

# ILLUMINOLOGY

THE CITY OF  
**COLUMBUS**  
ANDREW J. GINTHER, MAYOR



## **Research With Low-to-Moderate Income Individuals:**

Understanding Travel Patterns/Barriers and Exploring Interest in Car-Sharing Programs and Electric Vehicles

December 2020

# ENGAGEMENT GOALS AND RESEARCH METHODS OVERVIEW



## Engagement Goals

### Within targeted communities in Columbus, Ohio, understand:

- What forms of transportation residents use and what barriers they face
- Residents' reactions to a car-sharing concept
- Residents' reactions to electric vehicles (EVs)



## Research Methods - Qualitative Research

- Fifty one-on-one interviews were conducted with Columbus, Ohio residents between November 9th and December 9<sup>th</sup>, 2020. Most of these interviews were conducted via phone, although a few were conducted over video.
- The vast majority of participants were recruited by screeners distributed by local organizations that work with low-to-moderate income communities (IMPACT, JFS, The Human Service Chamber, MORPC, and OSU Extension). A private sector recruiting partner recruited the remainder of the participants.
- All participants were low-to-moderate income individuals, per the Fiscal Year 2020 Ohio Housing and Urban Development Fair Market Rate limits.\*
- The next slide displays a demographic breakdown of participants.

Many thanks to the organizations that helped recruit participants!



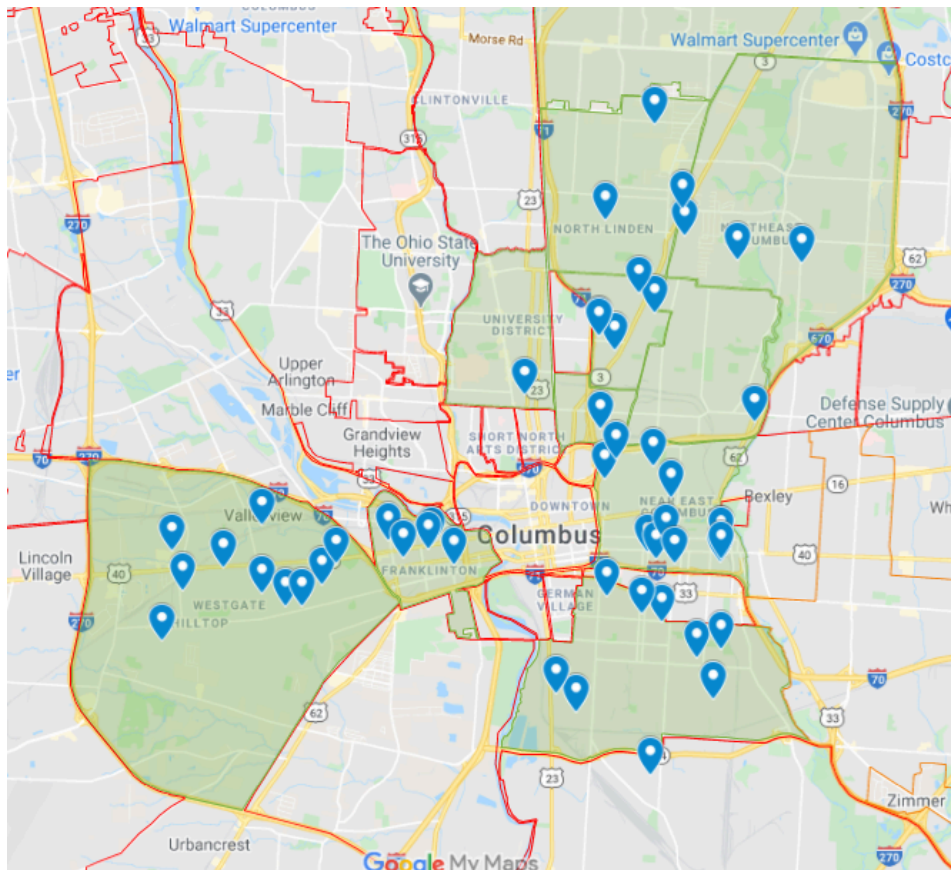
\*[www.huduser.gov/portal/datasets/il/il2020/2020summary.odn](http://www.huduser.gov/portal/datasets/il/il2020/2020summary.odn)

# PARTICIPANT BREAKDOWN



A demographic overview of the 50 Columbus residents who participated in an interview is shown below.

Participants' residences were distributed nearly equally throughout the southwest, southeast, and northeast quadrants of Columbus. The map below displays their addresses.



## Age

40 or younger: 54%  
Over 40: 46%

## Gender

Female: 52%  
Male: 46%  
Transgender: 2%

## Race/ethnicity:

White only: 30%  
Not white only: 70%

## Own/lease a usable vehicle:

No: 56%  
Yes: 44%

No notable differences in responses occurred based on location, age, gender, or race/ethnicity.

This report clearly identifies when responses differed based on whether participants own/lease a vehicle.

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- Barriers of Different Transportation Modes
- Vehicle Owning/Leasing: Current and Future

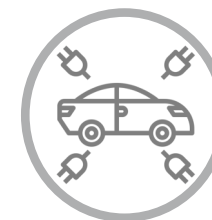
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**An opportunity exists** to help eliminate or reduce transportation barriers among low-to-moderate income Columbus residents.

**Among low-to-moderate income residents in Columbus, those who don't own vehicles tend to take COTA buses or get rides from family members or friends as their primary forms of transportation.**

**Low-to-moderate income individuals who don't own or lease vehicles face several transportation challenges: transportation can be time-consuming, costly, or unreliable.**

- Buses sometimes require a long wait to arrive, require long rides or many transfers, or don't provide service to certain areas or at certain times.
- Relying on friends or family members for rides puts the rider at the mercy of the individual providing the ride.
- Using ride-hailing services such as Uber, Lyft, or taxis can be expensive.

## KEY FINDINGS AND RECOMMENDATIONS



*Car-sharing programs might fill transportation needs, especially among low-to-moderate income residents who don't own or lease usable vehicles.*

The current research suggests that *additional research will be beneficial:*

- **targeted to residents who don't own or lease usable vehicles**, as they are more interested and more in need of this type of program
- **exploring reactions to program details and logistics**, in order to address concerns that arose

**Most participants were unaware of what car-sharing programs are; about half of them would be interested in using such a concept. Those without usable vehicles are more interested than those with usable vehicles.**

**Those without usable vehicles think such a program could eliminate or reduce many of the transportation barriers they face, such as:**

- Difficulty traveling to certain areas (especially those not serviced by buses)
- Difficulty arriving at locations quickly or at certain times
- Inconvenience or discomfort experienced while traveling

**Those with usable vehicles like that the program could help them in situations when their vehicles are not available.**

**A majority of participants have the technology needed to use an app and would be open to using an app to access the program. However, participants are concerned about the cost of the program and other details about how the program would work.**

## KEY FINDINGS AND RECOMMENDATIONS



### **Relatively few low-to-moderate income individuals are likely to seriously consider purchasing EVs:**

*In terms of owning or leasing, they appreciate the savings on gas and maintenance, but the reality is that the up-front costs of the vehicles are not in the price range they're considering for purchases (in the near future, at least) and many think they would have difficulty charging vehicles.*

*In terms of using EVs as part of a car-sharing program, some low-to-moderate income individuals are interested and excited about this idea, but others prefer traditional gas-powered vehicles.*

### **Although most participants are familiar with the concept of electric vehicles generally, many of them are unaware of details such as how they are charged.**

- Many don't understand how charging works.
- Many express a concern or worry about running out of charge.

