UNIVERSITY OF CALIFORNIA

Investigating the Influence of Dockless Electric Bike-share on Travel Behavior, Attitudes, Health, and Equity

A Research Report from the National Center for Sustainable Transportation

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16. Abstract
Cities throughout the world have implemented bike-share systems as a strategy for expanding mobility options. While these have attracted substantial ridership, little is known about their influence on travel behavior more broadly. The aim of this study was to examine how shared electric bikes (e-bikes) and e-scooters influence individual travel attitudes and behavior, and related outcomes of physical activity and transportation equity. The study involved a survey in the greater Sacramento area of 1959 households before (Spring 2016) and 988 after (Spring 2019) the Summer 2018 implementation of the e-bike and e-scooter service operated by Jump, Inc., as well as a direct survey of 703 e-bike users (in Fall 2018 & Spring 2019). Among household respondents, 3–13% reported having used the service. Of e-bike share trips, 35% substituted for car travel, 30% substituted for walking, and 5% were used to connect to transit. Before- and after-household surveys indicated a slight decrease in self-reported (not objectively measured) median vehicle miles traveled and slight positive shifts in attitudes towards bicycling. Service implementation was associated with minimal changes in health in terms of physical activity and numbers of collisions. The percentages of users by self-reported student status, race, and income suggest a fairly equitable service distribution by these parameters, but each survey under-represents racial minorities and people with low incomes. Therefore, the study is inconclusive about how this service impacts those most in need. Furthermore, aggregated socio-demographics of areas where trips started or ended did not correlate with, and therefore are not reliable indicators of, the socio-demographics of e-bike-share users. Thus, targeted surveying of racial minorities and people with low-incomes is needed to understand bike-share equity.

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Disclaimer

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UNIVERSITY OF CALIFORNIA INSTITUTE OF TRANSPORTATION STUDIES

March 2020

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Executive Summary

Cities throughout the world have implemented bike-share systems as a strategy for expanding mobility options, increasing physical activity, and improving the sustainability of the urban transportation system. These systems have attracted substantial ridership, even in the U.S., but the impact on overall levels of bicycling and other modes of travel have not been well documented, and evidence for the inequity of these systems is widespread. In addition, two recent technological advancements in mobility services—electric-assisted bikes and scooters, and dockless parking—may help improve equity and expand the user base of traditional bike-share systems. However, like bike-share programs in general, little is known about dockless and e-bike-share's influence on individual travel behavior.

In this study, we examine the travel behavior and attitudes of users and non-users of the new dockless electric-bike and electric-scooter share in the greater Sacramento region (a micromobility service operated by JUMP Inc.).[1] By surveying residents (many of whom are not bike-share users) both before and after the implementation of the service, we show how the micromobility service influenced travel behavior and attitudes in general. In addition, this project included surveys of micromobility users twice over the course of a year to examine usage patterns in the early days of the micromobility service.

The results suggest that the adoption of the Sacramento micromobility service is somewhere between 3 and 13% in the regions surveyed. The data also indicate small positive shifts in attitudes toward bicycling after the start of the micromobility service, while attitudes toward driving did not change.

Survey results show that e-bike-share substitution for combined car travel (i.e., SOV, carpool, and ride-hailing) is approximately 35% of trips. Although trip level-data suggest that only 5% of e-bike trips connect to transit, categorical responses suggest that many users connect to transit at least infrequently. Walking is the travel mode most often replaced by shared e-bike trips (30%), but some participants report increases in walking due to their use of the service. Before-and-after responses from residents suggest that the micromobility service may have led to a decrease in median vehicle miles traveled (VMT). However, this decrease is measured only through self-reported VMT and may stem from other potential causes; future studies should seek to use objectively measure VMT.

The impacts on health appear to be limited. The before-and-after results show little to no relationship between the availability of shared e-bikes and physical activity from travel (i.e., walking or bicycling). Although the survey was not large enough to adequately estimate safety risk for using micromobility services, the users report slightly more collisions compared to non-users, but a supermajority of those are when riding personally owned bikes (not shared e-bikes or e-scooters), suggesting that the difference is primarily driven by either differences in exposure (greater amount of bicycling) or differences in rider behavior, but not the use of shared e-bikes. For micromobility users, open-ended survey responses show that people prefer

[1] Prior to Lime e-scooter micromobility service availability in the Sacramento region.

e-scooters over e-bikes for short trips, for trips that don't require the need to carry cargo, and for people who want to sweat less.

