



Demographic Analysis of LMI Focus Groups

Supplemental Report to Analysis of LMI CVRP Participation

May 2022



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Executive Summary

This report serves as a supplement to the Center for Sustainable Energy's (CSE) *Analysis of LMI CVRP Participation*, in which CSE evaluated the representation and perspectives of low to moderate-income (LMI) individuals within CVRP (Clean Vehicle Rebate Project).¹ CSE conducted focus groups of LMI individuals to understand (1) LMI barriers to adopting electric vehicles (EVs) and (2) how adapting marketing efforts may better serve the LMI population.² The main conclusions from prior analysis within an *Analysis of LMI CVRP Participation* are summarized in the following:

- **Costs and charging are predominant barriers across LMI demographics.** Participants' top two barriers are on par with each other: costs (e.g., EVs, charging, maintenance) and charging (e.g., lack of charging infrastructure, length of time needed to charge). Range, lack of information and issues with dealerships are less influential.³
- **Charging concerns are more influential among those with college educations.** Individuals with less education have more concerns about costs.⁴
- **Dwellers of attached houses or townhomes are most concerned about charging issues.** People who live in detached houses are most concerned about costs.⁵
- **LMI participants seek online sources and experiential learning.** Participants prefer to learn about vehicles from online reviews and dealers. Participants also value experiential learning in which individuals can test EVs within a non-pressured environment.⁶

This report builds upon these conclusions and provides an analysis of barriers and preferred information sources by additional demographics: ethnicity, race, age, household size, gender, education and residence type. We focused on demographics underrepresented in CVRP when compared to the general LMI population of licensed drivers: those who identify their ethnicity as Hispanic, Latino, Latina and Latinx; those who are Black or African American, those who are White, those who are 21-39 in age and those who are women. Our analysis concluded the following.

Cost and charging vary as primary concerns among underrepresented LMI groups, but both are important across groups.

- Costs are more prevalent concerns among individuals of Hispanic, Latino, Latina and Latinx ethnicity, while those not of this ethnicity are more concerned about charging issues.

¹ Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). *Analysis of LMI CVRP Participation*.

² LMI individuals within the focus groups were those with incomes at or below the 400% Federal Poverty Level, the threshold for the Increased Rebate as of January 27, 2021. Six groups of 5-6 people each were held in March and April 2021.

³ Costs were 27% of mentions of barriers; charging, 25%. Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). *Analysis of LMI CVRP Participation*.

⁴ Charging accounted for 32% of college graduates' mentions of barriers. Costs accounted for 35% of barriers mentioned by those with less than a college degree. Ibid.

⁵ Charging is 35% of attached home dwellers' mentions of barriers. Costs are 36% of mentions of barriers of those in detached homes. Ibid.

⁶ Online sources were 34% of mentions of information preferences; experience (e.g., test drives, seeing EVs on display, informational events), 17%. Ibid.

Specifically, Hispanic, Latino, Latina and Latinx individuals are concerned about the costs of EVs and the costs of charging.⁷

- Charging issues are the predominant barriers among Black or African American and White individuals. Black or African Americans were also less concerned about costs than White individuals.⁸
- Ages up to 39 are most concerned about costs. Within ages 30-39, cost concerns are on par with charging concerns.⁹
- Cost concerns are most prevalent among men and women. Women tend to have a higher concern about range than men.

All underrepresented LMI groups prefer online outreach but also value in-person educational opportunities. Whether online or in-person, participants prefer impartial, unbiased sources.

- Participants preferred online sources (e.g., detailed online reviews by consumers, online dealer information, YouTubers comparing various models) to other traditional outreach methods.
- Experiential learning such as test drives and informational events where people can experience EVs first-hand are highly valued; participants expressed events would demystify EVs and provide more comfort for individuals to consider EVs.
- Personal testimony, whether from personal contacts or online reviewers, is also important to this group. Participants spoke of the value they find in talking with trusted mechanics and engaging in consumer reviews online.

We also focused on participants from San Joaquin because CARB expanded the CVRP Rebate Now into eight counties in the San Joaquin Valley in April 2021. We sought to understand LMI perceptions about EVs at the commencement of this expansion. Among barriers mentioned, charging concerns were most prevalent for San Joaquin participants at 42% of mentions. The group discussed the lack of charging stations, their inconvenient and infrequent locations, and at-home charging issues. Cost concerns were 29% of mentions and revolved around the cost of EVs and costs of charging. San Joaquin participants were also more inclined to prefer online resources at 44% of mentions. Like most participants interested in online resources, San Joaquin participants like to access reviews comparing details and features of models. The group also expressed interest in experiential learning like test drive events where they could get a better feel for EVs.

Finally, this report highlights ideas for programs from focus group participants directly. Reading the direct quotes of those CVRP is working to serve illustrates how people perceive and interact with various types of policies. Asking focus group individuals for ideas about how to make EVs more appealing was a constructive way for participants to define their problems. For example, some individuals proposed solutions for reducing down payments because that is their main barrier. Some individuals were interested in ways to stabilize electricity rates so that charging costs would be more predictable. Ideas revolved around cost and charging concerns and served as a means of inspiration for program design.

⁷ Costs comprised 38% the barriers mentioned by Hispanic, Latino, Latina and Latinx individuals.

⁸ Charging issues accounted for 33% of mentions of barriers among Black or African American individuals. Charging issues also accounted for 33% among White individuals.

⁹ Among the 30-39 age group, cost concerns were 31% of the mentions of barriers and charging was 28%. Among individuals aged up to 29, cost concerns were 26%.

We recommend that marketing strategies be evaluated for underrepresented demographics, focusing on the key barriers. Talking points tailored to each demographic's most mentioned barriers may more directly address their concerns. We also suggest reaching demographic populations with methods and information sources they prefer, especially impartial online reviews and experiential learning like informational events and test drives.

In summary, LMI individuals expressed practical concerns regarding the costs of EVs and charging, lack of charging stations and time to charge. Participants identified preferred methods of reaching them; online sources are largely preferred and accessible. LMI individuals are seeking impartial, detailed information in easily accessible ways. Their interest in experiential learning indicates excitement and willingness to learn about EVs. With these insights in mind, we recommend evaluating marketing efforts; enhancing methods that address LMI concerns directly within preferred communication channels may aid in efforts to increase equity within CVRP.

Barriers and Preferred Information Sources by Demographic

County

We required participants within the focus groups to be residents of 11 counties within California to gain representation from California's geographies that differ in density, income and DAC status. We also held a special focus on San Joaquin because CARB expanded the CVRP Rebate Now into eight counties in the San Joaquin Valley in April 2021 with a focus on LMI participants and wanted to understand the resident's barriers and preferences at the beginning of this program.

As an entire group, the 31 participants spread across 11 counties provided a sampling of LMI Californian's opinions. Because some counties were represented by 1 to 2 people,¹⁰ we cannot generalize about perspectives for every county. However, we counted the frequency of mentions per barrier and preferred information source to demonstrate trends for counties with more participants, including San Joaquin with 6 participants.

Barriers by County

Among most counties, concerns about barriers largely followed trends established among the entire participant group: costs concerns were closely followed by charging concerns.¹¹ See Table 1 for a breakdown of barriers experienced by participants of various counties in California. Charging concerns were most prevalent in some counties, including San Joaquin.

The following quotes are from residents of San Joaquin regarding charging and cost concerns. San Joaquin residents voiced frustrations about the impracticality of charging at residences that do not accommodate chargers and skepticism regarding charging station availability and benefit. Cost concerns revolved around the cost of EVs and charging and dealership knowledge of rebate programs.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 34; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"...and you have Charge Point, in your app, that you can check where certain charging stations are, but you never know - for instance, I've gotten somewhere, and you have a truck parked where you're supposed to be charging. And it's like [there should be] penalties for people parking where they're not supposed to be parking when you need to charge."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 54; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina, or Latinx; Race: White; County: San Joaquin; Education: College graduate; Residence: An apartment or condo

"I live in an apartment, so it's how would you charge an electric car in an apartment complex ... my big thing would be, you know, how do you handle it when you don't live in a house where you can easily charge a car?"

¹⁰ For participant count per county, see Appendix A in Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). Analysis of LMI CVRP Participation.

¹¹ Ibid.

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 56; Language: English; Household: 2; Ethnicity: Hispanic, Latino, Latina, or Latinx; Race: Bi-Racial or Multi-Racial; County: San Joaquin; Education: Some college/2-year college/technical school/associate degree; Residence: An attached house, a townhome, or similar

“... in addition to the distance, my kids and my grandkids and their families all live in Reno, which means now you're pulling two percent grades, and that's going to draw down more on your electric usage on your vehicle. And I question even the charging stations, like Walmart up here in Trinity and here in Stockton. ... They put charging stations in, and right next to the charging stations is a big diesel-powered generator that powers the charging station. Kind of counterproductive, they have a diesel-powered generator, which probably puts out more emissions than the car does. So- well, maybe not. But by today's standards. You know, older junkers, maybe, but newer emissions and all the control stuff going on, it's weird to see this big diesel generator out there.”

“...you have to have the appropriate place to charge [an electric vehicle]. Thankfully, I do, but, you know, it costs money to wire all that electricity to a particular place next to your parking spot, and then is it secure, that's always a concern, and then when you're traveling somewhere, are they going to have [charging stations]?”

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 45; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

When referring to rebates, the individual said, *“...but otherwise I wouldn't be able to do it. So the key is, the programs are definitely an incentive, so I made sure I maximized and used all three programs at the same time. So it was great.”*

When referring to dealerships, the individual said, *“Well, I mean, they [dealerships] knew about the big ones like the state and the federal, I think. But just general, they didn't really- And they had some paperwork. But they didn't know about the Drive Clean of San Joaquin.”*

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 41; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina, or Latinx; Race: White; County: San Joaquin; Education: College graduate; Residence: An attached house, a townhome, or similar

“... it's hard, because they [utilities], you know, decide their rates, and so you don't have that option, like, with a lot of the programs that PG&E offers. The city of Lodi is expensive, and we never get any breaks. ... So that's one of the- that's one of the reasons I really hesitated on that [buying an electric vehicle], because of the fact that we already pay high rates now, and adding to that just, you know, didn't seem feasible, but now, like, the rebates are very, like we said, are very appealing ... And, you know, a lot of the research I done- have done, too, it doesn't take as much electricity as you think it does, and dealing with my mom and her- their Tesla, you think it's

going to be this huge difference in your [electric] bill and stuff, and it's- a lot of people that I know that have them, it really hasn't been that big. And, of course, it could vary per person, who knows, and when you use it and when you don't, but- yeah, Lodi's tough, real tough..."

Table 1. Frequency of mentions of barriers by county.

Categories	Alameda (n=14)	Fresno (n=33)	Imperial (n=30)	Los Angeles (n=13)	Riverside (n=36)	Sacramento (n=8)	San Bernardino (n=11)	San Diego (n=36)	San Joaquin (n=38)	San Jose (n=18)	Shasta (n=47)
Costs (e.g., EVs, charging, maintenance)	21% (n=3)	27% (n=9)	23% (n=7)	23% (n=3)	44% (n=16)	25% (n=2)	27% (n=3)	36% (n=13)	29% (n=11)	28% (n=5)	32% (n=15)
Charging (e.g., lack of charging stations, charging time too short)	50% (n=7)	33% (n=11)	27% (n=8)	23% (n=3)	11% (n=4)	50% (n=4)	18% (n=2)	31% (n=11)	42% (n=16)	28% (n=5)	21% (n=10)
Range (e.g., fear of being stranded, short range)	0% (n=0)	27% (n=9)	13% (n=4)	8% (n=1)	14% (n=5)	0% (n=0)	9% (n=1)	6% (n=2)	11% (n=4)	6% (n=1)	11% (n=5)
All Other Barriers (e.g., issues at dealerships, concerns about batteries and maintenance, unfamiliarity with EVs, safety concerns)	29% (n=4)	12% (n=4)	37% (n=11)	46% (n=6)	31% (n=11)	25% (n=2)	45% (n=5)	28% (n=10)	18% (n=7)	39% (n=7)	36% (n=17)

Preferred Sources by County

Similarly, we asked participants what resources they prefer to learn about vehicles. Most counties were in line with previous findings that they preferred to search online or interact with online dealers. See Table 1.

The following are quotes from San Joaquin residents. Participants were most interested in using online resources, mainly to compare details and features of models. They also were interested in seeking reviewers' perspectives online, i.e., neutral parties with experience in vehicles and mechanics. The group also discussed the need to experience vehicles and discussed events in which they could get a better feel for vehicles in person without pressure.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 48; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"I always start online. ...car dealers kind of creeped me out ... you go and they keep you in there for six years and all these other issues so it's a lot easier to compare cars online and I've gotten my last three cars from CarMax and it's just easier, just to do everything online. You can get the mileage you can get the car facts, you can get everything from online and there's no haggling or any of that..."