### **Few participants are very or extremely interested in owning or leasing an EV.**

- Although participants like the idea of reduced costs for gas and maintenance as well as benefitting the environment, ultimately they need vehicles that will fit their budgets.
- In addition, few participants feel that charging the vehicle at home would be easy.





# TRANSPORTATION MODES AND BARRIERS

- Transportation Modes Used
- Barriers of Different Transportation Modes
- Vehicle Owning/Leasing: Current and Future



## TRANSPORTATION OVERVIEW

About half of the participants have usable vehicles and about half do not. Among those with usable vehicles, driving those vehicles tends to be the primary form of transportation. **Among those without vehicles, they usually take the bus or get rides from friends or family members.** A few of them primarily use Uber/Lyft or walk.

The **main transportation barriers** are faced by those without vehicles, who either **cannot find transportation to certain areas** at all, or sometimes have **unreliable, time-consuming, or otherwise inconvenient transportation.**

Most participants who don't own or lease a vehicle **can't afford** to do so, although a few of them don't have a need or don't prefer to drive.

Those who are saving for a vehicle are looking for inexpensive options. The process they generally use for saving is setting aside money as they can; if **programs exist to help residents save for vehicles, they would be interested** in learning more about those.



“ And it's not uncommon to miss your bus. It's not uncommon for your bus to be late. So I kind of like to leave when I'm ready to leave and I like to come back when I'm ready to come back. I don't know, it could be a control issue or - I just like to control my time. It's valuable to me.

“ (When getting rides from others) Sometimes you have to abide by their schedule. You may not go directly where you want to go first. You may have to make unsolicited or unscheduled stops.

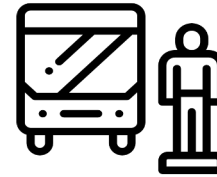
# PRIMARY MODES OF TRANSPORTATION

Most participants with a usable vehicle drive their own vehicle. Those without a usable vehicle are most likely to ride COTA buses as a primary form of transportation.\*



**44%**

Drive their own vehicle



**34%**

Ride COTA buses

Less common primary forms of transportation include getting rides from friends or family members, walking, or taking an Uber, Lyft, or taxi.



**16%**

Get a ride from someone they know



**8%**

Walk



**6%**

Take an Uber, Lyft, or taxi

\*Percentages total to greater than 100% because participants may have more than one primary mode of transportation.

## PRIMARY MODES OF TRANSPORTATION - BARRIERS

The main transportation **barriers** are...



...the cost of gas and maintenance, and dealing with traffic and construction for those who drive their own vehicles.



...limited access to certain locations (at all, or at particular times), needing to travel far to the stops or waiting at the stops, experiencing long travel durations, or finding the experience uncomfortable for those who take COTA buses.



...the need to rely on others for those who get rides from friends or family members.



...discomfort, danger, and time for those who walk.



...expense for those who take Uber, Lyft, or taxis.



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**Participants dislike that there are a lot of costs associated with driving their own vehicle and they dislike dealing with traffic.**

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### Costs

- “ Gas. It adds up.
- “ Gas. Gas prices are extremely high...Yes. I usually spend a good \$80-\$100 a week.
- “ Well, I would say probably, you know what I mean, the fuel costs, and insurance, and the maintenance.
- “ Having to pay for my own gas, knowing I have to keep maintenance up on my car, paying insurance. That's all.

### Traffic

- “ Dealing with sometimes very aggressive traffic.
- “ I hate putting gas in there. I hate traffic, when it's traffic jams or a lot of traffic, and a lot of people, they drive kind of crazy.

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**Participants dislike that the bus is crowded and there may be rude people; it's difficult to travel with bags and children.**

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### **It's uncomfortable**

- “ Sometimes you get on [the bus], hygiene, smells and stuff like that. And the risk of maybe having bed bugs or something like that or losing something on the bus because you're not concentrating or you're trying to not miss your stop or whatever, ...But I'm just cautious when it comes to the bus because there's a lot of people rubbing up against you and hygiene as well.
- “ It can get crowded and people are loud...Sometimes people are really, really rude to the driver and I feel bad.
- “ Well, like say you're going to the grocery store, getting on the - and I have done it, I've done it a million times, getting on the COTA bus with groceries is inconvenient, let's face it. And it doesn't have anything to do with the stops or anything like that, it's just handling all those bags, getting on the bus and then getting them off the bus. The bus stop is close to my house, and the bus stop is close to Kroger, but it's just a lot to handle bags.
- “ They don't like - I have three kids so it's hard to fit on the back of the bus and there's a lot of people. And where the handicap sit, they don't want anybody just sitting right there in the aisle. So I try not to make a problem when I get on the bus. I don't want to be in anybody's way with my kids. It would be easy to catch the bus if I could just hop on with them three. But it's like up in the way of other people.



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**Participants have issues with the buses not running frequently enough and not being on schedule.**

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### **Would like the bus to run more frequently and be on schedule**

- “ [I'd like to see buses come] a little bit more frequent, like instead of just the rush hour, because...it'd be nice to not have to be at work super early, just to make sure I got there.
- “ A couple of things there, there's the infrequency of some of the routes that I am known to take. One route runs once an hour, which is somewhat inconvenient. Again, due to COVID cutbacks, one of my other favorite routes has been temporarily suspended entirely.
- “ And it's not uncommon to miss your bus. It's not uncommon for your bus to be late. So I kind of like to leave when I'm ready to leave and I like to come back when I'm ready to come back. I don't know, it could be a control issue or - I just like to control my time. It's valuable to me. And that's pretty much that.
- “ Although they've improved since I was a child, and used to ride the bus, I'll have to say that their on-time performance sometimes can leave me scratching my head. One of my buses is regularly five minutes late. Although once in a while they'll throw me a curve ball and show up early just as I'm trying to adjust for the time.
- “ Simply because usually where I need to go to is closer proximity and it's just easiest to walk there instead of standing and waiting for the bus. So, sometimes if I don't catch the bus at the right time, I could be standing there for almost an hour or if the bus doesn't come sometimes that could be over an hour.



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**Participants feel that they can't easily access some destinations by taking the bus.**

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### **Difficulty getting to some destinations**

- “ I'd like to be able to go to the zoo anytime except during the summer. Our Columbus zoo is located just outside of the city limits. Now, our COTA bus service does run up there during the summer times, but they cut it off early in the evening and, of course, through the fall and winter. Right now, they've got holiday lights going on, which I can't go up and see, because there's no service that goes up there.
- “ Where I want to go it doesn't really go where - they've adjusted a lot of their stops, so they're only running like so often now. So most of the places that I would use the bus for it only goes there like maybe one time a day instead of previous four times a day.
- “ But in Columbus, the bus system is terrible. It doesn't run that much, or it don't go - it don't go all over the whole city...my problem was getting to work...the bus that I had to catch, it literally went there like once every 45 minutes or something like that, or every hour. I don't know how the bus that ran, but it was real bad.

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**Participants dislike waiting for the bus, especially when it's cold out.**

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### Waiting for the bus

- “ Well, kind of, the main reason is it kind of, you have to wait on the bus long and if you don't have a schedule, you be standing out there long, half hour, 15 minutes or so. And then, when it gets cold. I did that years ago. It's real tough, standing out there in the cold waiting for a COTA bus.
- “ Well, waiting at the bus stop during inclement weather. It's usually really cold and if there's snow on the ground, it's just not a pleasant situation..
- “ The fact, its restrictions on how many people get off, because sometimes I have to wait for the next bus just because there's too many people on the bus.
- “ Just sometimes just having to wait.