The percentages of users by self-reported student status, race, and income suggest a fairly equitable service distribution by these parameters, but the lack of any survey responses from the discounted fare program suggests that those with the least financial means may be making limited use of the service. An important finding of this study regarding assessing social equity is that the aggregated socio-demographics of areas where trips started or ended are not reliable indicators of bike-share user socio-demographics. For example, the percentage of non-white people in a census block does not correlate with percentage of non-white persons using bike-share to take trips that start or end in that area. This finding suggests that the common practice of using census block data from origins and destinations as an indicator of the socio-demographics of users may not be reliable for micromobility services.

Introduction

Project Purpose

Motivated by environmental, health, and social equity concerns, many cities have embraced bike-share as an important mobility option (Fishman et al., 2013). By providing a wider array of transportation options, cities hope to reduce their dependence on private vehicles and in turn reduce the externalities associated with current car-focused transportation systems. Recently a new wave of bike-share services that offer electric-assisted bicycles (e-bikes) are being installed in many cities. Even more recent are the "dockless" e-bike and e-scooter share services that have no fixed infrastructure allowing vehicle parking anywhere in the service area. All these kinds of services are now commonly termed micromobility services.

These services are widely used, with an estimated 84 million trips in the U.S. in 2018 (NACTO, 2019). But adoption rates at the city level are largely unknown, and the impacts of bike-share services on other travel modes appear variable and indefinite because of limited data. Some cities have seen large effects indicative of car-to-bike-share shifts, while others have predominately seen shifts from transit or active modes to bike-share (Fishman et al., 2013). Even less is known about the effects of the more recent dockless services on other modes of travel (Schoner et al., 2015). Furthermore, the effects of micromobility services on society could be far more complex than simply a mode substitution. It is possible, for example, that bike-share services have important indirect effects on an individual's attitudes toward bicycling, a strong determinant of choosing to ride a bike (Handy et al., 2010). Other potential indirect effects include improved safety for bicyclists in general through safety-in-numbers (Elvik and Bjørnskau, 2017; Fyhri et al., 2016; Jacobsen, 2003; Jacobsen et al., 2015) and changes in car driver behavior such as greater attention to bicyclists. Understanding how bike-share and other emerging micromobility services directly and indirectly impact travel behaviors and attitudes will be important for planning future transportation systems that aim to reduce environmental and social negative externalities from existing transportation systems.

Understanding the implications of bike-share on health is important given that non-communicable diseases due to physical inactivity have reached pandemic status (Sallis et al., 2016). The counter to potential improvements to public health through increases in physical activity is the risk of crashes. However, evidence suggests that the crash rate for bike-share riders is fairly low at 1 in 50-100,000 trips (Shaheen et al., 2012), which may be similar to bicycling in general. However, the health implications for e-scooter use are much less promising with e-scooter mode substituting walking (physical activity) and risk of injuries potentially greater than conventional bike-share (Austin Public Health, 2019) . Finally, the ability of micromobility services to reduce the inequities of current transportation systems is uncertain. Originally conceived as a travel mode that would be available to people of all socio-economic status, evidence suggests that low-income groups and racial minorities use bike-share at much lower rates than other groups (Fishman et al., 2013). Dockless bike-share systems may improve the equity of bike-share use since station location is the main driver of inequitable bike-share

availability, but even measuring the effects of these services on low-income groups and racial minorities is challenging.

Research Design

Research Questions

The rise of electric bike-share (and now scooter-share) systems in cities across the globe suggest a willingness of their populations to consider new travel modes. Understanding how these systems affect travel behavior in a broad sense is important for planning our future cities. We aim to examine the effect of the largest dockless e-bike-share in the U.S., covering three California cities, Sacramento, West Sacramento, and Davis, on the travel behavior and attitudes of both users and non-users. The main research questions of this study are following:

> *How do users and non-users of the bike-share system differ with respect to socio-demographics and travel behavior?*
>
> *How does an e-bike share influence attitudes toward bicycling and other modes?*
>
> *How does an e-bike share influence users' travel behavior? Can it help reduce vehicle miles traveled?*

This study will also quantify health and equity outcomes from the new e-bike-share system. The study provides information valuable for local and regional agencies as well as other cities as they plan for similar e-bike-share systems.

Study Area Context

This study covers the use of the Jump-operated electric bike-share service in Davis, most of West Sacramento, and the downtown and adjacent-to-downtown neighborhoods of Sacramento, CA. The service covers an area of approximately 50 square miles, though the service areas are not all contiguous; Davis is separated from West Sacramento by about 10 miles. While Davis has a rich history of bicycling (Buehler and Handy, 2008), West Sacramento and Sacramento have not historically catered to bicyclists. However, recent investment in bicycling infrastructure in downtown Sacramento and in parts of West Sacramento have indicated a shift in the priority given to bicycling as a mode of travel in those cities. The flat topography in this area increases the feasibility of bicycling, but hot summer weather can be a deterrent.