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 45; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"I will do ... the YouTube videos because there are experts out there that actually get the cars, I don't know how they get all these cars, maybe they make a deal with the dealership, but they test drive it, they have video cameras in the car telling you what they think about it, what their thought is, how's it compared to other cars, if you're looking for a hybrid, they compare it to other hybrids, or plug in hybrids, and vice versa."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 41; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina, or Latinx; Race: White; County: San Joaquin; Education: College graduate; Residence: An attached house, a townhome, or similar

When referring to the opportunity to test drive EVs in a non-pressured environment, the individual said, she would like *"... to get an idea of just what the car looks like inside and how it feels."*

When speaking about her recent research to purchase a PHEV or EV, the individual said, *"...the dealer that I feel the most comfortable with and go to in Elk Grove doesn't offer the incentive. Which is kind of a bummer to me, because they said they don't always have to. And he explained this whole thing where the money comes later to them."*

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 34; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"... I was thinking about Uber and Lyft. I don't really take Uber and Lyft. But I can imagine that if it was a newer car and, you know, it was in conjunction with a dealership or whatever and promoting. I mean, you're in the car. You're like, this is a nice car. Because sometimes, you know, it's happened where I'm like, this is nice. But you don't really- It's not an everyday thing where you go into a dealership, or it's not very comfortable. But Uber and Lyft it's kind of like you're exposed to something you weren't exposed to before."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 54; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina, or Latinx; Race: White; County: San Joaquin; Education: College graduate; Residence: An apartment or condo

"... if you did something like that [a test drive event] at the state level, I would think it would be much easier to have multiple manufacturers in the same place as opposed to a dealer who only focuses on their brand. ...it would be much easier to compare across brands in something like that where there's multiple dealers or multiple manufacturers in the same place... if somebody's looking at an electric car, I would think they would mainly be looking at electric cars. So they'd want an easy way to compare the different kinds of cars without having to do all the research here for one and all the research here for another if there was an easier way to compare them against each other."

Table 2. Frequency of mentions of information preferences by county.

Categories	Alameda (n=6)	Fresno (n=8)	Imperial (n=11)	Los Angeles (n=7)	Riverside (n=13)	Sacramento (n=7)	San Bernardino (n=6)	San Diego (n=12)	San Joaquin (n=18)	San Jose (n=6)	Shasta (n=14)
Online (e.g., doing online research, YouTube videos, reviews of vehicles, online dealers)	50% (n=3)	25% (n=2)	18% (n=2)	29% (n=2)	15% (n=2)	29% (n=2)	50% (n=3)	50% (n=6)	44% (n=8)	33% (n=2)	50% (n=7)
Experience (e.g., test drives in non-pressured environments, seeing EVs on display, informational events)	0% (n=0)	38% (n=3)	9% (n=1)	14% (n=1)	31% (n=4)	0% (n=0)	33% (n=2)	17% (n=2)	28% (n=5)	17% (n=1)	0% (n=0)
Personal Contacts (e.g., talking to people and mechanics the customer already knows)	50% (n=3)	13% (n=1)	9% (n=1)	29% (n=2)	8% (n=1)	0% (n=0)	0% (n=0)	8% (n=1)	6% (n=1)	0% (n=0)	21% (n=3)
Dealer (e.g., test drives at dealerships and talking with dealer)	0% (n=0)	13% (n=1)	0% (n=0)	14% (n=1)	15% (n=2)	0% (n=0)	0% (n=0)	25% (n=3)	11% (n=2)	17% (n=1)	14% (n=2)
Other Marketing (e.g., social media, TV, print, apps, phone)	0% (n=0)	13% (n=1)	64% (n=7)	14% (n=1)	31% (n=4)	71% (n=5)	17% (n=1)	0% (n=0)	11% (n=2)	33% (n=2)	14% (n=2)

Ethnicity

CSE identified in previous research that LMI individuals who identify as Hispanic and Latino are underrepresented within the CVRP.¹² Approximately half of the focus group participants identified as Hispanic, Latino, Latina or Latinx; thus, the following sections provide insight into why these individuals are less likely to engage with the CVRP.

Barriers by Ethnicity

We analyzed the frequency of mentions of barriers by participants of different ethnicities. See Figure 1 and Table 3. Concerns about costs were more prevalent among those who identified as Hispanic, Latino, Latina or Latinx; those who don't identify as these ethnicities were more likely to mention charging as a concern.

Because cost was of the highest concern for Hispanic, Latino, Latina, and Latinx individuals, we analyzed what aspects of costs may be of concern. See Table 4 for the frequency of mentions of costs within those of Hispanic, Latino, Latina and Latinx ethnicity. Nearly half the mentions are about the costs of EVs, and the cost of electricity follows closely.

CSE funded a focus group in 2016 that included African American and Hispanic individuals in California with household incomes of \$55,000 or less.¹³ Among these 2016 groups, cost and charging were the top concerns like they are now; however, other concerns among Hispanic individuals arose: the concern that EVs are too small for families and skepticism regarding rebate programs. None of these concerns were discussed during the 2021 focus groups.

The following are quotes from those of Hispanic, Latino, Latina, and Latinx ethnicity regarding costs. The participants discussed ways EVs and electricity costs could be discounted to incentivize the use of electric vehicles. Some individuals assumed costs would be higher using electricity instead of fuel, and they were also concerned about the volatility of electricity rates within their utilities. Costs about maintenance and general unfamiliarity with the technology were also discussed.

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 41; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“Well, I don't know how much difference it makes to charge an electric car, but it'd be nice if they put in a special plug for the car or have it be free for the car. Otherwise, at least giving you a good discount when you're going to pay your electric bill or something like that.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 52; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

¹² Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). Analysis of LMI CVRP Participation.

¹³ Carol H. Williams. 2016. Electric Vehicles: Multi-cultural Assessment. Three 90-minute focus groups were held in October 2016 in Fremont, Fresno and Long Beach. Participants were ages 25-44 years old and African American or Hispanic with household incomes of \$40-\$50,000 for families of 2 or less and \$40-\$55,000 for families of 3 or more. Those interviewed intended to purchase or lease a new or used vehicle in the next 24 months. Half of the participants were male, and half were female.

“Or maybe someone should do an analysis comparing what we spend on gas to what we would spend on electricity. Which one would be better? Would we spend less on gas or on electricity?”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 39; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“For me, it [driving electric vehicles] wouldn't be something I'd be interested in even though they offered those incentives. I feel like, for me in particular, I drive a lot. I my car new, and then, I put miles on it quickly. I don't know what the electric car will be like. I don't know if they need an oil change or what a regular car uses to maintain them. I don't know if the cost would be for me. I don't know if it would help me.”

“I think for me, it would just be the cost and the maintenance, as I said at the beginning, that would prevent me from buying it. I don't know. I'm not very convinced by technology, even though I know that that's where we're going. I understand that they're trying to help low-income people to buy those cars and find ways to save them money, but it just seems to me that it's a little bit more complicated because of being low-income.”

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 56; Language: English; Household: 2; Ethnicity: Hispanic, Latino, Latina, or Latinx; Race: Bi-Racial or Multi-Racial; County: San Joaquin; Education: Some college/2-year college/technical school/associate degree; Residence: An attached house, a townhome, or similar

“They're going to have to really make the cost of charging that almost nonexistent. I mean, if I didn't get charged to use electricity to do it, I'd really consider an electric vehicle, assuming we had the range and the capacity, and, you know, stuff like that. But I think that the cost of charging is going to be cost-prohibitive.”

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 32; Language: English; Household: 4; Ethnicity: Hispanic, Latino, Latina, or Latinx; Race: Other Race; County: Shasta; Education: Some college/2-year college/technical school/associate degree; Residence: An attached house, a townhome, or similar

“If anything should happen to my car, is it something that I could do by myself practically with a little bit of research, or do I have to pay- I take it into a mechanic that specializes in that? And if so, are they going to charge me an arm and a leg like Apple does?”

Figure 1. Frequency of mentions of barriers by ethnicity.

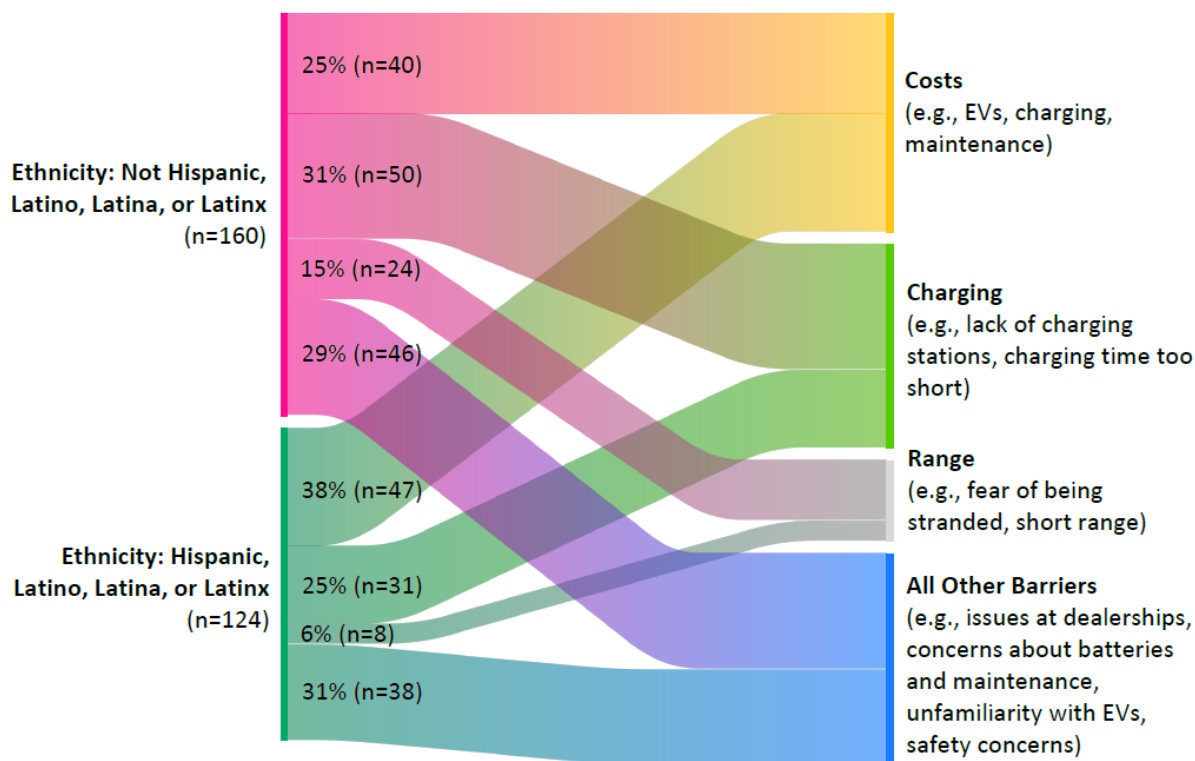


Table 3. Frequency of mentions of barriers by ethnicity.

Categories	Hispanic, Latino, Latina, or Latinx (n=124)	Not Hispanic, Latino, Latina, or Latinx (n=160)
Costs (e.g., EVs, charging, maintenance)	38% (n=47)	25% (n=40)
Charging (e.g., lack of charging stations, charging time too short)	25% (n=31)	31% (n=50)
Range (e.g., fear of being stranded, short range)	6% (n=8)	15% (n=24)
All Other Barriers (e.g., issues at dealerships, concerns about batteries and maintenance, unfamiliarity with EVs, safety concerns)	31% (n=38)	29% (n=46)

Table 4. Frequency of mentions of cost barriers among Hispanic, Latino, Latina or Latinx individuals.

Cost Categories	Cost Barriers	Hispanic, Latino, Latina, or Latinx (n=47)
EV Costs	Costs of EVs are too expensive	47% (n=22)

EV Costs	Do not know the costs of EVs	0% (n=0)
EV Costs	Concern there are hidden costs due to new technologies	0% (n=0)
EV Costs	Would like lifetime warranties	2% (n=1)
EV Costs	Down payment is too costly	0% (n=0)
EV Costs	Particular models are not eligible for incentives	0% (n=0)
Charging Costs	Charging is too expensive	38% (n=17)
Charging Costs	Wary about electricity prices changing	9% (n=4)
Maintenance Costs	Concern that maintenance is expensive	6% (n=3)
Maintenance Costs	Batteries are too expensive	0% (n=0)

Preferred Sources by Ethnicity

Among both ethnicities, doing online research or talking to dealers was most interesting. See Figure 2 and Table 5. Hispanic, Latino, Latina and Latinx individuals also had a higher preference for other forms of marketing, including mail, phone and television commercials.

The following are quotes about preferred information sources from participants who are Hispanic, Latino, Latina or Latinx. Participants prefer to look up information about models and features online, mainly to understand the details about the vehicles before they go to the dealership. The group also welcomed information via television and mail and indicated they might pay attention to such ads when detailed and informative.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 48; Language: Spanish; Household: 3; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“Everyone made valid points. I like to read. I like to educate myself by reading or asking for the information about the car, maybe having it sent to me by mail or online.”

“There [online], you can compare all the prices. The type of car, the color, and everything, and search. The price, too. That way, you don't have to go to a car dealership where they're bothering if you're not ready yet, right? That's how we bought my husband's truck. We looked on the internet until we found something. Then, we made the appointment. We went, and it was quick. You don't waste time because, on the internet, they show you everything. You don't have to go until you're ready to buy or see a car.”

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 41; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“[I like to go] on the internet to see exactly what the car has. Because in the newspapers and on TV, it's very basic, since they only have the specials. On the internet, I look for everything I want the car to have and so on. On the internet.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 34; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“Well, I just recently got my car like a year and a half ago and I first looked on YouTube to compare different plug in models because I knew I wanted an electric or hybrid and after that, then I did some statistics and looked at how the cars operate over time and how much maintenance I would have to do on it and just kind of gauged where I wanted to be, depending on what was available to me, but yes, the first thing was YouTube.”

- Quoted by a focus group participant with the following characteristics: 21-4

“If anyone is itching to buy one of those [electric] vehicles, I think they could send a package in the mail with all the information. That’d be a good way.”

“I usually get information from TV. From there, I go to the dealership, and there, I see which car I like, which car I prefer.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 39; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“Maybe like that, or in commercials, you can see how much you would save or how the car works. Things like that. The incentives that you guys were talking about.”

Figure 2. Frequency of mentions of information preferences by ethnicity.