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**Participants dislike that the bus stops aren't close enough to the destinations or taking the bus takes too long.**

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### **Stops aren't close enough to destinations**

- “ And I don't like that there aren't enough stops along the route and that's pre COVID and during COVID...When I go to my one, my doctor appointments, I have to walk almost a mile from the bus stop to get there.
- “ Sometimes it doesn't take you close to your appointments, or work. Like for my ENT appointments, I would have to walk a few blocks to get to the doctor's office. Even work people have to walk a long way just to get there.
- “ If the COTA would come by my house and pick me up, I might take it more often still. But the fact that I would have to walk blocks to get to a spot from where I am at right now is not very convenient for me, per say.

### **Takes too long**

- “ If I was to go somewhere on the bus, it would probably take me an hour to two hours to get there when it could be up the street.
- “ If I have a last minute appointment pop up that I have to be there in like an hour from the time the doctor calls me, I know the bus isn't going to get me there on time.
- “ Well, growing up, I was raised by my grandmother, we rode the COTA bus constantly. And it just felt like it took all day to do one thing. And so it just kind of turned me off of them.

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**Participants dislike that getting rides from others is dependent on others' schedules and something is often wanted in return.**

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## **Dependent on someone else's schedule**

- “ ...if you're trying to get a ride from a friend, you never know if they're gonna show up or not.
- “ Sometimes you have to abide by their schedule. You may not go directly where you want to go first. You may have to make unsolicited or unscheduled stops.
- “ Sometimes, it's not convenient for the person that I'm getting a ride from.
- “ Well, sometimes thinking about the schedules or things they do when they're rushing you. Not necessarily saying that they rush you, but you know, I think you can tell by people's behavior or whatever.

## **Not free**

- “ Because a lot of people that I know you ask them for rides, it's like, oh, well you got gas money or they want something in return, which is I understand that, but I don't always have it like that.
- “ My sister lives with me for free, and she throws a fit and charges me...for gas...just to give me a ride.
- “ When my car was running, I used to take people all around, you know?...I didn't charge anybody. But nowadays it's hard...either I buy a couple Monsters or give them five bucks for gas or whatever.



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**Participants dislike that taxis, Uber, and Lyft are expensive.**

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### Expensive

- “ Depending how far I have to go, how the price may go up high, like going further out further places or trying to find someone, whether it's a service to get my hair done or something like that or it could be an appointment or something like that, and it'd be far, far out.
- “ The cab, they want to charge you an arm and a leg to go from this part of town to the other side of town.
- “ Ubers and Lyfts are more expensive than just putting a couple dollars on my gas tank and going to the same location.
- “ Just expensive. It's very pricey. Like if you add up every day, needing to call a Lyft or an Uber, or something. It's just real pricey.

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**Participants dislike that walking can be uncomfortable, dangerous, and time-consuming.**

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### **Uncomfortable**

- “ When it's cold or raining, that's gross...Yes, inclement weather is the worst when I'm walking where I need to get to.
- “ I'm not the healthiest person, and especially in the summer, if I'm walking and sweating, just overheating, then my breathing is erratic. I can do better in the cooler weather like it is now, but like I said, I'm not healthy

### **Dangerous**

- “ Well, right now walking over on the west side of Columbus is kind of trashy and people have things thrown around, little kids and things shouldn't be seeing. That's what bothers me is dirty.
- “ People, even though I'm walking, people drive crazy...they still cutting over into the crosswalk and everything. You have to kind of be careful walking in the city, where I'm living at anyway.

### **Time-consuming**

- “ That it takes a long time to get there so I have to get up very early because I got to go with three kids with me.

## CURRENT VEHICLES OWNED



Participants own/lease different kinds of vehicles- mostly sedans, some larger SUVs/trucks/vans, and a few compact cars. Of those who mentioned model year, they range from 2003-2014.

Many of the vehicles owned/leased include:

**SUVs:** 2005 and 2014 (general), Infinity FX, Durango 2005, and a Yukon XL 2008

**Sedans:** Cadillac, 2008 Avenger, Impala, Charger, Elantra, 2006 Accord, 2003 Grand Marquis, 2014 Altima, 2004 Charger, 2006 Elantra, and Accord (general)

**Compact cars:** Focus, Corolla, and Civic

**Trucks:** Ram 1500, F-150

**Vans/minivans:** Uplander

Participants obtained vehicles because they wanted or needed them for general transportation (at times because their old car was dying/died and needed to be replaced), needed them for driving family/kids around, or purchased them for business purposes.

Most respondents paid between \$1,200-\$6,000 for their vehicle, usually in cash. A few paid between \$8,000-\$16,000, and those purchases were usually financed.

## DESIRE FOR NEW OR DIFFERENT VEHICLE



### Currently attempting to save for a vehicle

About **half of participants who currently own or lease a vehicle are trying to save** for a different vehicle - many of these participants would like to replace their current vehicle with a newer, bigger, or more reliable vehicle.

About **half of participants who don't currently own or lease a vehicle are trying to save a vehicle** - among those who aren't currently saving, many of them can't afford to save for a vehicle.

### How they are saving for a vehicle

Those who are saving are **putting money aside as they can**. None of the participants were aware of any programs to help them save for a vehicle, but a few of them mentioned that they would be interested in such programs.

In terms of what they're looking for, none of the participants mentioned definitely planning on a new vehicle as opposed to a used vehicle. **They're looking for vehicles in lower price ranges**, mostly around the \$2,000-\$6,000 range.

## DESIRE FOR NEW OR DIFFERENT VEHICLE



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**Many participants who aren't currently saving for a vehicle simply can't afford it.**

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### **Owning or leasing a vehicle is expensive**

- “ Money. It's ultimately just money. If I was made out of it, I would be able to pay for the insurance, pay for a new car, pay for the license, all of it.
- “ I'm not working at all. I have no income whatsoever. I'm still fighting for unemployment. I don't even have a dollar to my name right now. I'm two months behind on rent, which is why I went to Impact. I have no money whatsoever. No, a vehicle is the least of my concern at the moment.
- “ If I possibly could I would but no not at this time, no...Just not in the position to get one right now, but yes I would if I could. I can't afford no vehicle right now because I ain't got no plans on driving because it's the cost of having a vehicle is just too much.
- “ I don't really have the money for that.
- “ At the present I'm only getting \$209.18 every two weeks through workman's comp. I need to get back to work. That's the goal.

A close-up photograph of a person's hand on a steering wheel, overlaid with a semi-transparent blue filter. The steering wheel has a Toyota logo. The dashboard and center console are visible in the background.

## CAR-SHARING PROGRAMS

- Current Knowledge about Car-Sharing Programs
- Interest in Car-Sharing Programs



Most participants were unfamiliar with car-sharing programs.

After learning more about this program, **about half of participants were interested in using car-sharing programs**. They like that it could allow them to **travel more independently**, with more **comfort and efficiency**, and require less money and effort than keeping up a vehicle (for people without cars), or because **people with working cars could use it if theirs broke down**.

The least interested participants typically had **no transportation needs that were not covered** by using their own vehicle, thought car-sharing was more of a hassle than their typical form of transportation, or didn't feel comfortable using a shared vehicle for various reasons.