The Jump service was launched in the summer of 2018 and included approximately 900 (with 100-200 not in circulation at a given time) electric-assist bicycles (e-bikes) as of November 2018. By May 2019 the number of e-bikes increased to closer to 1,000, and 100 e-scooters were also available in Sacramento and West Sacramento but not Davis. Because the service predominantly provides e-bikes (and not e-scooters) and because we have collected a much richer set of data about e-bike use, we will refer to the bike-share as “the service” and specifically call attention to e-scooter results when relevant. The Jump service is dockless, meaning that the vehicles can be parked anywhere because they can be locked to themselves.

Although the service is dockless, Jump has installed docks in the region (including a few charging stations) to provide a place for rebalancing bikes, and users are sometimes incentivized to return bikes to the docks. In all three cities, policy dictates that e-bikes and e-scooters should be parked adjacent to (but not necessarily locked to) public bike racks. However, during these surveys, enforcement was limited, meaning that in many cases people park the e-bikes and e-scooters in places other than bike racks, as is the case in most dockless services across the U.S. We collected all survey data when Jump was the only micromobility service operator in the region, prior to when Lime opened an e-scooter share.

Survey Design and Data Collection

We used two separate survey methods in the study, as described below. The first was a before-and-after household survey designed to test whether the e-bike-share system influenced the non-users of the service. The second was a two-wave longitudinal bike-share user survey for studying how the service influences the travel behavior of users. The survey timeline with respect to Jump service arrival is shown in Figure 1.

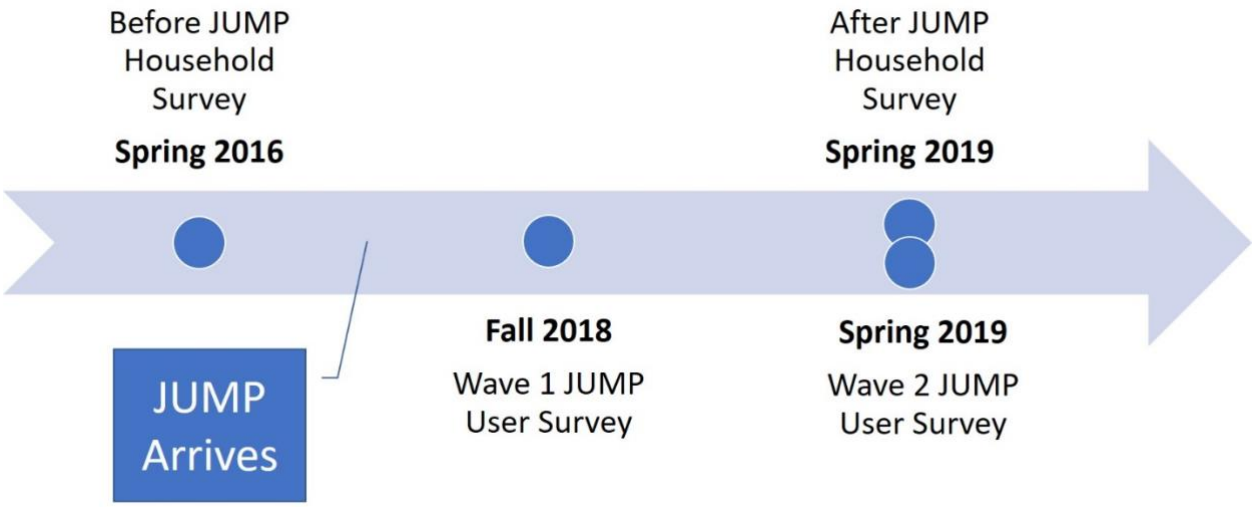

Figure 1. Timeline of household and bike-share user surveys with respect to bike-share service arrival