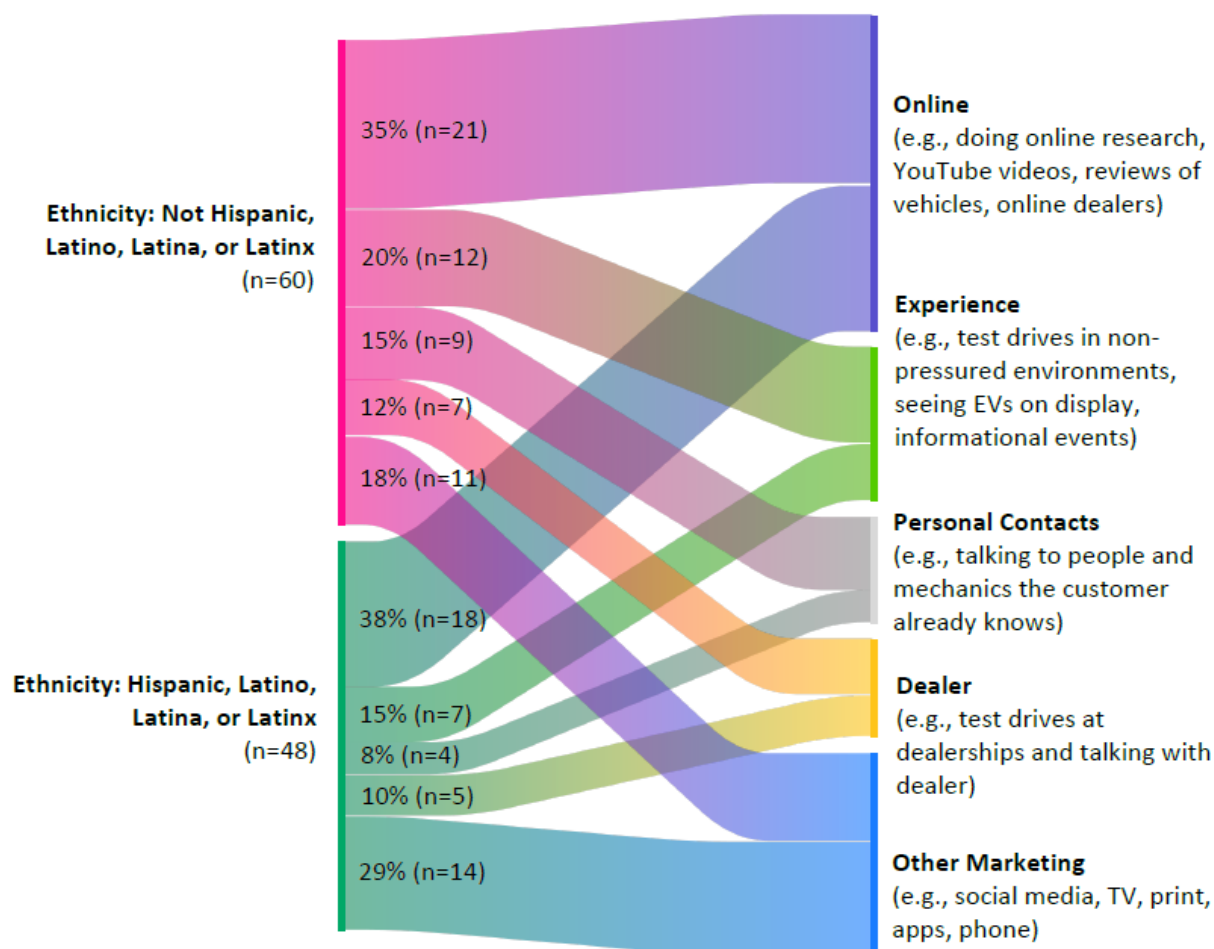


Table 5. Frequency of mentions of information preferences by ethnicity.

Categories	Hispanic, Latino, Latina, or Latinx (n=48)	Not Hispanic, Latino, Latina, or Latinx (n=60)
Online (e.g., doing online research, YouTube videos, reviews of vehicles, online dealers)	38% (n=18)	35% (n=21)
Experience (e.g., test drives in non-pressured environments, seeing EVs on display, informational events)	15% (n=7)	20% (n=12)
Personal Contacts (e.g., talking to people and mechanics the customer already knows)	8% (n=4)	15% (n=9)
Dealer (e.g., test drives at dealerships and talking with dealer)	10% (n=5)	12% (n=7)
Other Marketing (e.g., social media, TV, print, apps, phone)	29% (n=14)	18% (n=11)

Race

CSE's prior analyses of participation among races within CVRP have indicated that Black or African Americans, Native Hawaiians or other Pacific Islanders, White and those that identify as Other Race are underrepresented within LMI individuals in the program.¹⁴ Though we recruited for all races, not all races were represented in the focus groups due to the pool of interested potential participants.¹⁵ Races included in focus groups included Bi-Racial or Multi-Racial, Black or African American, South Asian, Southeast Asian, White and Other Race. Among these races, thoughts of underrepresented races – Black or African American and White – are discussed.

Barriers by Race

The predominant barriers among races differed; about half were more concerned about costs, and the other half were more concerned about charging. See Table 6. Black or African American and White individuals were both more concerned about charging. Black or African Americans were also less concerned about costs than White individuals.

As mentioned within this report's discussion on ethnicity, the 2016 focus group revealed that cost and charging were top concerns. However, vehicle attractiveness and vehicles as a means of self-expression and identity were also barriers, particularly among African American participants. In contrast, the 2021 focus group participants rarely mentioned the style or attractiveness of EVs and instead focused on charging, costs, range anxiety and other similar aspects.

The following are quotes from Black or African American individuals in the 2021 focus groups regarding charging concerns. Participants speak about the lack of charging stations impeding convenience and spontaneity when driving. They are interested in having charging stations conveniently and frequently located and are concerned about losing charge before reaching a charging station. Several indicated that rebates, while helpful for aiding in cost concerns, do not address these charging concerns enough to validate purchasing or leasing EVs.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 23; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"I think if you're a person like me, likes to travel, who likes to drive, it becomes more of a hindrance because you can't really go that far with the battery before you have to stop and then you have to stop for a while and then you have to get to where you're going and you have to charge again."

"... the rebates don't overshadow those concerns on the range of the battery and how fast it is to charge, because it's all about having something that is quick, something that you can be efficient in So, it's like, you don't want to have to rush somewhere and it's like, 'Oh, shoot. My car battery is about to die. What am I going to do? I need two hours to charge it.' Whereas in the gas car's like, 'OK, I'm about to run out of gas. Let me stop right here get some gas going about my way.'

¹⁴ Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). Analysis of LMI CVRP Participation.

¹⁵ For the number of participants among races included in the focus groups, refer to Appendix B of Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). Analysis of LMI CVRP Participation.

Five minutes, 10 minutes out of your day, that might have- being their cause of problem. There's not a quick fix for charging battery."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 57; Language: English; Household: 6; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"If it was more convenient where I'm at, then I would be OK because even if you drive from where I'm located to Las Vegas, that's a big stretch. So you would have to really just go and look and try to find out where can you charge. By that time, you're probably stuck somewhere."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 29; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"...hearing everyone's concerns about the fully electric vehicles does kind of make me think, because I just imagine being somewhere driving at night, and then there's no gas, there's no charging station, and I'm just there. I mean, most of the time with gas stations, you're not too far from one, wherever you are. But I just wonder if I have a mile left and my whatever, and then I don't, I can't charge it..."

The following are quotes from White individuals regarding charging concerns. The infrequency of charging stations was discussed as well as not knowing where to find charging stations. Charging issues appeared to be deal-breakers for several participants.

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 42; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"If charging stations were a little more populated and spread out, it would be more fun to consider a fully electric car."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 26; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"And perhaps, as we develop more as a people we get more charging stations throughout, and maybe the battery life would be better but currently, I think that it's just not feasible for my family to have a completely electric."

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 52; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“I need to charge if I had an all-electric vehicle. So, I have to know where's the next charging station, am I just going to rely on my smart phone?”

Table 6. Frequency of mentions of barriers by race.

Categories	Bi-Racial or Multi-Racial (n=18)	Black or African American (n=57)	South Asian (n=23)	Southeast Asian (n=10)	White (n=58)	Other Race (n=118)
Costs (e.g., EVs, charging, maintenance)	39% (n=7)	19% (n=11)	26% (n=6)	30% (n=3)	28% (n=16)	37% (n=44)
Charging (e.g., lack of charging stations, charging time too short)	44% (n=8)	33% (n=19)	17% (n=4)	20% (n=2)	33% (n=19)	25% (n=29)
Range (e.g., fear of being stranded, short range)	0% (n=0)	25% (n=14)	13% (n=3)	20% (n=2)	9% (n=5)	7% (n=8)
All Other Barriers (e.g., issues at dealerships, concerns about batteries and maintenance, unfamiliarity with EVs, safety concerns)	17% (n=3)	23% (n=13)	43% (n=10)	30% (n=3)	31% (n=18)	31% (n=37)

Preferred Sources by Race

Participants of most races preferred learning about vehicles online instead of other means of communication. See Table 7. Note that mentions among some races were few (under ten mentions), so interpretation of these results should be made in the context of the sample size.

Black or African American and White individuals preferred online sources and online dealers. The following are quotes by Black or African American participants. Participants preferred the impartial voices of those who have experienced models of vehicles; they wanted to hear from consumers directly. Participants also discussed the value of online reviews similar to the print versions of *Consumer Reports* and *Autotrader* that compared various features of models.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 29; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“I like to go on forums like Reddit and stuff so I can see what people are actually saying, not just companies or articles.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 33; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"I like referrals or online reviews. So when I look at something like that, that helps persuade my decision."

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 38; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"...I'm young but I'm old school. I go through Autotrader magazines or their website. ... I'll Google the type of vehicle I'm looking for and of course it's going to bring up the local car dealerships. I try to do more of a thorough research as far as the vehicle that I'm looking for. I normally type that in and see what spots that it pops up."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 58; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"[People need] something [with] more comparison because a lot of people ain't going to pick up a Consumer because it's a boring magazine. They're going to look over that and go to something else. That's going to be more interesting. So, you got to put it in something that's going to interest them, pique their interest to get them to pick it up and look at it. ...I'll pick up a Consumer, but most people would not do that."

The following are quotes by White participants that prefer online sources of information. Participants are interested in various online sources, including reviews on YouTube, industry sources and online dealers. Common among participants is the interest in gathering varied information to make an informed decision.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 26; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"We have gone through actually quite a few cars till we got the cars that we have now, and just asking- We have mechanics in the family, so we ask their opinion; constantly online looking at different reviews and Consumer Reports and blogs and all that, just trying to get as much possible information so we don't make the same mistake again."

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 52; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"I go to YouTube. There's two guys. One has a channel called Chris-Fix. And the other is Scotty Kilmer. And the Scotty Kilmer has been repairing cars for 35 years. So he knows what's a good car to buy. Where, how to buy it and he coaches you all these free videos on YouTube. That's my number one go-to place. And also, just local mechanics, I'll strike up conversation with them and get information from them. And they'll kind of coach me too."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 53; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"I like to start with TrueCar. You can put in all the features of the car that you want ... the last five cars that I've purchased have been cars that I already knew what I wanted. It was pretty easy to be able to see the features that were important to me by going there. Of course, I'll follow up looking at the internet to see safety and how well that car compares to other cars. Typically, I know the car that I want and I'll research that one."

Table 7. Frequency of mentions of information preferences by race.

Categories	Bi-Racial or Multi-Racial (n=2)	Black or African American (n=19)	South Asian (n=11)	Southeast Asian (n=6)	White (n=22)	Other Race (n=48)
Online (e.g., doing online research, YouTube videos, reviews of vehicles, online dealers)	50% (n=1)	32% (n=6)	45% (n=5)	17% (n=1)	36% (n=8)	38% (n=18)
Experience (e.g., test drives in non-pressured environments, seeing EVs on display, informational events)	50% (n=1)	16% (n=3)	0% (n=0)	50% (n=3)	23% (n=5)	15% (n=7)
Personal Contacts (e.g., talking to people and mechanics the customer already knows)	0% (n=0)	21% (n=4)	27% (n=3)	0% (n=0)	9% (n=2)	8% (n=4)
Dealer (e.g., test drives at dealerships and talking with dealer)	0% (n=0)	5% (n=1)	27% (n=3)	17% (n=1)	9% (n=2)	10% (n=5)
Other Marketing (e.g., social media, TV, print, apps, phone)	0% (n=0)	26% (n=5)	0% (n=0)	17% (n=1)	23% (n=5)	29% (n=14)

Age

CSE's prior research identified ages 21-29 and 30-39 as underrepresented within the LMI CVRP participants.¹⁶ Ages 50-59 among the LMI population are more likely to participate in CVRP. Within the focus groups, participants were spread approximately evenly among age groups between ages 21 and 59.¹⁷

Barriers by Age

Barriers varied among the ages. See Table 8 and Figure 3. Of the three main barriers, only ages 50-59 were less concerned about costs. This 50-59 age group was most concerned about charging. Given that ages 50-59 are more likely to participate in the CVRP, perhaps this age group, though LMI, has accumulated enough wealth to participate more freely in the CVRP compared to other age groups.

The following are quotes from participants of one of the underrepresented age groups, ages 30-39. Concerns about costs were on par with concerns about charging. Participants believed that EVs are not as affordable as traditional vehicles and have inconvenient features, including unfamiliar, new technology and a lack of frequent charging stations.