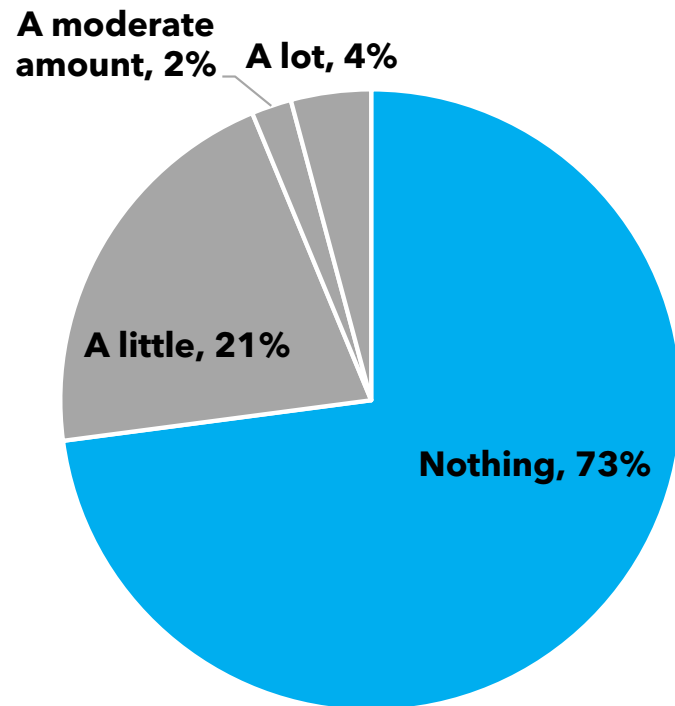
Some participants said they would be interested **depending on cost**, accessibility of vehicles in their area, and other factors.



“ I might be open to it, because it beats my nerves being stressed, waiting on my daughter to take me places. And then it beats the heck out of trying to carry groceries and stuff when you're walking.



## CAR-SHARING KNOWLEDGE



When asked how much they know about car-sharing programs, **most participants stated they knew nothing at all.** From the term alone, they often misunderstood it to mean ride-hailing (e.g., Uber), ride-sharing/carpooling, or borrowing a person's vehicle.

- “ I don't even know what car sharing really is. Is that like a Lyft?
- “ Like between who's in your household you share it with them.
- “ I would think that it means that you take turns driving. Or you travel with another person that's gonna be going to the same place.

Note: Some participants said they knew “a lot,” “a moderate amount,” or “a little,” but when they described what they knew they had misconceptions about what a car-sharing program actually was.

## FAMILIARITY WITH CAR-SHARING

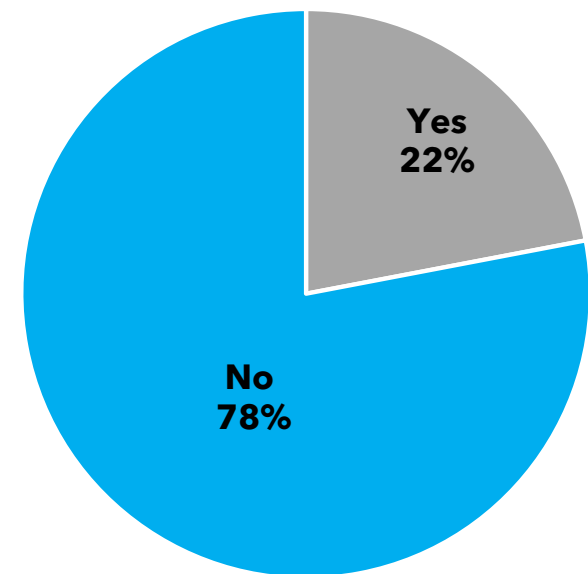
To ensure each participant was able to evaluate the same concept, the following text was shared during the interview. After sharing this definition, participants were then asked if they had heard of this concept before.

*Car-sharing programs allow different individuals to use (or share) a vehicle for a variety of purposes, whether that is picking up groceries, going to a doctor's appointment, or driving to visit a friend. Typically, individuals rent the vehicle for a certain number of hours or for an entire day.*

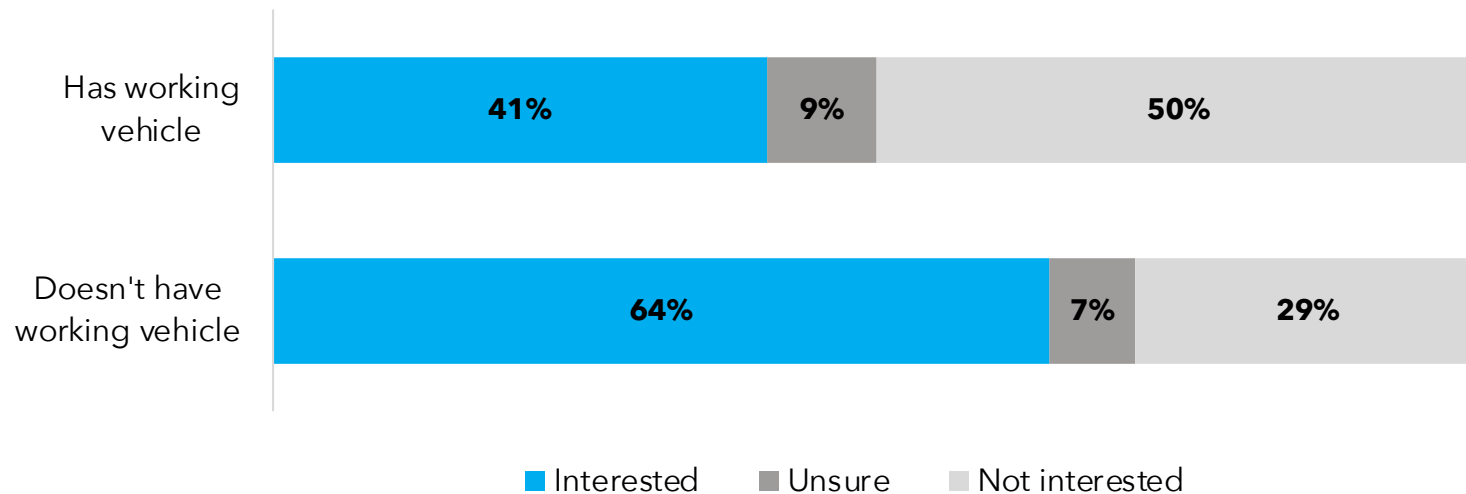
*There are a number of benefits to car-sharing programs:*

- Car-sharing saves you money, such as gas, insurance, parking, and maintenance. Moreover, you can rent a vehicle without actually owning one!*
- There is a lot of flexibility in car-sharing – you can often rent a vehicle by the hour or for a day*
- Car-sharing often lowers the number of vehicles on the road, reducing greenhouse gas emissions which improves our health and environment for us and future generations*

**Few participants have heard of a program like this before.**



## INTEREST IN USING CAR-SHARING



Overall, about half of participants would be interested in using car-sharing programs.

Note that those who don't have working vehicles are more interested than those with working vehicles.

Those **without working vehicles** are interested in the idea of **independence** and **self-sufficiency**, gaining **comfort**, and improving **efficiency** of their travel.

Those **with working vehicles** are primarily interested in using car-sharing vehicles as **backup vehicles** for a variety of reasons (such as if their own vehicles break down).

