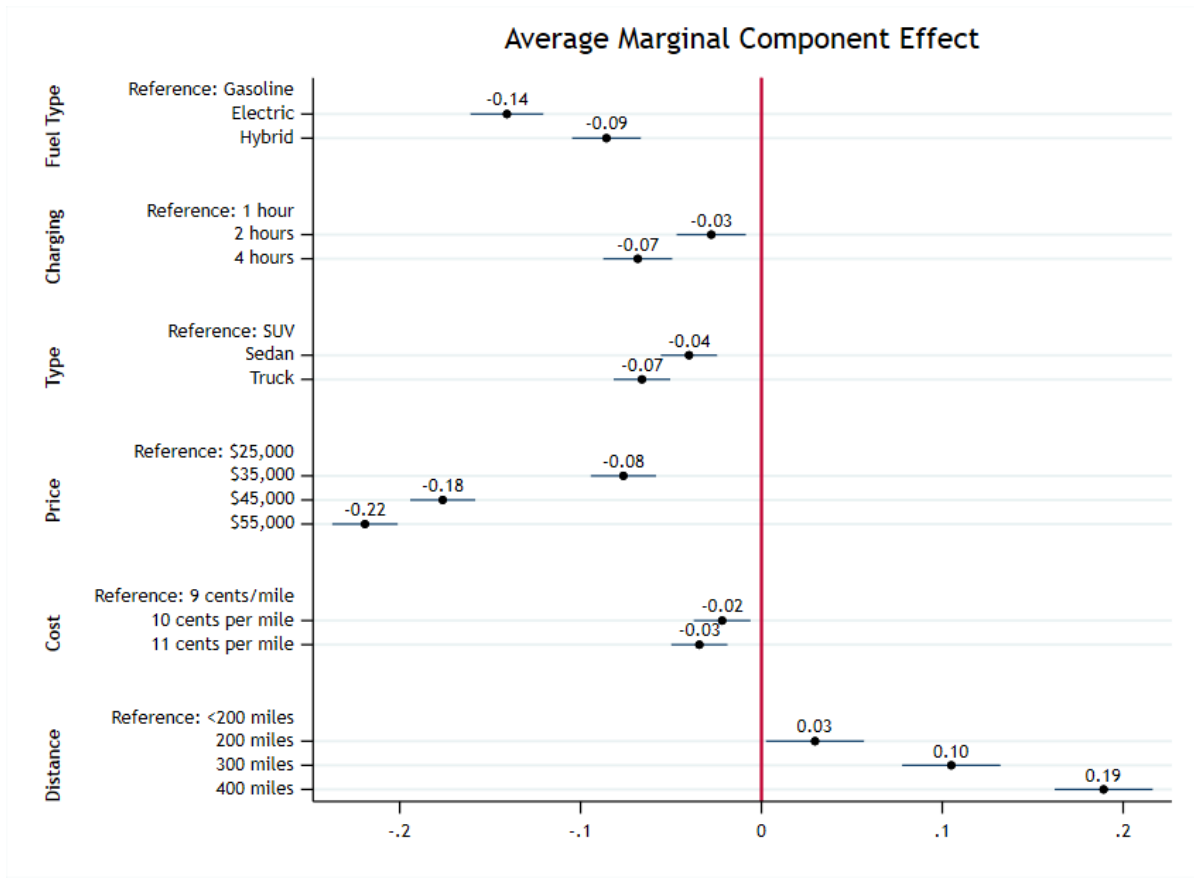
## Understanding the attributes driving EV adoption using a choice experiment

In order to further examine which factors might lead respondents to adopt an EV compared to a gasoline-powered vehicle, we conducted a conjoint experiment (or choice experiment). Respondents were given a choice of three hypothetical vehicles. We asked them to choose which of the three they would select if they were the only vehicles available for purchase. Each vehicle profile had randomly generated levels for the following attributes: **vehicle power type**, **price of vehicle**, **operating cost**, **charging time**, **distance**, and **vehicle type**.

The attributes for **vehicle power type** were *electric*, *gasoline*, and *hybrid*. The **price of vehicle** attribute started at \$25,000 and increased in price by ten thousand dollars to include \$35,000, \$45,000, and \$55,000. The attribute **operating cost** is equivalent to gas fuel efficiency and included 9¢, 10¢, and 11¢. For electric- and hybrid-powered vehicles, the **charging time** attribute options offered 1 hour, 2 hours, and 4 hours; this option was set to zero for vehicles powered by gasoline engines. **Distance** is based on how far the vehicle can be driven on a full tank of gas or full charge and had the following levels: *less than 200 miles (for electric vehicles only)*, 200 miles, 300 miles, and 400 miles. Finally, attribute **vehicle type** included *sedan*, *truck*, and *SUV*.