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 32; Language: English; Household: 4; Ethnicity: Hispanic, Latino, Latina, or Latinx; Race: Other Race; County: Shasta; Education: Some college/2-year college/technical school/associate degree; Residence: An attached house, a townhome, or similar

“Well, yes. I know that it's a little more expensive to say the least going for electric than it is just like a general car so to speak. So I think if it was made a little bit more affordable, it would help. Not that that's necessarily a deterring factor for me but it would help sweeten the deal so to speak. So I know it's a newer technology, and newer technologies always tend to be on the higher end as opposed to something that's already been out there but I think price definitely has to be on there as well.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 37; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“No, I don't have a place [to charge]. I think the only way to charge it would be to go to a mall, which is where they are now. Near my house, though, no.”

The following are quotes from the underrepresented age group, ages up to 29. This age group was most concerned about costs, and charging concerns closely followed. Participants were concerned about a lack of convenience and spontaneity due to having to plan when and where to charge an EV. Participants also expressed concern about the expense of vehicles and maintenance.

¹⁶ Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). Analysis of LMI CVRP Participation.

¹⁷ For the number of participants among ages included in the focus groups, refer to Appendix B of Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). Analysis of LMI CVRP Participation.

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 23; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“I think kind of what everyone else said, it is kind of scary because you see charging stations more but you don't see that many and you know, sometimes I forget to get gas, so it's like you have to be really on top of it if you have an electric car so I don't- you can't be as spontaneous probably with your travel so that too.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 26; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“Is it just more expensive to have those pieces fixed? Or is it cheaper than usual? I mean, I just, I don't understand that. I haven't done much research into electric vehicles, but all I heard was that batteries were crazy expensive.”

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 28; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“... another problem is some of the models [don't] have any incentives so [these] are very expensive so a lot of people cannot afford to buy [them]. Because the gasoline car, you can get it for 25 grand, a new car, but these kind of electric cars go up to 45 grand just to buy it. So cost is another factor people consider...”

Figure 3. Frequency of mentions of barriers by age.

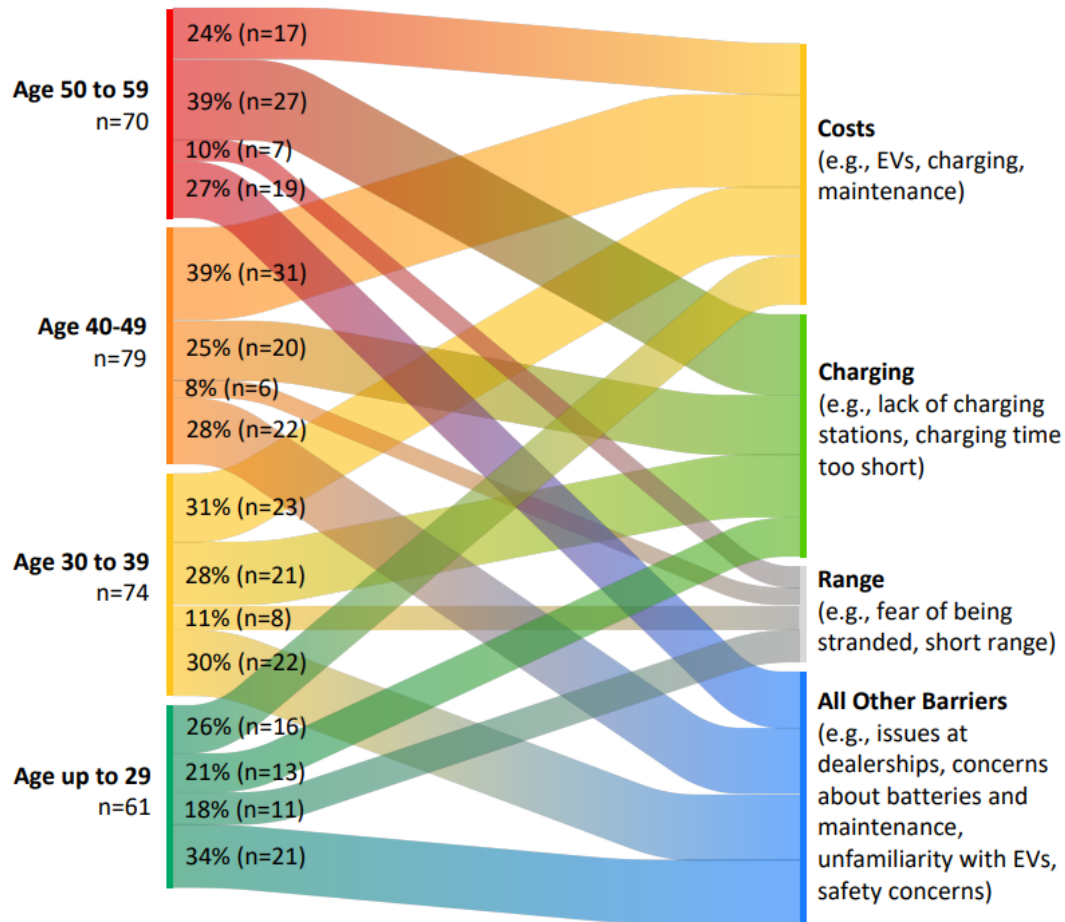


Table 8. Frequency of mentions of barriers by age.

Categories	Ages up to 29 (n=61)	Ages 30 to 39 (n=74)	Ages 40 to 49 (n=79)	Ages 50 to 59 (n=70)
Costs (e.g., EVs, charging, maintenance)	26% (n=16)	31% (n=23)	39% (n=31)	24% (n=17)
Charging (e.g., lack of charging stations, charging time too short)	21% (n=13)	28% (n=21)	25% (n=20)	39% (n=27)
Range (e.g., fear of being stranded, short range)	18% (n=11)	11% (n=8)	8% (n=6)	10% (n=7)
All Other Barriers (e.g., issues at dealerships, concerns about batteries and maintenance, unfamiliarity with EVs, safety concerns)	34% (n=21)	30% (n=22)	28% (n=22)	27% (n=19)

Preferred Sources by Age

Regardless of age, online sources are preferred. See Table 9 and Figure 4. Notably, the youngest age group, up to age 29, had no interest in experiential learning but were second most interested in utilizing personal contacts, followed by those in the 30-39 age group.

The following are quotes from those aged 30-39. Participants preferred going to online dealers, reading online reviews and discussing models with mechanics and personal contacts.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 34; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“So, I really like CarMax for that particular aspect. Because they don't push things on you. They just let you look around. If you want to test drive, they'll give you a test drive. They just don't have the newer models, unfortunately.”

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 32; Language: English; Household: 4; Ethnicity: Hispanic, Latino, Latina, or Latinx; Race: Other Race; County: Shasta; Education: Some college/2-year college/technical school/associate degree; Residence: An attached house, a townhome, or similar

“... if I'm looking for a specific car, I'll look for just the specs on that car, and maybe other cars that are similar to that, to see maybe if I could find one cheaper, that offers the same things I'm looking for. But primarily, I go to my cousin who is a mechanic. So, when I'm buying a car, I'm not in the camp of necessarily buying new cars or slightly used cars. I'll probably do private dealer or Kelley Blue Book, and I'll ask for his opinion, because I'm not a mechanic, and I'm not mechanically-inclined, but he knows his stuff. So, normally, he'll come with me, he'll tell me if he thinks it's a good deal, if it needs work, if he's able to work on it for me. And then that's just typically how I go about it. So, I'm not always looking for a new car or slightly used, I'm probably, more so, in the camp of buying when, maybe, a little bit older, and working on it as I need to.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 32; Language: English; Household: 6; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“Well, I usually do everything online. I usually look for reviews, whenever people write their cars and everything. Depending who has the highest reviews out of people that buy that type of car, that's usually the way I go.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 33; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“So knowing people that own them and them telling me the value of having it, that's helped me make my decision.”

The following are quotes from ages 21-29. Participants preferred online sources, but several also indicated a distrust of any source. Participants had an interest in verifying resources and cross-checking information with personal contacts.

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 23; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

When speaking about information about vehicles, the individual said, "I guess if it's through a dealership, the way that I would probably like most organically access it is just through a website, an official kind of website where you can compare and stuff and you can compare between electric vehicles, but then also compare between that and another type of car that you were looking at. And then, you can also factor in kind of the energy stuff..."

"Honestly, I do YouTube videos too. But even those I feel like I don't still know enough to have a good judgment of YouTube, there's so much content. So I mostly just talk to people that I know."

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 28; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"I did learn mostly online. I do a lot of research. I did get all information from verifiable sources, just like their own websites, where they display all the information, 160, 170 different features. Maybe 15-to-20-page booklet. So, you have everything out there. Once you want to read it, you can read everything out. And also, you can cross-check with the dealers and everything to make sure that you're getting the right warranty and everything. And I will say there is definitely a market for it, but it just depends on how the person lives the lifestyle pretty much."

Figure 4. Frequency of mentions of information preferences by age.

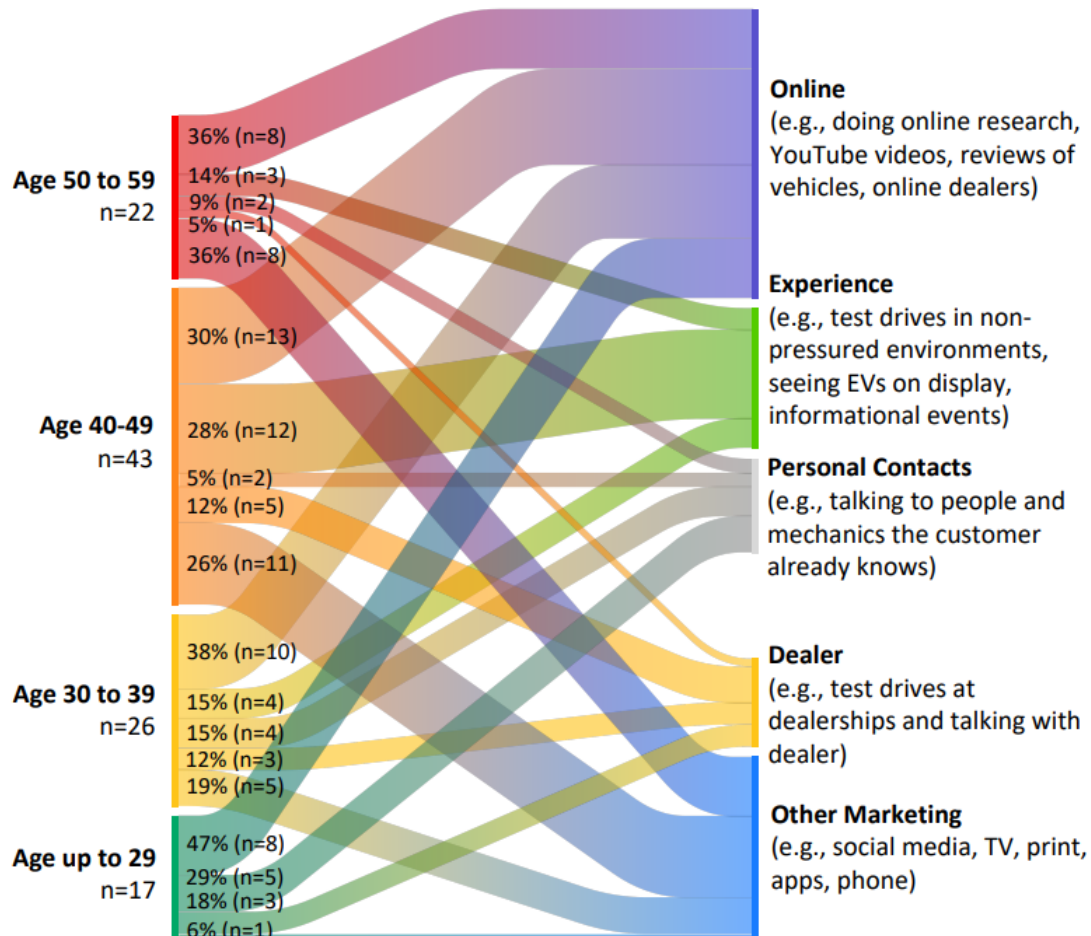


Table 9. Frequency of mentions of information preferences by age.

Categories	Ages up to 29 (n=17)	Ages 30 to 39 (n=26)	Ages 40 to 49 (n=43)	Ages 50 to 59 (n=22)
Online (e.g., doing online research, YouTube videos, reviews of vehicles, online dealers)	47% (n=8)	38% (n=10)	30% (n=13)	36% (n=8)
Experience (e.g., test drives in non-pressured environments, seeing EVs on display, informational events)	0% (n=0)	15% (n=4)	28% (n=12)	14% (n=3)
Personal Contacts (e.g., talking to people and mechanics the customer already knows)	29% (n=5)	15% (n=4)	5% (n=2)	9% (n=2)

Dealer (e.g., test drives at dealerships and talking with dealer)	18% (n=3)	12% (n=3)	12% (n=5)	5% (n=1)
Other Marketing (e.g., social media, TV, print, apps, phone)	6% (n=1)	19% (n=5)	26% (n=11)	36% (n=8)

Household Size

The number of individuals in a household often dictates the spending habits of individuals; shared household costs are more manageable when multiple people in the household have incomes. Most focus group participants were in households of 2 to 4 people. Handfuls of participants were in households of 1 and in households of 5 or more people.

Barriers by Household Size

Concerns about costs were most frequently mentioned among focus group participants in households of 2 to 4 people. See Table 10. The following are quotes from individuals in households of 2 to 4, the majority of those in the focus groups. Participants are concerned about the costs of EVs and costs of charging, but some remained optimistic that the costs eventually would be feasible as technology advances.