## WHY INTERESTED IN CAR-SHARING (THOSE WITHOUT CARS)

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**Participants without cars liked that car-sharing could preserve their independence, make trips more efficient, and could allow them to put off buying a car.**

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### **More self-sufficient**

- “ Not having to worry about other people or begging anybody and then on top of that other people can still use it too.
- “ Again, relying on somebody is a hassle. So, if I had my own way, I could do what I wanted, go where I wanted, and wouldn't have to worry about somebody waiting on me.

### **More efficient**

- “ That I could get off work, don't have to wait for the bus, [and then I don't have to] stop every stop, and have the bus pick up everybody. I could just get in a car and just go home, park the car, and be at home.
- “ My husband has to walk from the west side to the south side every morning and every afternoon back and forth to work. So being able to rent a car that's not out of our price range and being able to get him back and forth to work would be great.

### **Less responsibility**

- “ The fact that I wouldn't have to own the car and if the maintenance came up on it, it's covered by whoever owns the car...I wouldn't have to do a regular car payment on it.
- “ I would probably be interested in that instead of having to get my own car as soon as possible, I could do that.

## WHY INTERESTED IN CAR-SHARING (THOSE WITHOUT CARS)

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**Participants without cars could see car-sharing help them make specific trips and be more comfortable, more flexible, and less expensive than other forms of transportation.**

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### **Specific trips**

- “ Taking the kids to the pediatrician, going to visit my mother. There’s no bus service out there.
- “ I have a friend that lives across town that's hard to get over to see him, because he doesn't have a car right now either...[car-sharing] would be great.

### **More comfortable, more flexible, and less expensive**

- “ Especially, on pay days, when I go to the grocery store. It would be a lot easier than putting stuff in a grocery cart and rolling it over the tracks. That's rough.
- “ Riding the bus in the winter it's like really difficult. Because no nobody wants to stand outside in five degrees weather waiting 25 minutes late for a bus.
- “ If I needed to just go somewhere quick like the grocery store, it could potentially be maybe cheaper than Ubering and Lyftng.
- “ I've often times looked at Budget Rent A Car and thought why don't they do [shorter rentals]? That sounds very similar to what you're describing where it's a quicker service and more people using it for a certain amount of time.
- “ [I could avoid] being around people that I don't know.

## WHY INTERESTED IN CAR-SHARING (THOSE WITH CARS)

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**Participants with cars would be interested in car-sharing if their car broke down or if they needed an additional car.**

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### **Use if car breaks down or if need additional car**

- “ With my car not being super reliable, if I needed to go somewhere that I know would take me a couple hours, then back, it'd be nice to know that I could get a vehicle instead of having to rent a car for an entire day, and deal with all of that hassle.
- “ Say the car broke down, I wouldn't have to rent a car, I'd be able to use something like that.
- “ A lot of times you rent a car and you don't necessarily need it the whole time and you're still paying the cost for it sitting. That way, [with car-sharing] you could just rent the car, go take care of what you needed to take care of, return it and be done with it.
- “ With us only having one car, that gives us access to another car. And if we got to go two separate places, that could be done with the car-sharing program. Without the car-sharing program, we would just have to take a lot of trips with one car.

## WHY INTERESTED IN CAR-SHARING (THOSE WITH CARS)

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**Participants with cars were interested in car-sharing for the experience of driving a different car or for special occasions.**

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### **Drive a different car, potentially for special occasions**

- “ It would be nice sometimes to just have a different car that we'll use.
- “ Sometimes I just get tired of driving my own car. I don't like driving it every day, and then keeping up with the maintenance on it.
- “ I took a young lady out a few days- a month ago and I kind of feel bad, but she got herself in my little car...she had to get in my side and then slide over because that door [didn't work].. But it was kind of a little embarrassing, but if I wanted to go on a date or something...I would use that service.



## WHY NOT INTERESTED IN CAR-SHARING (THOSE WITHOUT CARS)

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**Some participants who don't currently have their own vehicle were used to their forms of transportation and saw car-sharing as a hassle or just didn't drive themselves.**

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### **No benefits over current transportation or seems to be hassle**

- “ Because I have access to [other people's] vehicles so no. And it doesn't cost me. I could use their vehicles.
- “ I don't know what it is and I just said it would be too much of a hassle. And in terms of having to be - You said rent it for an hour, or a couple of hours, or a day, and then - I just don't like being on a time schedule.

### **Don't drive**

- “ I'm just a non-driver. I've never drove...I got anxiety, so I don't drive because of that
- “ No. I mean, I would encourage my friends who don't have a car but have a license to use it, but I wouldn't use it myself...No. No. I'm actually scared of driving.

## WHY NOT INTERESTED IN CAR-SHARING (THOSE WITH CARS)

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**Reasons participants with working vehicles would not be interested in car-sharing: they would prefer to use their own vehicles, are worried about safety and comfort, and are hesitant to try new things.**

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### **Participants thought it made more sense to use their own vehicles**

- “ I just like having my own personal car where I wouldn't have to- if I needed to just get up and go, I could just get up and go.
- “ I don't know, I feel like that's kind of like restrictive, having it for a couple hours. Because sometimes all the places where I may need to go are not planned and maybe a spur of the moment thing. So I do like to have my own vehicle.
- “ It'd be different if I didn't have one already. But to rent one and [my car is brand new] it'd seem like I'd spend more money paying to rent one than just maintaining my own.

### **Worried about personal safety and comfort**

- “ I don't know how I feel about sharing a vehicle with someone that I don't know. People smoke, stuff like that.
- “ Assault. Just not knowing a person pretty much...So I guess when I say "safe", I think that it's a broad scale. Because safety can fall under germs and things of that nature as you've said. But I think the combination of both would be a concern for me.

### **Hesitance to try new things**

- “ You know what probably because I've never done it and I'm just a creature of habit and just some little things. I just sometimes I just don't try new things.

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**Some participants' level of interest was dependent on factors like cost, availability and accessibility of vehicles, and using a car-sharing program with children.**

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### **Would need to understand cost**

- “ Depending on how much it is. Because you may be better off just renting a car for the whole day... If it's cheaper than renting it for the whole day and you only need a couple hours, then yeah, go the cheaper route.
- “ Would it be something when you paid for the day, would you have to pay for all 24 hours or would it be like a certain type of rate?

### **Vehicles need to be accessible and available**

- “ If it's close enough to my house, yeah. ...So if there's a vehicle close enough, then I would, sure.
- “ What if you guys don't have enough cars out there. Then that person is out of luck.

### **Concerns about children**

- “ I have a big family...I've got nine kids from ages 16 to one.
- “ [I'm concerned about] having kids, if they have a limit on having kids.

## GENERAL CONCERNS ABOUT CAR-SHARING



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**Participants are concerned about the reputation of the users, and how the company would take care of things like cleaning vehicles and emergency assistance.**

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### **Worried about other people using the program**

- “ If I'm jumping in line with a bunch of people that seem like they're going to go out and knock over liquor stores or run other people off the road and the service gets a bad name, then I probably wouldn't want to be involved with it. ...I would worry about the other clientele I would be sharing a car with ultimately.
- “ Then you don't know what the person that just had the car did when they were driving. They could've got into it with somebody else, road rage, and you hop in the car and they think that's, you drive past that person again and they think it's you

### **Worried about cleanliness and emergencies**

- “ The cleanliness of the vehicles, you don't know who just had it. Was it properly cleaned, if it was cleaned at all.
- “ I'd want to make sure that if something happens, like because it does happen, cars break down...there was something in place in case that does happen. Like make sure that there is somebody to call. And it's not coming out of your pocket.