Survey Methods

Household Survey

We designed a before-and-after survey to directly measure the effect of the bike-share service on levels of bicycling, transit use, and vehicle-miles of travel as well as attitudes towards bicycling in the service area. We implemented a "before" survey of households in April 2016. The initial sample for the "before" survey comprised 14,000 addresses provided by the cities of Sacramento, West Sacramento, and Davis. This sample included 5,000 addresses in Davis, 2,000 in West Sacramento, 5,000 in downtown Sacramento, and 2,000 in the South Natomas neighborhood of Sacramento, all randomly selected. The respondents from South Natomas,

which lies outside of the service area, can be compared to respondents from the other areas to examine differences in observed changes given differences in access to service from home. Although we refer to these residents as a control group, they are not a true control group in that they can certainly use the bike-share service (and some do), and all of them could see the bikes, either parked or in use, when they travel into the service area. In the "before" survey we oversampled Davis for a concurrent research project specific to Davis (see Table 1); these respondents completed an additional set of questions not asked of the Sacramento and West Sacramento respondents. In the "after" survey (May 2019), we used approximate response rates from the "before" survey to get a more balanced (by population size) sample from the different areas from an initial sample of 11,000 addresses. This resulted in the random selection of 1034 addresses in Davis, 2584 in West Sacramento, 4429 in downtown Sacramento, and 2953 in South Natomas.

For each survey wave, we sent a recruitment letter to the initial sample of addresses. The recruitment letter invited residents to participate in an online survey and provided the URL for the survey site, developed with Qualtrics software. We offered potential participants the opportunity to be entered into a cash prize drawing for ten $100 gift cards if they completed the survey by a specified date within three weeks of the postmarked letter. The recruitment letter stated that only residents over the age of 18 could participate in the study, and it asked potential participants unwilling or unable to complete the online survey to contact us to request a physical copy of the survey in the mail with a postage-paid return envelope; later we decided to administer the survey over the phone for these respondents. We sent reminder postcards one week following the initial recruitment letters and extended the deadline for entering the drawing. After accounting for undeliverable addresses, we achieved a response rate of 14% in wave 1 and 10% in wave 2. The larger response rate in wave 1 was due to the oversample of Davis residents (where the response rate was much higher, at approximately 20%).

Questions in both surveys asked about access to and use of different transportation modes, attitudes towards bicycling and other aspects of transportation, experience with bike-share services in other regions, and socio-demographic characteristics including income and race/ethnicity. The "after" survey was expanded to include questions about awareness and use of the bike-share service in the Sacramento region.

Bike-Share User Survey

We used a two-wave longitudinal survey of bike-share service users to measure the effect of the service on user's travel behavior and attitudes. The first wave survey was implemented in October 2018 and focused on attitudes and perceptions, experience, and travel behavior. This survey captured user behavior after only 4 or 5 months of service operation. This timing allowed residents to become acquainted with the service, but we suspect that it primarily captured early adopters who may be more excited about trying out the service. The second wave survey occurred in May 2019 and included a follow up with the initial sample and a new sample of users. We made only slight changes in the second wave survey where necessary (e.g., to include e-scooter focused questions). For some survey questions (e.g., trip details and

number of trips in the last month), respondents were asked to review their prior trips on their smartphone application or their online Jump account when filling out the survey.

Recruitment for these surveys included the following techniques: (1) intercepting users at key locations throughout the study area on foot, (2) taping fliers with the URL and QR code to the survey to bike seats, and (3) for the first wave recruitment only, Facebook advertisements run by Jump Inc. on our behalf (targeted by zip code). We based our field recruitment strategy on maximizing the number of users intercepted while at the same time attempting to recruit users across all geographies and times of day to ensure that the sample included people using the service in a variety of different ways. The sample characteristics are shown in Table 1.

Table 1. Characteristics of the household survey and bike-share user survey samples

Variable		Household (HH) survey	Study area characteristics of HH survey	Bike-share user survey	Study area characteristics of Bike-share user survey
Sample Size	Wave 1	1959		434	
	Wave 2	988		269 (140 panel)	
Response Rate	Wave 1	14%		NA	
	Wave 2	10%		NA	
Student		12%	34%	25%	33%
Race	White	74%	48%	65%	49%
	Black	4%	6%	4%	7%%
	Hispanic	10%	24%	13%	21%
	Asian	12%	14%	18%	17%
Education Status	Technical Certificate	10%		12%	
	Bachelor's Degree	45%		36%	
	Graduate Degree	31%		38%	
	High School Diploma or GED	12%		13%	
	Grade School or Junior High	0.4%		0.2%	
	No Formal Education	0.2%		0.1%	
Age	(Mean)	47 years		35 years	
Gender	Women	55%		54%	
Household Income	Less than 50,000	16%	45%	10%	40%
	50,001 - 100,000	28%	26%	26%	29%
	100,001 - 200,000	43%	21%	46%	23%
	200,000+	13%	8%	18%	8%
Annual Household Vehicle Miles Traveled	(Median)	12,000 mi		11,000 mi	
	(Std. Deviation)	19,841 mi		16,666 mi	