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 41; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina, or Latinx; Race: Bi-Racial or Multi-Racial; County: San Diego; Education: Some college/2-year college/technical school/associate degree; Residence: A detached house

When speaking about the concept of charging, the individual said, "I still don't know if I'm charging the car publicly, am I paying somebody? Is there a credit card slot? And if I'm living in Texas, and they shut off my power, where do I charge my car? It can get real pricey to charge the car, I imagine, I don't know. Not things I want to have to consider, but got to. Yeah. There's not a whole lot of charging stations around here. I've never used one and I don't know how they work. I keep flashing to that Black Mirror episode where she's trying to charge this rental car that she's got going to the wedding, where she's going to make a speech. And she can't do it. And it's beeping and that's about it. I mean, yeah, if you can get them electric, I mean, I know there's the new, they're talking about massless storage, structural batteries, and then recharging with solar power, things like that. But is it feasible? Is it realistic? Is it always going to be you have to find a place to plug your car?"

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 42; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"Like you said, you don't know who owns the structure. It's kind of like gas stations. All cars run on oil back in the day, all cars run on gas. But depending on where you got your gas, you could pay more or pay less depending on how much the, that particular person wanted to charge. So are there currently regulations in place as far as how to control pricing for electric? Or is it

completely dependent upon the utility that, like PG&E, or somewhere in Virginia like Potomac Edison, who controls the prices?”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 48; Language: Spanish; Household: 3; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“You have to do your homework first, right? Where do you want to save money? Where do you want to put your money? If you want to put bells and whistles on your car, it’s going to cost you more money. If I had the chance, and maybe in a year or two, my husband might be looking for a new car. ... I’m not afraid of that change or anything because I hope it’ll be a good thing. For me, it’s just a matter of doing more homework and getting more information about cars. There’s also mid-sized trucks that are going to come out and that have all these things. For me, it’s interesting to see the new things that are going to come out. Right now, the energy-efficient cars are a little bit expensive, but I think, like everything else in production, they’re going to start going down. Because before, I saw that the Teslas – my husband used to work for the company. If you ordered the car, you’d have to wait over a year to receive it. Now, here where I live, it’s common. I see more Teslas everywhere. In my opinion, the time is now. People are jumping on that trend, I think. Maybe we’ll see.”

Table 10. Frequency of mentions of barriers by household size.

Categories	Household Size of 1 (n=45)	Household Size of 2 (n=35)	Household Size of 3 (n=46)	Household Size of 4 (n=126)	Household Size of 5 (n=16)	Household Size of 6+ (n=16)
Costs (e.g., EVs, charging, maintenance)	20% (n=9)	40% (n=14)	33% (n=15)	33% (n=42)	38% (n=6)	6% (n=1)
Charging (e.g., lack of charging stations, charging time too short)	44% (n=20)	29% (n=10)	26% (n=15)	22% (n=28)	19% (n=3)	50% (n=8)
Range (e.g., fear of being stranded, short range)	18% (n=8)	11% (n=4)	9% (n=15)	7% (n=9)	13% (n=2)	31% (n=5)
All Other Barriers (e.g., issues at dealerships, concerns about batteries and maintenance, unfamiliarity with EVs, safety concerns)	18% (n=8)	20% (n=7)	33% (n=15)	37% (n=47)	31% (n=5)	13% (n=2)

Preferred Sources by Household Size

Individuals of most household sizes preferred searching online or seeking online dealers to find information about vehicles. Individuals from households of 5 or more were the exception. Experiential learning was about equal to seeking information online. See Table 11.

The following are quotes from households of 2 to 4 people. Participants discussed the ease of seeing information online and that it is an ideal place to start learning.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 52; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“Now, more than ever, people use their phones, and they’re always looking up things on the internet. Pretty much everything you look for, you find online. You can look up information on that, and you can start researching how the cars work. As you mentioned, for example, I didn’t know that they were giving incentives to buy the electric cars. Those are new things to me. I’ve learned something today.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 54; Language: English; Household: 2; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“I like going online, just to gather the information, look at the different cars, what they offer, what comes- what the standard is, what comes with it, blah. And then, when I figure out what car, then I’ll go to the dealership, and start that haggle-athon.”

This quote is from a participant from a household of 5 or more. This is an example of the experiential learning some individuals prefer. They want to be able to experience EVs and learn without facing decisions about purchasing right away.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“But if we could somehow set up programs that were already based in existing infrastructure to allow people to essentially test drive at no cost to them so that they become familiar, so that they realize it’s just a car. It’s just a different way of getting energy into that car.”

Table 11. Frequency of mentions of information preferences by household size.

Categories	Household Size of 1 (n=17)	Household Size of 2 (n=16)	Household Size of 3 (n=19)	Household Size of 4 (n=44)	Household Size of 5 (n=10)	Household Size of 6+ (n=2)
Online (e.g., doing online research, YouTube videos, reviews of vehicles, online dealers)	41% (n=7)	31% (n=5)	47% (n=9)	32% (n=14)	30% (n=3)	50% (n=1)
Experience (e.g., test drives in non-pressured environments, seeing	29% (n=5)	19% (n=3)	5% (n=1)	14% (n=6)	30% (n=3)	50% (n=1)

EVs on display, informational events)						
Personal Contacts (e.g., talking to people and mechanics the customer already knows)	12% (n=2)	25% (n=4)	16% (n=3)	9% (n=4)	0% (n=0)	0% (n=0)
Dealer (e.g., test drives at dealerships and talking with dealer)	12% (n=2)	6% (n=1)	26% (n=5)	7% (n=3)	10% (n=1)	0% (n=0)
Other Marketing (e.g., social media, TV, print, apps, phone)	6% (n=1)	19% (n=3)	5% (n=1)	39% (n=17)	30% (n=3)	0% (n=0)

Gender

New EV buyers and LMI participants in CVRP are disproportionately men compared to representation among LMI Californians.¹⁸ Approximately half of the focus group participants identified as women, and thus the following sections provide some insight regarding why these individuals are less likely to engage with the CVRP.

Barriers by Gender

Concerns about costs were most frequently mentioned among both men and women. Charging remained a close second, and women tended to be more concerned about the range of EVs than men. See Figure 5 and Table 12. The following are quotes from women about cost concerns; participants discussed a wide range of cost concerns.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 39; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina, or Latinx; Race: Other Race; County: Riverside; Education: Some college/2-year college/technical school/associate degree; Residence: A detached house

“I wasn’t convinced [to acquire an EV] because I felt like the maintenance was going to be more. If something broke down, or if something happened the computer – even though most new cars already have computers. I still felt like it was going to cost a lot to fix it.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 54; Language: English; Household: 2; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: Riverside; Education: High school graduate; Residence: A detached house

When speaking of an acquaintance that had an EV, the participant said, *“And the issue that he has or that any other person that had an electric car is it costs so much money to charge his car.”*

¹⁸ Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). Analysis of LMI CVRP Participation.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 26; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: White; County: Shasta; Education: College graduate; Residence: A detached house

“So if you for instance have solar powered panels and you end up, you don't owe any utilities because you've got enough money and perhaps you even made PG&E money by providing them extra electricity, they would not pay you out. Or they say that they owe you, but then they wouldn't actually give you anything. I feel like if there was actual incentive for like if you are making a company money for saving them, you should get what you made if you put the money into the solar panels or the car. Just the fact that you're— Well, I guess you're not saving gas companies money, but still. Just something more, I don't know, along the lines of that to where if you're actually helping to make somebody money, you should get some of the money that you helped to make.”

Figure 5. Frequency of mentions of barriers by gender.

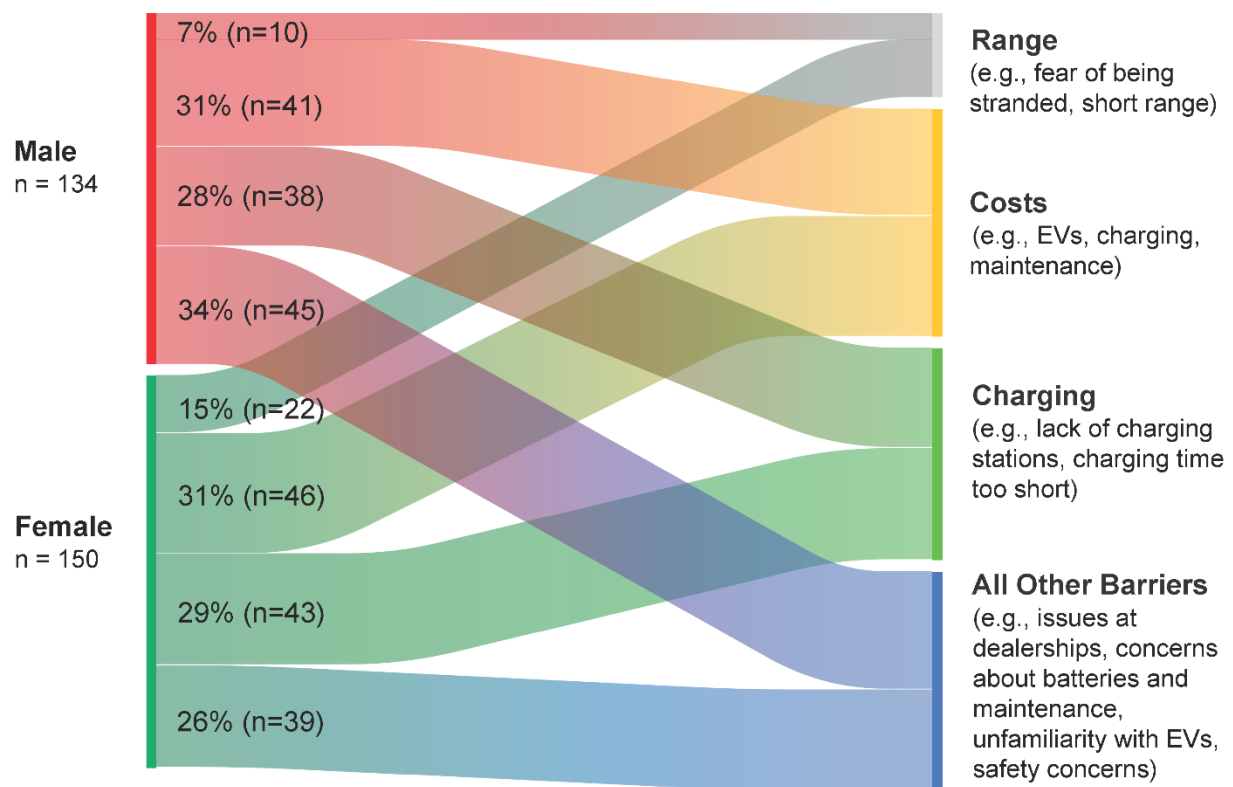


Table 12. Frequency of mentions of barriers by gender.

Categories	Female (n=150)	Male (n=134)
Costs (e.g., EVs, charging, maintenance)	31% (n=46)	31% (n=41)
Charging (e.g., lack of charging stations, charging time too short)	29% (n=43)	28% (n=38)
Range (e.g., fear of being stranded, short range)	15% (n=22)	7% (n=10)
All Other Barriers (e.g., issues at dealerships, concerns about batteries and maintenance, unfamiliarity with EVs, safety concerns)	26% (n=39)	34% (n=45)

Preferred Sources by Gender

Both men and women preferred online resources. Interest in other forms of information was largely similar among the genders. See Figure 6 and Table 13. Because women are underrepresented, we selected a few quotes from women regarding interest in online resources.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 54; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: White; County: San Joaquin; Education: College graduate; Residence: An apartment or condo

“I would try and do as much online research as I could in advance to be armed with as much information as possible going in.”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 48; Language: Spanish; Household: 3; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: Shasta; Education: High school graduate; Residence: A detached house.

“There, you can compare all the prices. The type of car, the color, and everything, and search. The price, too. That way, you don't have to go to a car dealership where they're bothering if you're not ready yet, right?”

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 53; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: White; County: Sacramento; Education: College graduate; Residence: A detached house

“I like to start with True Car. You can put in all the features of the car that you want and it will find the car for you and the dealerships will supposedly send over their best pricing.”

Figure 6. Frequency of mentions of information preferences by gender.

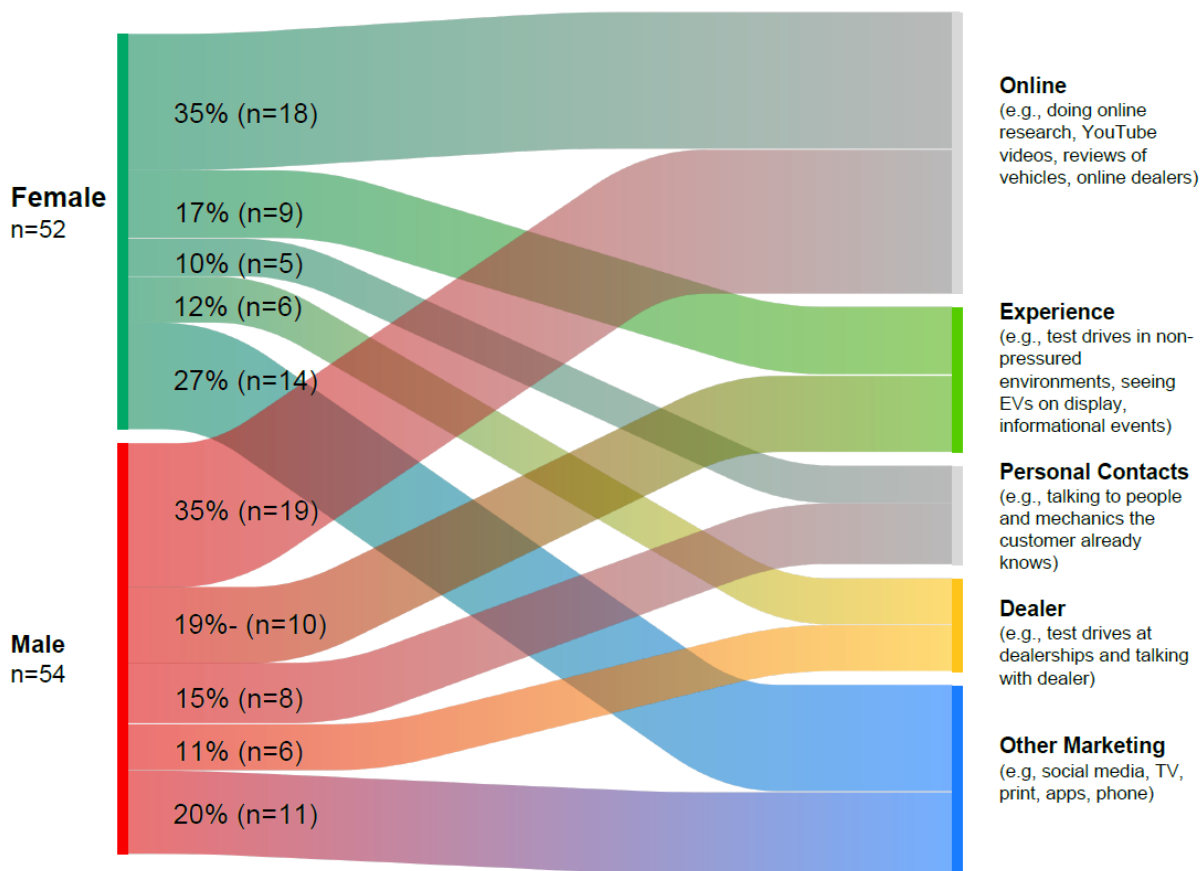


Table 13. Frequency of mentions of information preferences by gender.