## WILLINGNESS TO USE AN APP FOR CAR-SHARING

A little over half of the participants reported they had used an app before to pay for some type of transportation service (e.g., bus passes, ride-hailing service).

**Most participants** who were asked whether they would feel comfortable or uncomfortable **linking their bank and/or credit card accounts to an app to pay for transportation services** indicated that they **would feel comfortable** doing so. Hesitant participants were mostly afraid of hacking and theft, especially regarding the security of a new app or service.

Also, some participants who reported being uncomfortable with the idea of linking their account to a transportation app reported that they would still do it if it was required in order to use an app that they wanted or needed to use.

**A majority of participants said they would be open to the idea of using an app to pay for a car-sharing program.** Some participants who indicated that they were not open to the idea were not necessarily opposed to using an app, but rather were not interested in car-sharing or did not have a smart phone.



- “ *I use apps pretty much for other things, so I'm not overly worried about using an app to reserve the car.*
- “ *I was very uncomfortable for years. I've just recently been doing it the last couple years. I'm more comfortable now than I have been...Just - this just makes things easier. It's like paying bills and stuff to do it online.*

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**Most participants indicated that they were comfortable with the idea of using an app to pay for transportation services, including a car-sharing program.**

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### **Comfortable with using app for transportation**

- “ If that's the only way I need to sign up, I'm pretty sure it's a secure account. I don't have to worry about anybody stealing my money or anything like that.
- “ It's just the convenience of it. Like I do a lot off of my phone.
- “ Yeah, I'd feel comfortable if I - once I had all the information I needed. But generally, that's not something I would shy away from.
- “ At first, it made me uncomfortable and then when I- because all of this is new for me, I'm 50 years old. And we don't come from this age. But as I got to using it more, because I've had to use Uber quite a few times, I became more comfortable with it, putting it on my phone and not having to worry about paying when I get in the car, or giving my credit card to the driver or anything, I was more comfortable with using it.
- “ As long as it says that it's protected, then yeah, I would do it.
- “ Because I know if there is a fraudulent charge my bank is going to handle it. I don't worry about it.





## **ELECTRIC VEHICLES (EVs)**

- Current Knowledge about EVs
- Interest in Owning/Leasing EVs

Many participants are aware of electric vehicles, but there is also a lot of **confusion** surrounding the topic, especially with regards to **charging the vehicles**.

Participants like that electric vehicles have reduced emissions, no maintenance, and decreased gas costs. However, **owning or leasing electric vehicles is not feasible** for most, if not all, of these participants, due to the cost of the vehicles. In addition, **very few of them feel that charging them would be easy**.

Many participants would be **interested renting an EV through a car-sharing program as an opportunity to test drive an EV**. They would need to be assured that the car would hold a charge through their trip and/or receive information about where and how to charge the EV.



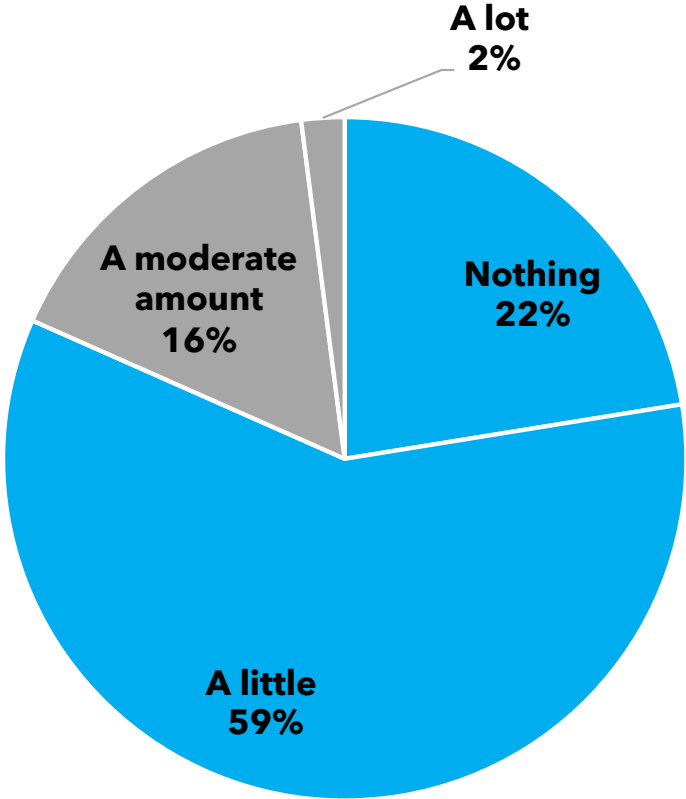
- “ Sure. I'd give it a try... Just to test it out to see if I like it... Without spending the money on buying a car without the commitment of actually buying one, like test it out first.
- “ Yeah, I would probably try it once. Not too many people are running around driving electric, fully electric cars. So it'd be something that probably be a little fun.



# KNOWLEDGE ABOUT ELECTRIC VEHICLES



When asked how much they know about electric vehicles, a large majority of participants stated they knew a little or nothing. Some participants brought up specific types of electric vehicles they knew of, and a few described that they run off of electricity.



- “ I would define a vehicle that - electric vehicle that runs completely off of electric where you got to charge it, you get a certain amount of mileage before the battery dies or anything like that.
- “ The cars that plug in. I know that they save fuel, like it's fuel economy and it saves on fuel emissions in the air, but that's all I really know is that it's just electric. It just plugs in and charges and goes for so many hours.
- “ Electric vehicle, well it cuts down on emissions. Point blank, bottom line. That is the one thing it does do...A car that runs by plugging it in. Real simple.

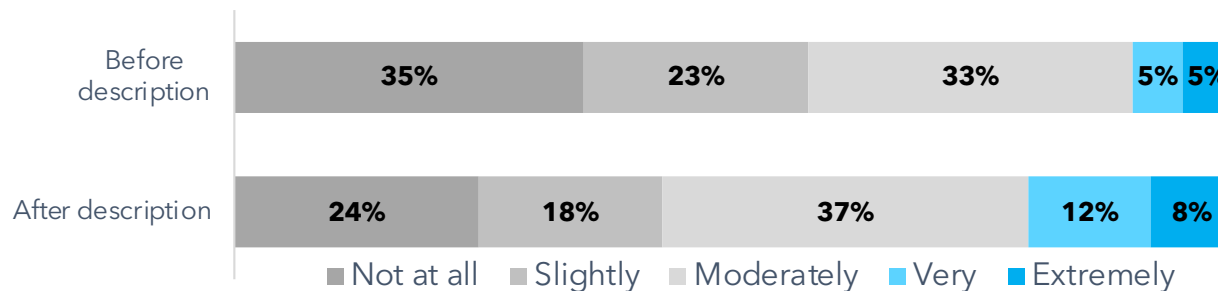
## INTEREST IN OWNING ELECTRIC VEHICLES



Participants were asked how interested they are in owning or leasing an electric vehicle, were provided with the description below, and then were asked about their interest again.

*All-electric vehicles have an electric motor instead of an internal combustion engine. As a result, an electric vehicle (EV) uses a large battery pack to power the electric motor and must be plugged into a charging station or wall outlet to charge, rather than being powered by gasoline.*

- EVs have lower maintenance - no oil changes or engine tune-ups
- EVs have lower fuel costs since they are not powered by gasoline
- EVs emit fewer greenhouse gas emissions, which improves our health and environment for us and future generations



Interest increased slightly following the description - this seemed to be driven by some participants being unaware that EVs have lower maintenance as well as the description's emphasis on the benefits.