Bike-Share Adoption

The bike-share service adoption rate (those who have ever used the service, including scooters as well as bikes) from the second wave of the household survey was higher in Sacramento (12.5% of respondents) and West Sacramento (13%) than in Davis (3%). The low adoption rate in Davis may be due to the under-sampling of the student population who are anecdotally—from personal observations—the most prevalent users in Davis; only 21% of respondents in the second wave household survey were students, who make up 36–41% of the population in Davis based on the 5-year estimates from the American Community Survey, UC Davis Campus Population Report, and the UC Davis Campus Travel Survey. However, none of the UC Davis students who responded in the second wave household survey had used bike-share and only 25% of the Davis respondents to the user survey were students, so it is possible that person-level adoption is much lower in Davis, where bike ownership is high. Although estimating the adoption of e-scooters is limited by the sample size of the second wave user survey, 74% of respondents reported having used only e-bikes, 25% of respondents reported having used both the e-bikes and e-scooters, and the remaining 1% reported having used only e-scooters. At the time of the second survey, the e-scooter supply was approximately 11% of the e-bike supply. That 25% of bike-share users reporting having used an e-scooter is more than twice what we might expect given the ratio of e-bikes to scooters. However, this result could be biased as our second wave survey occurred right after the availability of e-scooters, when respondents might have been curious to try them. The frequency of e-scooter use by these respondents is less than that of e-bikes, indicating that greater one-time use may not indicate continued use, as discussed further below.

Prior to the arrival of the bike-share system at the Sacramento region, survey participants indicated intention to use the upcoming bike-share system with similar rates as reported actual user-rates (Table 2). Participants who said they “Will definitely” or were “Fairly likely” to use bike-share ranged from 5 to 16%. Also, the relative city-specific share of respondents who intended to use the bike-share are the same as the relative city-specific actual use (as reported in wave 2) with Davis residents least likely and Sacramento residents most likely to use the bike-share.

Table 2. Likelihood to use the bike-share service by city

City	Likelihood Statement	Percentage by City Sample
Davis	Will definitely	5.28%
Sacramento		9.03%
West Sacramento		8.38%
Davis	Fairly likely	11.41%
Sacramento		16.41%
West Sacramento		14.19%
Davis	Only somewhat likely	20.82%
Sacramento		23.79%
West Sacramento		29.03%
Davis	Not very likely	44.08%
Sacramento		37.27%
West Sacramento		31.61%
Davis	Will definitely NOT	18.39%
Sacramento		13.48%
West Sacramento		16.77%

Sample Characteristics of the Household Survey by City and User Status

The socio-demographics of the service users generally align with the non-users with respect to incomes, race, and gender, according to wave 2 of the household survey (Table 3). The exception is that users tend to fall in the middle-income categories, and in Davis, the percent of the users who identify as Asian is much larger for users than non-users. Where socio-demographics more clearly differentiate between users and non-users is in age and student status: service users have an average age more than 10 years younger than the non-users and are twice as likely to be students as the non-users (although the student effect is reversed in Davis). The younger average age of users may be due to numerous factors such as targeted marketing, smartphone technology adoption, attitudes toward bicycling safety, among others; bike-share services have historically attracted young users (Fishman et al., 2013). The high share of students among users may be driven by Sacramento State University and Sacramento City College, both located within the Sacramento service area. However, the lack of student users in the Davis sample where UC Davis is located is surprising; the high use of personally owned bikes among UC Davis students might explain this result.

Although the users and non-users appear to generally align, the entire sample of respondents is biased toward middle- and upper-income households and white respondents. The sample under-represents the Black and Hispanic population by nearly half, and under-represents low income households by approximately two thirds. Although we only report unweighted univariate and bivariate statistics in this report, future analyses will include multivariate modeling to better understand the relationships between socio-demographics and use of bike-share.

Table 3. Sample characteristics of the household survey by city and bike-share user status