Categories	Male (n=54)	Female (n=52)
Online (e.g., doing online research, YouTube videos, reviews of vehicles, online dealers)	35% (n=19)	35% (n=18)
Experience (e.g., test drives in non-pressured environments, seeing EVs on display, informational events)	19% (n=10)	17% (n=9)
Personal Contacts (e.g., talking to people and mechanics the customer already knows)	15% (n=8)	10% (n=5)
Dealer (e.g., test drives at dealerships and talking with dealer)	11% (n=6)	12% (n=6)
Other Marketing (e.g., social media, TV, print, apps, phone)	20% (n=11)	27% (n=14)

Education

In prior analysis, we determined that cost concerns are more prevalent for individuals with some college education or high school degrees compared to those with college degrees.¹⁹ In this report, we focus specifically on the information sources preferred by individuals of varying education levels and found significant differences. While both those with and without college degrees preferred online sources, those with college degrees preferred online sources to a greater extent. See Figure 7 and Table 14. Those with some college or high school degrees preferred personal contacts and other marketing sources (e.g., phone, mail, etc.) than those with college degrees. The following are quotes from some college or high school degrees regarding interest in online resources.

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 41; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Bi-Racial or Multi-Racial; County: San Diego; Education: Some college/2-year college/technical school/associate degree; Residence: A detached house

"I would go to Google automatically and say, "Where do I find this information?"

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 38; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Black or African American; County: San Bernardino; Education: High school graduate; Residence: A detached house

"I believe it's Autotrader.com now. You just go online, put in Autotrader.com, and you put in all the statistics of the car that you want. And it finds exactly which one that you want. And it filters out, depending on what your criteria is that you put in. So now they transitioned from the magazine to Autotrader.com."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 52; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Jose; Education: Some college/2-year college/technical school/associate degree; Residence: Apartment or condo

"You always watch commercials on TV or the internet. It's much easier. That way, you go, and you're sure about what you like. You just go to the dealership, and look at it, and decide what's good for you to buy."

¹⁹ Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). Analysis of LMI CVRP Participation.

Figure 7. Frequency of mentions of information sources by education level.

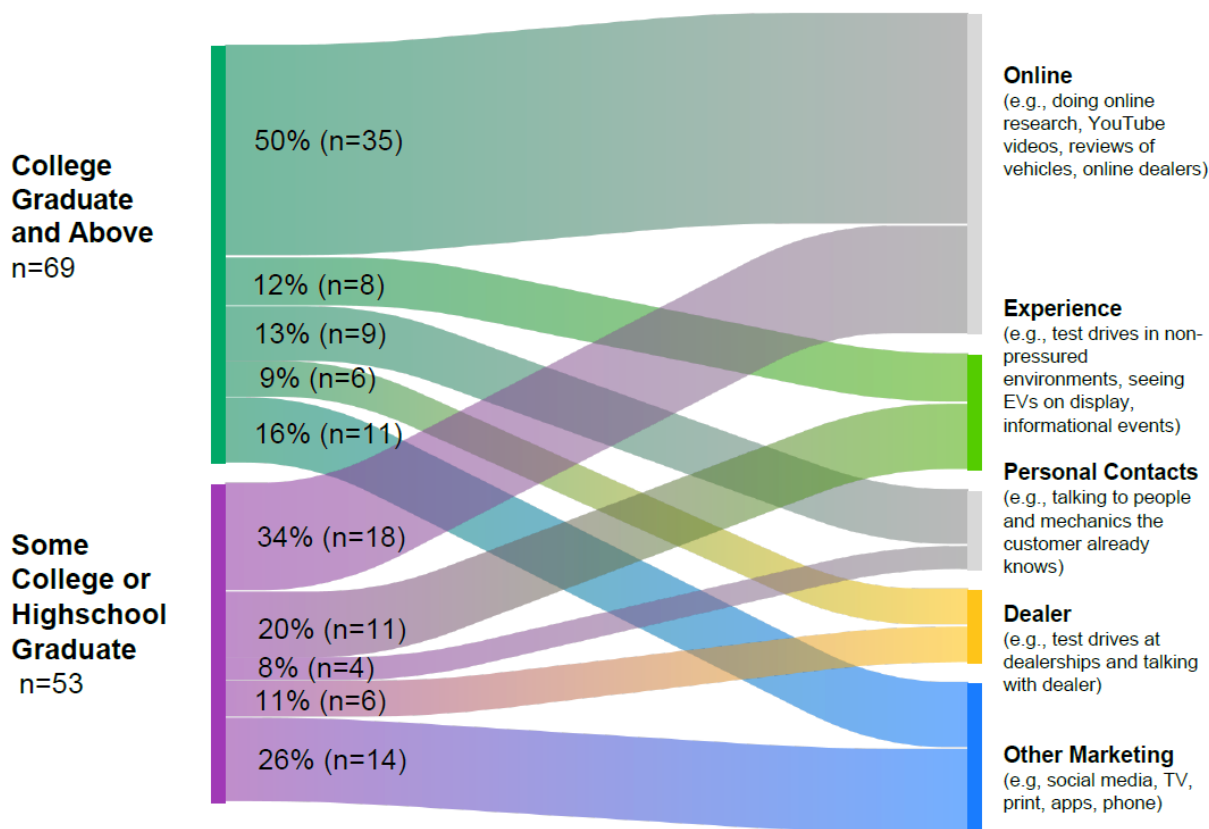


Table 14. Frequency of mentions of information sources by education level.

Categories	Some College or Highschool Graduate (n=53)	College Graduate and Above (n=69)
Online (e.g., doing online research, YouTube videos, reviews of vehicles, online dealers)	34% (n=18)	51% (n=35)
Experience (e.g., test drives in non-pressured environments, seeing EVs on display, informational events)	21% (n=11)	12% (n=8)
Personal Contacts (e.g., talking to people and mechanics the customer already knows)	8% (n=4)	13% (n=9)
Dealer (e.g., test drives at dealerships and talking with dealer)	11% (n=6)	9% (n=6)
Other Marketing (e.g., social media, TV, print, apps, phone)	26% (n=14)	16% (n=11)

Residence

In prior analysis, we determined barriers associated with individuals of various dwelling types.²⁰ Those in detached houses were most concerned about costs, and those in attached houses or townhomes were most concerned about charging. No differences in preferences about information sources were found among various dwelling types. See Figure 8 and Table 15. Consistent with the aforementioned findings, most preferred online sources. The following quotes are from various individuals who prefer online resources.

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 34; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

“Well, I just recently got my car like a year and a half ago and I first looked on YouTube to compare different plug in models because I knew I wanted an electric or hybrid and after that, then I did some statistics and looked at how the cars operate over time and how much maintenance I would have to do on it and just kind of gauged where I wanted to be, depending on what was available to me, but yes, the first thing was YouTube.”

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 28; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: South Asian; County: San Diego; Education: Some graduate school/post-graduate degree; Residence: A detached house

“Right now, most of the times, when I do research, I prefer online sources. Because there are not many people in my family who actually has electric cars to be honest, there is nobody. So, I, initially, start with Google searches, to see different kinds of blogs and car dealerships, what are the promotions going on? What are the grants offered? What are the tax rebates offered? Pretty much a lot of research before you go into the market. Is there any special financing options, blah, blah, blah. So, it's just the basic car shopping procedure.”

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 48; Language: English; Household: 5; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: Imperial; Education: College graduate; Residence: A detached house

“There are some good videos on YouTube, too, of how you can hassle or haggle, or bargain or barter with these people.”

²⁰ Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). Analysis of LMI CVRP Participation.

Figure 8. Frequency of mentions of information sources by dwelling type.

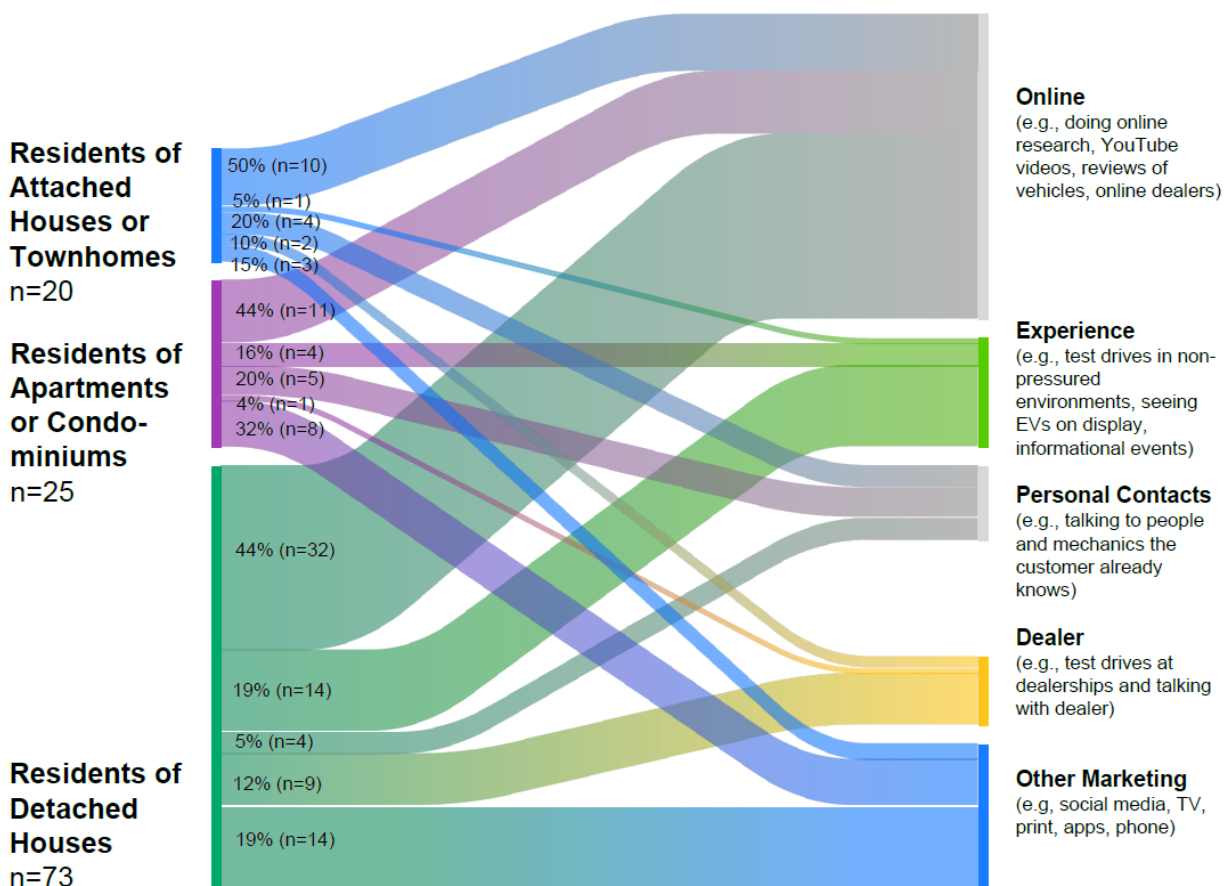


Table 15. Frequency of mentions of information sources by dwelling type.

Categories	Detached House (n=73)	Apartment or Condo (n=29)	Attached (n=20)
Online (e.g., doing online research, YouTube videos, reviews of vehicles, online dealers)	44% (n=32)	38% (n=11)	50% (n=10)
Experience (e.g., test drives in non-pressured environments, seeing EVs on display, informational events)	19% (n=14)	14% (n=4)	5% (n=1)
Personal Contacts (e.g., talking to people and mechanics the customer already knows)	5% (n=4)	17% (n=5)	20% (n=4)
Dealer (e.g., test drives at dealerships and talking with dealer)	12% (n=9)	3% (n=1)	10% (n=2)
Other Marketing (e.g., social media, TV, print, apps, phone)	19% (n=14)	28% (n=8)	15% (n=3)

Focus Group Participants' Program Ideas

We asked participants how they would prefer to learn about EVs and what ideas they had for programs that could further incentivize EVs. Consistently, participants expressed they would like to learn more about EVs and experience them first-hand. Participants communicated that they have rarely seen EVs discussed across advertising, marketing and social media campaign channels. The following are ideas participants have for increasing exposure.