A few participants who knew nothing about EVs were included in the ratings of the EVs after the description but were not asked how interested they were before the description.

**Small percentages of participants are very or extremely interested in owning or leasing EVs.** They like the benefits, but they have many **concerns** including **charging, unfamiliarity, size and power, and maintenance and repair** concerns. In addition, according to their earlier responses about desire to own/lease in general, EVs are likely **outside of the price ranges** they're considering.

## WHY INTERESTED OWNING/LEASING ELECTRIC VEHICLES

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**Participants are interested in owning/leasing EVs because they're better for the environment and they perceive them as safer because they don't use gasoline.**

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### **Better for the environment**

- “ I love that it's good for our environment. I'm huge about not littering and trying to keep the planet clean as possible. So that would be the biggest draw for me.
- “ The cleanliness of it. Just the less pollution. I would actually want to do my part so my boys can have a better world.
- “ It helps out the environment, and gas is different, and everything is different. So, I'm like, it kind of makes it better. I want to help out the world, I'd rather make it a better place then have this gasoline everywhere.
- “ Because if all cars could run off electricity and stop polluting this air and we have a better world to live in and all that. That's what we need to do.

### **Safer**

- “ But it does sound a lot safer too. Like if you think about it, I don't know how many times I ran out of gas on the freeway because of the gas gauge is broke. If it's electric, you know how long you charged it, you don't have to worry about breaking down and being on the south of freeway with your kids.
- “ Well the fact that it doesn't take the gas. I mean a lot of times I'm scared gasoline leak then I'd be in danger. You know someone throwing a cigarette out and your car catching fire, you wreck and your car catching fire.

## WHY INTERESTED OWNING/LEASING ELECTRIC VEHICLES

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**Participants are interested in owning/leasing EVs because it saves money on gas and maintenance.**

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### **Saves money on gas**

- “ You can save on gas and things of that nature. It’s definitely something I would consider. It’s just the affordability, actually.
- “ Plugging them in and charging them up has got to be a lot cheaper than using gas.
- “ Because I could be saving on the money I’m paying on gas and it would be easy to plug it into my electric and because we have electric at the house.
- “ I’m slightly interested because the thing of not having to pay for gas, that’s a huge benefit.

### **Less maintenance**

- “ That’s what I worry about, the internal care of a car...the maintenance and the care of it. So those things right there have me open and willing to try it extremely.
- “ I didn't realize that they required so much less maintenance than traditional vehicles. So that would be a huge draw for me.
- “ You hit me up when you were talking about low maintenance, obviously, none of the oil changes as such, so that in the long run seems like it would be more cost efficient and I'm all about saving some money.”
- “ Because as we had just mentioned, the upkeep, it sounds like it could save you some money right there.

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### Participants have concerns about issues with charging EVs.

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#### Charging

- “ ...if you wanted to go out of town and you have to plan your trip around finding places to plug up more or less at this point, as opposed to just going down the highway and just making a quick stop, 15 minutes, charge it and getting back on the road.
- “ But the only downfall is not all these gas stations are gonna have the outlets for cars like that. You know, to charge it?
- “ I wouldn't know where you would get those - get them charged at. Every now and then I see places where you charge them, but it seem like they wouldn't have enough places to charge those cars at, unless you can charge them at home.
- “ But what's the likelihood of being stranded or stuck somewhere when your battery dies or you're on a long trip having to stop and charge frequently.
- “ Again with the feeling of liking to be able to come and go as I please, I feel like I would forget to charge or having the charge will...interrupt...me being able to come and go as I please if my car needed charge.
- “ The only thing I could say is if the power went out and my vehicle didn't charge all the way.

## WHY NOT INTERESTED OWNING/LEASING ELECTRIC VEHICLES

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**Participants feel that EVs are unfamiliar or the technology is too new.**

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### **Too unfamiliar**

- “ I don't know about that. I'm too used to the gas-burning, the eight cylinders and V-8s.
- “ I know things are changing like these cell phones and things like that, but a car, I just, I don't know. I just don't know about depending on an electric car.
- “ I can't really say. It'd just be something new. It's just trying something new, so just the being unsure. I wouldn't like the fact that I'd be unsure about driving the car I never drove before. So that's something I have to get used to. So I guess just being nervous about just the unknown would worry me.
- “ I just don't - I don't grasp electrical vehicles. I mean, I'm the type, I put fuel in it, I drive it, and I keep the maintenance up. Electrical vehicles, there's too much I don't know about.

### **Technology is still too new**

- “ Because I know that that's something kind of, they're still experimenting with... But you know, just like anything else, it takes time to work out the kinks and so forth

## WHY NOT INTERESTED OWNING/LEASING ELECTRIC VEHICLES

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### Participants have concerns about the size and power of EVs.

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#### Size of car

- “ I don't know. I mean, I feel like those electric cars are- I feel like all the electric cars aren't big. I'm a bigger person. I would like a big car. I don't know. That's why I don't know nothing about. All electric cars I know are pretty small little cars.
- “ It's just I really don't see too many designs that I like, the electric cars...It's kind of like the size and I'm not a huge fan of the look, but I could get over the looks if they were a little bigger.

#### Power of car

- “ I have to see how they ride and the pickup power and all like that. I know they was having problems years back...they probably done fixed it by now, but I don't know. I have to see the get up and go...if I hit the pedal, I want to be able to pick up to go.
- “ I'm kind of thinking about the horsepower, I do kind of like to go fast a little sometimes,

# WHY NOT INTERESTED OWNING/LEASING ELECTRIC VEHICLES

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**Participants have concerns about high electric bills and problems with maintenance or repairs.**

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## **Increases in electric bills**

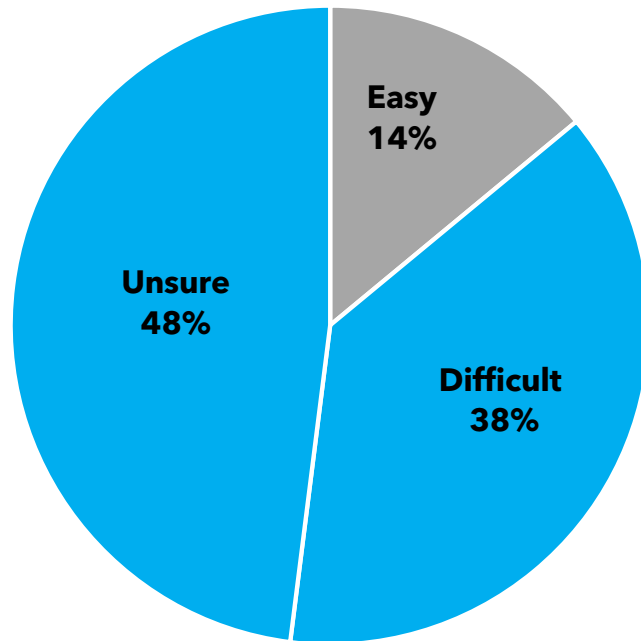
- “ But I also want to know how much it'd raise my electric bill a month just by charging that every day. So it all depends, because if my electric bill shoot up \$200, then I might feel like it ain't worth it...But if it maybe cost me \$30 a month to charge that car, by all means, electric car it is.
- “ I would have to weigh the cost of the maintenance with the car I currently have in gas versus, you know what I mean, how much my electric bill would be changed...