Variable			Davis	West Sacramento	Sacramento (downtown)	Sacramento (control)
Student		Users	0%	14%	5%	14%
		Non-users	20%	6%	7%	8%
Race*	White	Users	60%	74%	75%	50%
		Non-users	73%	75%	79%	62%
	Black	Users	0%	0%	5%	13%
		Non-users	1%	4%	2%	14%
	Hispanic	Users	0%	26%	10%	37%
		Non-users	11%	13%	10%	13%
	Asian	Users	40%	0%	10%	0%
		Non-users	15%	8%	9%	11%
Age (years)	(Mean)	Users	45	42	41	34
		Non-users	49	52	52	50
Gender	Women	Users	50%	38%	51%	43%
		Non-users	53%	56%	56%	56%
Household* Income	Less than 50,000	Users	0%	14%	4%	0%
		Non-users	3%	16%	9%	11%
	50,001 to 100,000	Users	50%	14%	22%	75%
		Non-users	24%	35%	27%	34%
	100,001 to 200,000	Users	50%	71%	61%	25%
		Non-users	46%	35%	52%	44%
	More than 200,000	Users	0%	0%	13%	0%
		Non-users	27%	14%	12%	11%
Annual Household Vehicle Miles Traveled	(Median)	Users	12,000	16,500	11,000	18,000
		Non-users	11,000	15,000	10,300	16,000
	(Std. Deviation)	Users	6,569	9,942	19,231	7,615
		Non-users	11,725	17,819	14,175	22,007

* Percentages are column-wise proportions of the factor category by users and non-users separately. This means user and non-user percentages can be compared within the city for each factor level.

Household Location, Work Location, and School Location

Both the household survey and bike-share user survey samples include people with home and work locations in and outside the service area (Figures Figure 2 and Figure 3). Figure 2 shows that the workplaces of many participants are far from the bike-share service boundary, indicating many work commutes are not possible with bike-share. Unlike workplaces, nearly every school location is located within the service boundary of bike-share.

Home locations of household survey respondents and user survey respondents are similar except that the user survey respondents who live in Sacramento live more centrally compared

to the general household respondents, with a few exceptions (e.g., user survey respondents living far outside the service boundary).