Figure 14 reproduces the estimates of the statistical model of the impact of each attribute level on the probability of choosing a vehicle profile. For each attribute, we keep one level as a reference and assess whether other levels of the attribute make the choice of the vehicle more or less likely. The estimates then can be interpreted as the probability of choosing the vehicle with the reported level in comparison to the baseline level for the corresponding attribute. For example, for the attribute labeled “Fuel type” in the figure, corresponding to the vehicle power source, the reported estimates and confidence intervals show that respondents were less

**Figure 14: Choice Experiment: Determinants of vehicle choice**



likely to choose hybrid and electric vehicles than gas-powered vehicles.

According to the results, respondents were 14 percentage points less likely to choose an electric vehicle than a gasoline-powered vehicle. Respondents preferred SUVs to sedans by 4 percentage points, and SUVs to trucks by 7 percentage points. The results from the choice experiment also reflect respondents answers to direct questions about reasons for owning or leasing vehicles discussed in previous sections: higher vehicle price, operating costs (i.e., price per mile driven), and charging time make respondents less likely to choose a vehicle profile; the ability to drive longer distances on a single charge, by contrast, increases the likelihood of choosing a vehicle profile.

In particular, an increase in price of \$10,000 (from the baseline of \$25,000 to \$35,000) reduces the probability of choosing the vehicle profile by 8 percentage points; increases in price to \$45,000 and \$55,000 further lowers the probability of choosing the vehicle 18 and 22 percentage points respectively. Increasing operating costs to 10 and 11 cents per mile lowers the vehicle selection by two and three percentage points, respectively. Respondents were sensitive to charging times, with the likelihood of vehicle selection decreasing by 3 and 7 percentage points, respectively, for the second and third hour of wait time. Lastly, vehicle driving range significantly impact respondents' choices: being able to drive 200, 300, or 400 miles in a single charge or a full tank increased the probability of choosing a vehicle profile by 3, 10, and 19 percent, respectively.

Table 5 presents three examples of simulated vehicle profiles and the predicted probability of respondents choosing each of the three profiles. Our intent with these examples is to illustrate the implicit trade-offs that

respondents entertain when choosing vehicles based on these attributes. As shown in the table, the predicted probability of preferring an SUV with a gasoline engine, priced at \$35,000, with low operating costs (9¢/mile) and a driving range of 300 miles (Vehicle (1)) is 53.2%. This is much higher than the probability (39.2%) of choosing a similarly priced electric vehicle (described in column 2), with an identical range, the same operating cost, and a charge time of one hour. Respondents are much less likely (33.8%) to choose a higher-priced electric SUV with a longer driving range (profile (3)) than the gasoline-powered vehicle described in profile (1), which implies that holding other attributes constant, prices of electric vehicles would need to fall considerably for respondents to choose them over gasoline-powered vehicles.

**Table 5:** Predicted probability of choosing a vehicle

Hypothetical profile	(1)	(2)	(3)
Fuel type	Gas	Electric	Electric
Charge time	None	One hour	One hour
Vehicle	SUV	SUV	SUV
Price	\$35,000	\$35,000	\$45,000
Operating cost	9¢/mile	9¢/mile	9¢/mile
Range	300 miles	300 miles	400 miles
P(choice)	53.2%	39.2%	33.3%



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# Conclusion

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Though steps have been made to incentivize the transition from using gasoline-powered vehicles and transitioning to those using electric-power across the US, most recently with President Biden's Inflation Reduction Act of 2022 (IRA), few Texans have made the transition to owning or leasing an electric-powered vehicle (EV). Wave 3 of the Texas Trends Survey found only about 5% of Texans currently own or lease an EV. Of those who reported currently own or lease an EV, ownership was higher among younger generations (Millennials and those in Gen Z) and higher among Asian and Black respondents. However, when we look to future ownership, particularly among those who do not currently own or lease an EV, more than half of respondents were not likely to consider purchasing this type of vehicle.

Like the previous 2021 survey,<sup>7</sup> the lack of charging stations and cost compared to gasoline-powered vehicles remain the top reasons respondents cited for reasons they would not purchase/lease an EV in the future. Additionally, over a third of respondents reported the lack of ability to charge and EV at home contributed to their decision to not purchase an EV. Those who live in smaller towns or rural areas of Texas particularly conveyed that they did not want an EV because finding charging stations close enough is an issue, while those who live in the city or suburbs said that in addition to charging station availability, the cost was too high.

We find predictable partisan divides between Democrats, Republicans, and Independents when it comes to performance and reasons for not purchasing an EV, battery capabilities, and whether EVs are good for the environment. By contrast, there are no partisan differences when it comes to charging convenience and insufficient refunds and rebates. Since the Inflation Reduction Act addresses both charging convenience and refunds/rebates, it is interesting to note that Democrats, Republicans, and Independents see charging convenience as a reason for not purchasing at similarly high rates and refunds at similarly low rates.

Interestingly, we find that lower prices, operating cost, and decreased charging times are not enough incentive for respondents to choose an electric- or hybrid-powered vehicle over a gasoline-powered vehicle. But, the scales can be tipped toward EVs if the attributes of the vehicle include lower price tags, lower operating costs, and longer driving distances on a single-charge compared to a full tank of gas.

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<sup>7</sup>Ibid. fn. 1

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