- **Integrated Information Sources:** Participants were interested in integrated information sources. They understood that EVs require support from multiple entities: cities, manufacturers and utilities, for example. Similarly, participants expressed that marketing and advertising for EVs need to extend beyond just manufacturers; any entities trying to promote EVs or transportation need to increase efforts to expose consumers to EVs on the same level they are exposed to conventional vehicles.
- **In-Person Educational Opportunities:** Participants felt they did not know very much when it came to EVs, and they were interested in educational opportunities. Participants suggested educational events within the community, including in-person events where consumers could talk to EV experts, learn, compare options and test drive EVs. While participants thought a dealership or city could host the event, participants expressed that it is important they receive unbiased information without a salesperson pressuring them.
- **Training for Dealerships and Salespeople:** Participants reported frustration when engaging with salespeople who are not knowledgeable about EVs. Participants suggested encouraging dealerships to train and educate their staff on EVs to provide more information to consumers and make EVs a more competitive option. Participants expressed that the dealerships and manufacturers need to market and sell EVs just as rigorously as conventional vehicles.
- **Public Exposure:** Other ideas to increase exposure and familiarity were public EV car shares, seeing and riding EVs in rideshares (Uber, Lyft, etc.) and having EVs on display at dealerships or malls. Learning about EVs, seeing them in person, and test-driving them, helps transform EVs from an abstract and sometimes foreign concept into a tangible one. This would help consumers realize EVs can compete with conventional vehicles by providing the same or better experience, quality and reliability.

Participants also discussed ideas to reduce financial burdens and improve logistics regarding charging. The following summarizes ideas about these concerns.

- **Bundling Services:** Costs and monetary incentives for those with EVs were discussed, such as bundling EVs and home solar, tax credits, discounted home electricity rates, lower registration fees for EVs and the removal of personal vehicle emissions tests for an EV.
- **Public Charging Availability:** Participants expressed that increasing public charging station availability so that consumers do not have to plan and seek out charging too far in advance could also allow for EVs to be considered more.

Overall, the most recurrent consumer theme was seeking a more streamlined EV education and information approach. A single website with the capability to compare vehicles and receive unbiased information, all in one location, with interactive features that are easy to understand, would benefit consumers.

The following are samples of program ideas described by participants. For a full list, please see the appendix to this report.

- Quoted by a focus group participant with the following characteristics: Gender: Male; Age: 45; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"If they set up a day where they promote it and make it a big thing, maybe have water or drinks, something inexpensive, and they're just saying come try out the car. Come test drive it. Have a bunch of them available. No pressure, ask all the questions you want. If they want to buy something, then that's an added advantage. Or, they just make a deal of it to promote it, push it, get people excited about it. Just have information specialists that can answer any question you want. I would go to something like that to check that out."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 23; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"I think that's one of the best ways to learn. You can't really do it word of mouth because I feel like families don't really know too much about it, unless you have a family member with an electric car, they can kind of refer something to you. But as of now, it's really just with advertising and the dealerships putting it out there when people are shopping for cars."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"We have to make it easier; you want people to use electric vehicles, then you shouldn't have to have a college education to figure out how it works. I just think everything is made too difficult and it doesn't have to be that way."

"I mean, unless it's out there and people touch it, see it, and feel it, it's not going to happen."

- Quoted by a focus group participant with the following characteristics: Gender: Female; Age: 33; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

"I feel like it should be affordable, and it should be marketed as affordable. We don't even really know the real price of all these vehicles. We're just assuming. I don't think that it's marketed to be affordable. So, when you think of electric cars, you think of the Teslas or the very expensive cars and the Elon Musks, but you don't know there's other brands, there's other affordable options."

Conclusion

This report supplements CSE's prior research, *Analysis of LMI CVRP Participation*, in which we examined the representation of LMI populations within CVRP.²¹ In this report, we identified the predominant barriers and preferred information sources voiced among various LMI demographics: county, ethnicity, race, age and household size.²² We highlighted solutions to problems and program ideas created by the LMI individuals facing barriers to adopting EVs. We conclude with recommendations based on our findings.

Findings

CSE's prior research concluded that several demographic groups are underrepresented within the LMI CVRP participants: those who are 21–29 and 30–39 in age, those who have less than a college education, those who rent their homes, those who identify as Hispanic and Latino, and those who identify as Black or African American or White or Caucasian.²³ When focusing specifically on LMI demographics underrepresented in CVRP, we found the following:

Cost and charging vary as primary concerns among underrepresented LMI demographics, but both are important across groups.

- Hispanic, Latino, Latina and Latinx individuals perceive costs to be the most relevant barriers, while others have more concerns about charging.
- Charging issues are the predominant barriers among Black or African American and White individuals.
- Ages up to 39 are most concerned about costs. Within ages 30-39, cost concerns are on par with charging concerns.
- Women are concerned about costs and discuss concerns about the range of EVs more predominantly than men.

All underrepresented LMI demographics prefer online outreach but also value in-person educational opportunities.

- Participants preferred online sources (e.g., detailed online reviews by consumers, online dealer information) to other traditional methods of outreach.
- Whether online or in-person, participants seek impartial sources of detailed information. They prefer reviews of various models, comparing and contrasting features without a bias toward one brand or another.
- Experiential learning, such as test drives and informational events where people can experience EVs first-hand, are highly valued; participants expressed that events would demystify EVs and provide more comfort for individuals to allow themselves to consider EVs.

²¹ Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). *Analysis of LMI CVRP Participation*.

²² Dwelling type and education level were analyzed in *Analysis of LMI CVRP Participation*. Those with college educations are most concerned about charging; those with less education are most concerned about costs. Dwellers of attached houses or townhomes are most concerned about charging issues; those in detached houses are most concerned about costs. Ibid.

²³ Ibid.

- Personal testimony is also important to this group, whether from personal contacts or online reviewers. Participants spoke of the value they find in talking with trusted mechanics and engaging in consumer reviews online.

We also focused on San Joaquin participants to provide insight regarding the expansion of CVRP Rebate Now into eight counties in the San Joaquin Valley in April 2021. We observed the following:

- **Charging concerns were most prevalent for San Joaquin participants.**
Of all barriers mentioned among residents of the county, charging comprised 42%. Much of the concern focused on inconvenience; for example, participants communicated a lack of charging stations, charging stations are too infrequent, and at-home charging is not easy for those who do not dwell in detached homes.
- **Cost concerns were less prevalent among San Joaquin participants.**
Of all barriers mentioned, cost concerns comprised 29% of mentions. The costs of EVs themselves and unknowns about the costs of charging were discussed most frequently.
- **Online resources were strongly preferred among San Joaquin participants.**
Online resources were most frequently mentioned at 44% of mentions of all resources discussed. Experiential events to better understand EVs first-hand were also of great interest.

Recommendations

As a result of both CSE's original *Analysis of LMI CVRP Participation*²⁴ and this supplemental report, we have determined that some demographics are underrepresented within CVRP and that barriers and preferences identified by various demographics differ. We recommend considering the following when evaluating marketing and outreach based on the findings discussed.

- We suggest communicating with demographics regarding their specific concerns in how they want to hear about them. Increasing awareness of the CVRP may be helpful in some cases, whereas addressing specific barriers identified by demographics in conjunction with utilities, communities and dealers may advance efforts to achieve equity within the program.
- Consider where outreach can be tailored to reflect focus group participants' preferred sources of information: integrated online sources with impartial, personal testimony. Examine opportunities for experiential learning about EVs, including non-pressured test drive events and opportunities to see EVs in person.

In summary, our research reflected that LMI individuals are primarily concerned about barriers regarding costs and charging. Some demographics within the LMI group may be more concerned about cost overcharging and vice versa, but both of these concerns were important to all demographics. Despite slight variances among barriers, LMI individuals agreed on their preferred communication channels: they prefer accessible, detailed information online with verification from impartial parties. They also highly valued experiential learning and, for example, were excited about community events in which they could experience EVs first-hand. We recommend considering these insights when evaluating CVRP marketing and outreach. Finding opportunities to communicate about demographics' specific barriers in the channels they prefer may ultimately aid in increasing equity within CVRP.

²⁴ Gartner, J., Cain, N. J., MacNeille, B., & McCormack, R. (2021). *Analysis of LMI CVRP Participation*.

Appendix: Program Ideas of Focus Group Participants

Table 16. Program ideas of focus group participants by category.

Program Idea	Quote	Participant Demographics
Accessibility	"We have to make it easier, you want people to use electric vehicles, then you shouldn't have to have a college education to figure out how it works. You should be able to do it as a teenager... know that this is a safe system, know where to go [to charge] and I just think everything is made too difficult and it doesn't have to be that way."	Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Accessibility / education	"...making things more understandable or more accessible for people to understand..."	Gender: Male; Age: 23; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Bundle EV with solar	"Everything that we do these days is bundled, right? Our entertainment is bundled. Everything is bundled. It would be great if electric cars are somehow bundled with other electric things that I would purchase within that same- the idea about solar panels, I think that's a great idea."	Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Bundle EV with solar in home	"It'd also be good that, when you buy an electric vehicle, they give you a system that would be solar-based, and you wouldn't have to use the electricity in your home. You wouldn't have to pay for it. When you buy it, they should put in a system to charge it."	Gender: Male; Age: 47; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Bundle EV with solar in home	"I'm thinking if I can purchase solar, so why don't you throw in an electric car with it? Allow me to pay \$5,000 for it since I had to pay to put all this money into it to keep it going to keep me involved. You are all pushing this solar for everybody to save on energy, so throw in an electric car for me or we can purchase at a certain price that's feasible for everybody."	Gender: Female; Age: 58; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

Charging at all gas stations	"Have them put them in all the gas stations, not just in some or in malls or Costcos. Let them be at Food 4 Less stores, or at any gas station in the corner."	Gender: Male; Age: 47; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
City to help with solar installation	"Well, maybe help us to put solar systems into our homes. Because it's very expensive to put solar energy in our homes. Plus, it's cheaper."	Gender: Male; Age: 41; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Community involvement	"I think being more open as a community in regards to wanting to transition over to electric vehicles, maybe emphasizing that more in the culture of the city, 'Hey, we're opening up these docking stations.' And being more vocal. Putting it on the shoulders of the city, maybe the like PG&E or your electricity provider. Them going out and taking the reins and paving the idea or the directions of where we want to be going would probably help. At least for me in that sense, like, hey- or they're actually opening up, it's more feasible for us to maybe not transition over to electric vehicles because now we don't have to wonder about what we're going to do and feel left out. Even if we don't have a docking station over at our house, we could fuel up over at Target or something. So, I think that definitely would help, just the community involvement of it."	Gender: Male; Age: 32; Language: English; Household: 4; Ethnicity: Hispanic, Latino, Latina, or Latinx; Race: Other Race; County: Shasta; Education: Some college/2-year college/technical school/associate degree; Residence: An attached house, a townhome, or similar
Community involvement	"Community charging, I think would be great. I think it's just more so making those things more available so that they're in all areas and not just in certain areas because if you see those charging stations then you know they're around, then maybe you would be more comfortable getting the car because you know you don't have to drive X amount of miles to be able to charge."	Gender: Female; Age: 23; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Dealership collaboration with Uber/Lyft	"I don't really take Uber and Lyft. But I can imagine that if it was a newer car and, you know, it was in conjunction with a dealership or whatever and promoting. I mean, you're in the car. You're like, this is a nice car. Because sometimes, you know, it's happened where I'm like, this is nice. But you don't really - It's not an everyday thing where you go into a dealership, or it's not very comfortable. But Uber and Lyft it's kind of like you're exposed to something you weren't exposed to before."	Gender: Female; Age: 34; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

Easier home charging	"The city government or the county government would, so then you would have a way of charging it at the right time and wake up in the morning and be ready to go. Right now everyone- you got to figure out your own, is it 120 volts or 220 volts, you've got to do it yourself and hire an electrician and it's not cool."	Gender: Male; Age: 52; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Education event	"Maybe have a once or twice a year where all the affordable or bracketed budget electric vehicles that are available to the public, maybe have a gathering or event where you gather people, walk them through it, answer their questions to reduce their fear about ownership of an electric vehicle, incentivize them with tax credits, educate them about what currently exists."	Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Education event / welcoming atmosphere to test drive EV	"Maybe you get to test drive different electric vehicles, I don't know. I mean, unless it's out there and people touch it and see it and feel it, it's not going to happen."	Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Eliminate cost of registration	"Maybe not having to pay the registration of the car every year. When you buy it new, they charge you, depending on the car, \$500 or \$600, and then, it goes down little by little every year."	Gender: Female; Age: 48; Language: Spanish; Household: 3; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
EV informational brochure mailed to house	"If anyone is itching to buy one of those vehicles, I think they could send a package in the mail with all the information. That'd be a good way."	Gender: Male; Age: 47; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
GPS with charging stations	"I need to charge if I had an all-electric vehicle so I have to know where's the next charging station, am I just going to rely on my smart phone? If I'm relying on my smartphone and I don't have a connection with my smartphone, I am lost. Also, it's- if you're driving and you have a navigation in your car, the navigation will give the little symbols for the gas stations but not necessarily the charging stations... It's kind of troublesome, it would be nice to have that information."	Gender: Male; Age: 52; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: White; County: Alameda; Education: Some graduate school/post-graduate degree; Residence: An attached house, a townhome, or similar