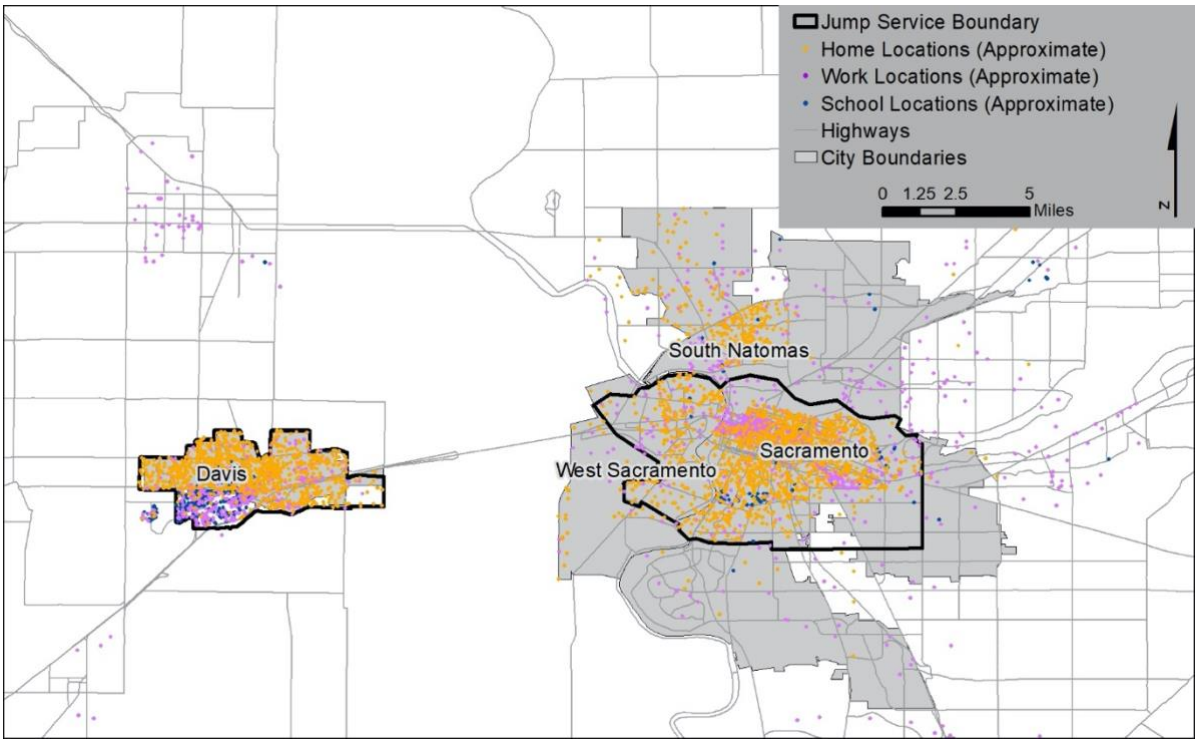

Figure 2. Household survey respondents' home, work, and school locations

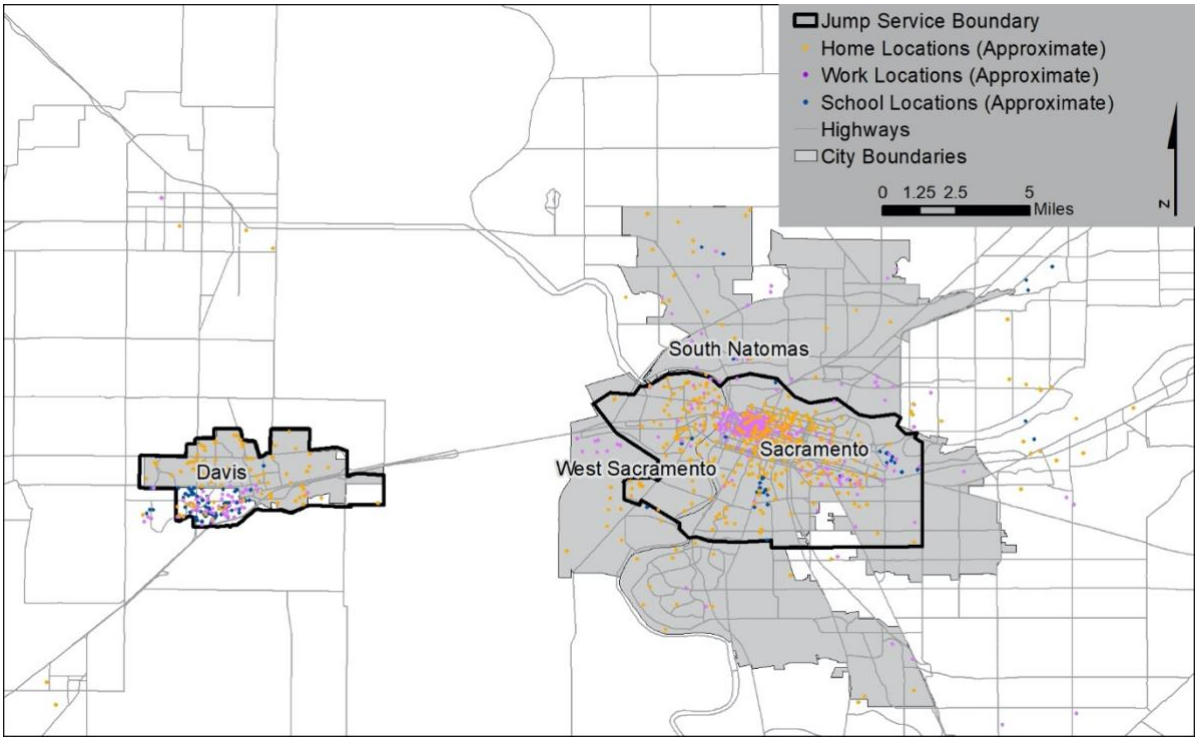

Figure 3. Bike-share user survey respondents' home, work, and school locations

Limitations

Although we attempted to generate a representative sample by using random addresses in the household survey, self-selection bias is always a concern: people who choose to respond may have behavioral and attitudinal predispositions toward bike-share. This is especially true of the second wave of the household survey since the letter indicated that the survey was about the regional bike-share system. Beyond selection bias, the time-lapse between the "before" survey in 2016 and the "after" survey in 2019 was longer than intended, given a delay in the implementation of the bike-share service in the Sacramento region beyond the originally anticipated date. This long time-lapse leads to an increase in the possibility that factors other than the implementation of the bike-share service affected travel behavior as well as attitudes, though the use of a geographic control group helps to correct for any such effects.

The bike-share user survey is likely to have other sources of bias beyond self-selection. For example, we may have oversampled bike-share commuters as they were easier to intercept because of predictable travel patterns. We also ended up asking lots of bicyclists on personal bicycles if they had ever used bike-share when in the streets. This may have resulted in a bias toward people who bicycle more regularly and use bike-share only infrequently. Finally, the entire sample is biased toward middle- and upper-income households and white respondents and thus is missing key information from Black, Hispanic, and low-income residents (as noted above).

Results and Discussion

How do Users and Non-Users of the Bike-Share System Differ?

For the purpose of analysis, we have grouped users and non-users into three groups: household survey users (household survey respondents who used the Jump bike-share in the Sacramento region at least once), household survey non-users (household survey respondents who have never used the Jump bike-share in the Sacramento region), and the bike-share survey users (bike-share survey respondents who were recruited from non-random methods). Below we compare users and non-users of bike-share with the following themes: socio-demographics and car ownership, the use of different modes, frequency using bicycles and other shared modes, weekly vehicle miles travel, bicycling comfort, and bicycling safety.