## **Repairs or maintenance**

- “ Everything that's electric is bound to have a problem. So fixing an electric car is way more expensive than fixing a regular car that runs on gas.
- “ And also, electric components are expensive, so I know that you don't have the same maintenance that you would as a gas vehicle, but I'm quite sure when you have issues, you definitely have to take it to a professional mechanic that specializes in those type of vehicles. You know, and the parts will be a little bit more expensive at this particular time, because they don't have them in like a junk yard.
- “ But then my other thing would be the maintenance on it. Like that's an electric car. You can't go to somebody on the street and say hey, can you fix my car? You probably have to take it to the shop. And that costs money.



## PERCEPTIONS OF CHARGING ELECTRIC VEHICLES AT HOME



**Almost all participants are unsure or think it would be difficult to charge an EV at their home.** Reasons include possibly needing a special outlet, no exterior outlets at the home, parking not located close enough, living in an upper level apartment, and the EV charge drawing too much power.

Participants who think it would be easy give reasons such as having electricity and exterior outlets.

Only about a third of participants live in single-family detached homes, which is likely the type of home that makes charging an EV the easiest.



**26%**  
Live in an apartment or other building with a single entrance for many residents



**38%**  
Live in a townhouse/duplex/other attached housing with their own entrance



**36%**  
Live in a single-family detached home

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**Participants believe it would be difficult to charge EVs at home because they may not have the correct type of outlet near accessible parking.**

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### **Difficult - no outlets of the correct type accessible**

- “ I think it could be difficult because I have street parking here.
- “ I live in an apartment building. And there are no outside outlets at all.
- “ It might be difficult because I stay in an apartment complex.
- “ I live in a older - we rent, but it's a lot older home. And it doesn't really have any outlets outside and stuff. So I don't know how that would work out.
- “ I would say I'm unsure, but I would believe it would be difficult because I don't know if it would take it. Does it - can I plug it into like a regular outlet or does it require like an outlet, like a stove outlet or like a drier outlet.
- “ It would be harder because you've got to have a certain outlet for the electric cars to charge.
- “ Just not to have any equipment to do it. The location of the house itself is not anywhere - You'd need about 20 to 30 feet of cord just to get it to the house.

## INTEREST IN TRYING AN EV THROUGH CAR-SHARING

**Among those who would be interested in using a car-sharing program, a majority of them would be interested in trying an EV through a car-sharing program.**

Many of those who are interested would like the opportunity to see what it's like to use an EV without actually purchasing one (see next page).

Among those who are not interested, several of them worry about how charging would work or feel that EVs are unfamiliar.

“ *I'm still on the fence about even like driving one...I don't know. I feel like it would drive different and I would be really worried about the electricity in that car...I've always wanted to drive an electric car, but it's just like a foreign thing for me, I guess.*



“ *[Even just in the context of trying an EV through a car-sharing program] I know you have to go to certain places to get chargers and I'm not quite sure how that would fit into lifestyle. I don't know if it would raise the electric bill at home, number one, I'm not quite sure how that would work out, but if I knew more about it then it might change.*

“ *I don't grasp electrical vehicles. I mean, I'm the type, I put fuel in it, I drive it, and I keep the maintenance up. Electrical vehicles, there's too much I don't know about.*

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**Participants who would be interested in renting an EV through a car-sharing program like the idea of doing a test drive of sorts.**

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### **Would like to test drive an EV**

- “ Yeah, I would probably try it once. Not too many people are running around driving electric, fully electric cars. So it'd be something that probably be a little fun.
- “ It sounds interesting. And I would want to see if they run any different than ones that run on gas.
- “ Yeah, to see how it feels when I'm driving it, and just the whole experience period, because I never drove an electric car.
- “ Just to try it to be sure I like it before I buy one. I mean that's like a big thing with me. Everybody wants to drive a car to make sure it's something that they want and it's safe. If you're trying the car out, you know how it works and then if you like it you know what car you want to buy, you know.
- “ Sure. I'd give it a try... Just to test it out to see if I like it...Without spending the money on buying a car without the commitment of actually buying one, like test it out first.
- “ It would give me an idea if it would be something that I'd be interested in that - maybe buying one myself...The way it handles, how far, you know what I mean, it can get on a charger, and just get an idea of how much fuel I could be saving money that way.



## **APPENDIX**

### WHAT PARTICIPANTS LIKE ABOUT THEIR PRIMARY MODES OF TRANSPORTATION

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**Participants like that they can travel independently whenever they want, and get places faster and safely.**

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### Independence

- “ I just hop in the car and take off and go where I need to go and put gas in it and I don't have to depend on anybody else.
- “ I like being able to control my musical narrative, when I'm driving. I have a very large and comfortable car. So, that's nice. Yeah. And I like being able to come and go when I need to, or feel like having the option of, yeah, moving organically and when I need to.”
- “ It's convenient. I can go out and get my own car and drive...It's just it's at your leisure instead of having to wait on or rely on somebody else. It's so much nicer to have your own vehicle. You can just rely on yourself and you know, you're going to get there.

### Easily accessible

- “ The fact that I have it right there, so pretty much, I guess, I would say convenience because it's always there.
- “ Because if my vehicle's available I'm able just to get in it and go.

### Safer & Faster

- “ Well, because it's convenient. And right now it gets dark so easily, I mean so early, that I just think it's safer. And then sometimes it's just the weather. It may be raining or thundering or lightning and things of that nature, so I choose to drive my car during those times.
- “ So it's just more convenient just for me to get out, get in my



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**Participants like that the bus is free/inexpensive and gets them where they need to go.**

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### **Inexpensive**

- “ Because the bus is free right now.
- “ Right now it's free. And it's nowhere near when we was paying it was nowhere near paying for a gallon of gas. Even if we do, we get further on the bus than we would on a gallon of gas.
- “ That's pretty cheap. That's cheaper than a tank of gas.

### **Gets respondents to their destinations**

- “ It's pretty cool with me. I ain't had no problems with the bus whatsoever, after all these. And I've been pretty good with it, because it's very convenient for me to get to where I need to go.
- “ And I've just rode the COTA bus for 11 years, so I'm just kind of used to it. It's just my normal thing to do for transportation... It's convenient. It gets me where I need to be, where I need to go. "
- “ It's not too far from my house, it's convenient. Right now, due to limitations on passengers for COVID, I'm much more likely to actually be able to get on the bus, as opposed to - I've had times when I've been passed by two or three buses because they were so busy.

### **It can be social and relaxing.**

- “ You meet different people, and some of them are really nice. Sometimes you see somebody you haven't seen for a long time on the COTA.
- “ I like that it's on time and it gives me time just to relax before I get - head into work or go anywhere.

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**Participants like walking because it's good for them and it's easy.**

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### **Walking allows participants to feel good and enjoy their surroundings**

- “ It's good for me, builds character kind of thing.
- “ I consider it trying to acclimate myself to my surroundings a bit or I also consider it good, because I do walk. And a little bit of exercises, it's not much, but it's something to know, because then I'm in the house all day, every day. Just to get out, to see the world a little bit in my area
- “ I like to get to see the city and if there's anybody out on the street, I get to say hi to them...And it gets me more familiar with my own neighborhood and my neighbors.
- “ Because you get out and you get the fresh air, and exercise.

### **Walking is easy**

- “ That it's convenient, that I can get straight there,