Incentivize dealerships	"...definitely incentivize the company or dealerships, which make more safe in electric cars. Just like they incentivize the customers for doing it. That way, they will try to promote it and these guys will try to purchase it."	Gender: Male; Age: 28; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Low-cost charging stations	"...put places in where you can go to charge your car, but maybe not for free. Because nowadays, nothing is free, but at least have it at a lower cost, do you know what I mean? If they normally charge \$40, let it cost \$20 or something like that."	Gender: Female; Age: 52; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
More advertising	"I don't see a lot of advertising for electric cars. I see Ford Tough and the Jeeps and things like that. But I don't see advertisements. And I think that it would be more in my mind if I saw it. Like, put a Super Bowl commercial up or something. I don't watch the Super Bowl, but I watch the commercials."	Gender: Female; Age: 48; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
More advertising	"And even with commercials, if you see an electric car, of course, they tell you it's an electric car, but they don't say new electric car charges in half the time, new electric car can go double the distance. But if you see a new 2021 Audi, it's like, oh, 40 miles per gallon, six turbo engine, blah, blah, blah, blah. You get those details in a commercial, you get to find out before you even head to the dealership, like, 'Hey, I thought this detail was cool. I'm heading there right now.'" "I think that's one of the best ways to learn. You can't really do it work of mouth because I feel like families don't really know too much about it, unless you have a family member with an electric car, they can kind of refer something to you. But as of now it's really just with advertising. It's really just with the dealerships putting it out there when people are shopping for cars."	Gender: Female; Age: 23; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
More advertising	"So gracefully sprinkled in advertisements, so to speak, so as you're watching something. At least for me personally, someone that's naturally interested in wanting to purchase electric, I'm more inclined to pay attention. And if something catches my eye or my ear in an advertisement, then I'm more inclined to actually take the next step and go look into it, look it up and do some more research."	Gender: Male; Age: 32; Language: English; Household: 4; Ethnicity: Hispanic, Latino, Latina, or Latinx; Race: Other Race; County: Shasta; Education: Some college/2-year college/technical school/associate degree; Residence: An attached house, a townhome, or similar

More advertising	"I feel like it should be affordable and it should be marketed affordable. We don't even really know the real price of all these vehicles. We're just assuming. And I don't think that it's marketed to be affordable. So when you think of electric cars, you think of the Teslas or the very expensive cars and the Elon Musks, but you don't know there's other brands, there's other affordable options."	Gender: Female; Age: 33; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
More advertising	"Maybe like that, or in commercials, you can see how much you would save or how the car works. Things like that. The incentives that you guys were talking about."	Gender: Female; Age: 39; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
More advertising	"I think also putting stuff on social media platforms. There's been so many ads that have come up on Facebook of stuff that I didn't even know that I wanted. I think there's an opportunity to really be able to educate people through the campaigns."	Gender: Female; Age: 53; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
More advertising	"Yeah, I was going to say the same thing... Social media and like, for example, sometimes when I want to purchase a round-trip, there's always a little thing like a chat so you can ask questions. It can be the same. They can do the same too. So we can add, like, frequent asked questions. And somebody from the manufacturer can give us all the information that we need. I've never seen an ad on social media. But that would be nice too. Because a lot of people don't know about it like myself. About electric cars."	Gender: Male; Age: 48; Language: English; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
More advertising	"I wanted to say that television commercials would be great to give us bits of information. Give us 20 seconds and amaze us."	Gender: Female; Age: 54; Language: English; Household: 2; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Pre-purchase EV consultations	"If the actual dealer had vehicle, like, consultations where if before you even took a step onto the lot you can go and get like a small class that they have. And they can just get you more familiar with the vehicle before you choose to purchase it."	Gender: Male; Age: 38; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

Public charging	"I like the idea of public charging stations. I think that's a great idea." "I mean, if they had them at parks, any shopping centers, shopping malls. I don't know who pays for the electricity when you go to the grocery store and they have those charging stations. I don't know if that's paid for by the grocery stores or who eats the cost."	Gender: Female; Age: 53; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Public charging at workplace	"Yeah, that's a great idea, like, the public charging stations. Because, like I said, you can drop your car off at Walmart and, you know, go do an eight-hour shift and come back and it'll be fully charged. That way you don't use up that much of your electricity. Now, when they start saying that you have to pay to use these store chargers, then it might get kind of pricey."	Gender: Male; Age: 38; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Public charging at workplace	"I think that- I mean, I don't drive a vehicle, like I said, my personal vehicle to work. But if you were with a large enough employer if they were able to provide those types of charging stations as part of their, you know, initiatives or something like that, that would be awesome."	Gender: Male; Age: 48; Language: English; Household: 5; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Public charging stations / more charging stations	"If you want people to use electric vehicles, then there should be charging stations throughout the community. Just like gas stations are pretty much on every corner, that's the way it should be. There's just too much unnecessary thinking."	Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Public EV sharing system	"I know where I live in Southern California it doesn't exist but in Seattle it's been a decade or more where you don't have to own a vehicle, you just jump in. The cars are identified, they're branded, just hop in a car on the side of the street that's part of this program and you drive it to wherever you want and you just leave it there. There's no checking in."	Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Public EV sharing system	"You know how a lot of cities have the bike sharing programs? That would be cool to do with and then if it's with the city there's designated drop offs then they would always be charging when they're not being used. That would be cool to do with electric vehicles maybe."	Gender: Male; Age: 23; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Recycling / battery information	"I heard this maybe it's an urban legend, but to create the battery that's inside a Prius, I think it's called lithium-ion phosphate. It takes 22,000 gallons of freshwater to do that process. So, it makes me feel kind of guilty."	Gender: Male; Age: 52; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

Reduced electricity rate	"I also love the idea of the reduced electricity rate if you show that you have an electric car."	Gender: Female; Age: 53; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Reduced electricity rate	"...10% off your bill with proof or purchase per month..."	Gender: Male; Age: 38; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Reduced maintenance costs	"Maybe like I know it's not going to be a whole lot, especially while the pandemic is going on. But like a certain percentage off, like, maintenance every couple of months or whatever maintenance you have to uphold on the car. Just a certain percentage off every miles or however that goes."	Gender: Male; Age: 38; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Reduced maintenance costs	"...when you buy the car, they offer a free maintenance package so that it kind of takes the fear away from if something breaks down. Because now you have to pay more if you're buying a car. But maybe if they gave it for free as an incentive, that would make a big difference."	Gender: Female; Age: 53; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Remove requirement for emissions test	"They also require you to do the emissions test on the car. Lowering it for me, or not having to do that, would be good. If I don't have to do the emissions test, that would be better for me. If they'd give you credit or something for having an electric car, where you don't have to do that emissions test, that'd be a good thing, in my opinion."	Gender: Female; Age: 48; Language: Spanish; Household: 3; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Single source/place for all EV information	"A culmination of the electric companies, the dealers, everybody being able to advertise the rebates together or get them in- You know, find out about all the possible ones in one source. Not having to go try and find information from multiple places."	Gender: Female; Age: 54; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina, or Latinx; Race: White; County: San Joaquin; Education: College graduate; Residence: An apartment or condo
Single source/place for all EV information	"...and also unfortunately, not all the dealerships know about all the programs. And that's unfortunate. And they're not signed up to do those programs."	Gender: Female; Age: 34; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

Single source/place for all EV information	"But electricity providers are one of the biggest campaign managers because they have resources, they have huge customer base. They can touch their customer base saying, 'Hey, this is what is happening. This is what is available for you. Are you interested? If you're interested, we have more information on our own website.' You don't need to go anywhere else. It takes you on their own website."	Gender: Male; Age: 28; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Single source/place for all EV information	"This experience has showed me there's a lot I don't know about electric vehicles, so it's like, yeah, it would help to have all the information in one place and that's reliable."	Gender: Male; Age: 23; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Single source/place for all EV information	"Most organically access it is just through a website, an official kind of website where you can compare and stuff and you can compare between electric vehicles, but then also compare between that and another type of car that you were looking at. And then, you can also factor in kind of the energy stuff."	Gender: Male; Age: 23; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Single source/place for all EV information	"Better if it was like a centralized thing because there's different brands. So then, you can be more confident in the information and then it would also be cool if you could compare your carbon footprint between two cars... test things from different companies and stuff that are less biased."	Gender: Male; Age: 23; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Single source/place for all EV information	"When you go shopping for a car, it's just huge sheet of paper and it's tiny, tiny little print. The only thing you see is the cost of the car. And there's some data there that could be standardized, but it's not set up in an easily recognized format so that your eye sees, 'OK, that's what I'm looking for.' This is one of the other reasons why I don't go and physically speak to salespeople because the information you want is not there. It's like you have to dig for it. And who's got the energy to dig that far?"	Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Tax incentives	"Tax incentive, maybe, like an anti-carbon tax incentive. I know that some companies get taxed on their carbon emissions. So, maybe if like we do our part, we might have something in regard of like tax- What's the word I'm looking for? A credit, a tax credit, or something like that if we have a solar vehicle."	Gender: Male; Age: 32; Language: English; Household: 4; Ethnicity: Hispanic, Latino, Latina, or Latinx; Race: Other Race; County: Shasta; Education: Some college/2-year college/technical school/associate degree; Residence: An attached house, a townhome, or similar

Tax incentives	"Maybe something lower our property taxes or give you credit on your taxes for having the car. Something like that."	Gender: Female; Age: 48; Language: Spanish; Household: 3; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
TikTok	"TikTok. I watch TikTok a lot. So, if they put it on TikTok, I'd pay attention."	Gender: Female; Age: 48; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Timed home chargers	"A city provided charger that will plug into your wall and turn on and start charging your car at the time that it's cheapest for example between 1am and 5am or something like that ... You would have a way of charging it at the right time and wake up in the morning and be ready to go."	Gender: Male; Age: 52; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Utility provider incentives	"In the city of Riverside and the utility there, every summer to incentivize people to plant trees in order to reduce to cost of their need for electricity because it cools down the homes, every summer people are given a voucher to go down to the nearest nursery, pick up a free tree. My brother, every big tree he's planted has been a free tree from the utility. Obviously, electric vehicles are a little bit more expensive than trees but..."	Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Welcoming atmosphere to see EV	"A lot of times, they'll call you to tell you about it and all of that. Another way would be taking you to see the car, and without any commitment or anything, you could look at it and then decide if you want to buy it or not."	Gender: Female; Age: 37; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Welcoming atmosphere to see EV	"It'd be nice if they put an electric car on display and let you see it. Just let us see them more."	Gender: Male; Age: 41; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Welcoming atmosphere to see EV	"You know what it reminded me of? When they used to put them in the mall. Before, they used to put cars in the middle, and then, you could compare the new features of the cars."	Gender: Female; Age: 39; Language: Spanish; Household: 4; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

Welcoming atmosphere to test drive EV	"But if they set up a day where they promote it and make it a big thing, maybe have water or drinks, something inexpensive, and they're just saying come try out the car. Come test drive it. Have a bunch of them available. No pressure, ask all the questions you want. No one's going to try to pressure them or anything. If they want to buy something, then that's an added advantage. Or they just make a deal of it to promote it, push it, get people excited about it. And just have information specialists that can answer any question you want. I would go to something like that to check that out. A little promotion like that. I would do it once a month if I was a dealership."	Gender: Male; Age: 45; Language: English; Household: 1; Ethnicity: Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Welcoming atmosphere to test drive EV	"I do agree if they did have those ones- the dealerships that wanted to take part and wanted to show that they were part of this program to have that no hassle type of day. That definitely would work. And to get an idea of just what the car looks like inside and how it feels. And I know they have to be reasonable. Like, you can't just have 500 people show up and want to test drive all these cars on the lot. But if there were some that even the state, you know, worked side-by-side with. Or even had one at a state level where there were cars out of Calxico or something. And, hey, if you want to test drive, here we go."	Gender: Female; Age: 41; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina, or Latinx; Race: White; County: San Joaquin; Education: College graduate; Residence: An attached house, a townhome, or similar
Welcoming atmosphere to test drive EV	"I would think it would be much easier to have multiple manufacturers in the same place as opposed to a dealer who only focuses on their brand. So it would be much easier to compare across brands in something like that where there's multiple dealers or multiple manufacturers in the same place."	Gender: Female; Age: 54; Language: English; Household: 1; Ethnicity: Not Hispanic, Latino, Latina, or Latinx; Race: White; County: San Joaquin; Education: College graduate; Residence: An apartment or condo
Welcoming atmosphere to test drive EV	"I was thinking is maybe a dealership, a large well-known dealership here in Fresno could host like an informational event, have a Tesla or an electric vehicle, and people could get in it, they could see what it's like inside, ask questions, and just really get honest answers from the manufacturer versus a salesman. Just a dealership that would be willing to play host for something like that."	Gender: Male; Age: 42; Language: English; Household: 2; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Welcoming atmosphere to test drive EV	"Where you're free to ask whatever questions it is that you have. And, you know, something just- You know, just the introduction to, like, a test drive to where all of your questions are ironed out, they show you how to start it, and just get you more familiar with the vehicle before you even test drive it."	Gender: Male; Age: 38; Language: English; Household: 4; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house

Welcoming atmosphere to test drive EV	"Set up programs that were already based in existing infrastructure to allow people to essentially test drive at no cost to them so that they become familiar, so that they realize it's just a car. It's just a different way of getting energy into that car... I think you just have to get people used to the idea in order to switch over."	Gender: Female; Age: 49; Language: English; Household: 5; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house
Welcoming atmosphere to test drive EV	"I would definitely love to test drive one. That sounds wonderful. I would love to."	Gender: Female; Age: 58; Language: English; Household: 3; Ethnicity: Not Hispanic, Latino, Latina or Latinx; Race: Other Race; County: San Joaquin; Education: College graduate; Residence: A detached house



As a mission-driven nonprofit organization, CSE works with energy policymakers, regulators, public agencies and businesses as an expert implementation partner and trusted information resource. Together, we are the catalysts for sustainable energy market development and transformation.