Socio-Demographics and Car Ownership

The bike-share service tends to be used mostly by younger people given the median age of household survey non-users, household survey users, and bike-share survey users are 51, 37, and 33 years, respectively (also see Figure 4). In the aggregate, fewer non-users report being comfortable bicycling on an arterial street compared to bike-share users (Figure 4). It is unlikely that the bike-share is the cause of this difference, rather the difference likely reflects that individuals who are comfortable bicycling are more likely to use bike-share. The three groups show smaller differences for the number of children in the household and percent women (Figure 4).

Bike-share users in general have fewer household cars compared to non-users (Table 4). While the difference in median number of household cars is small, the percent of zero-car households shows that bike-share users have less regular access to cars. This may indicate that the bike-share helps people live car-free, but we lack specific evidence of a clear before and after effect of selling a household vehicle because of the bike-share. Also, the car ownership differences run counter to the evidence about weekly VMT (reported below).

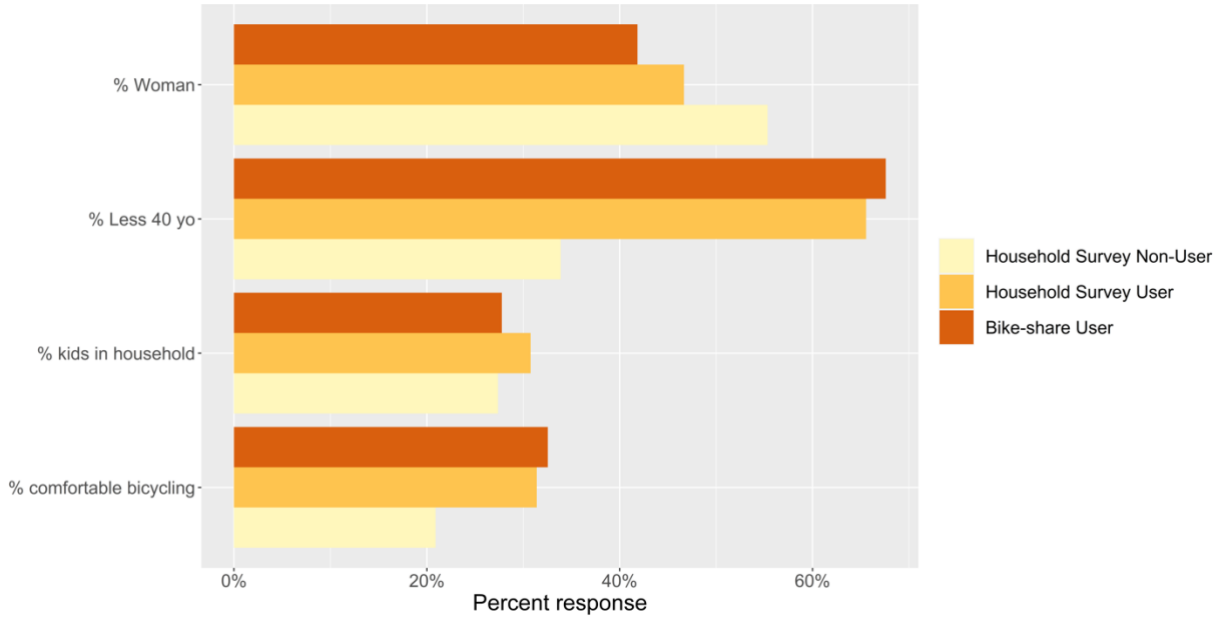

Figure 4. Socio-demographics by bike-share user status from the household survey and the bike-share user survey

Table 4. Car ownership distribution of bike-share user and non-user group

Aspect	User Group	Mean	Median	Percent
Number of Cars Owned	Household Survey Non-User	1.8	2	
	Household Survey User	1.6	2	
	Bike-share Survey User	1.5	1	
Households with Zero Cars	Household Survey Non-User			5.3%
	Household Survey User			7.5%
	Bike-share Survey User			12.0%

Mode Usage

Figure 5 shows, for each survey, the percentage of respondents who used each of several transportation modes over the 7 days preceding their taking of the survey. Bike-share users (left and middle column in Figure 5) self-report bicycling much more frequently than non-users (right column). This is especially the case for the users we recruited by non-random sampling (bike-share survey users). Bike-share users also self-report driving less, using transit more, and walking more, compared to non-users.

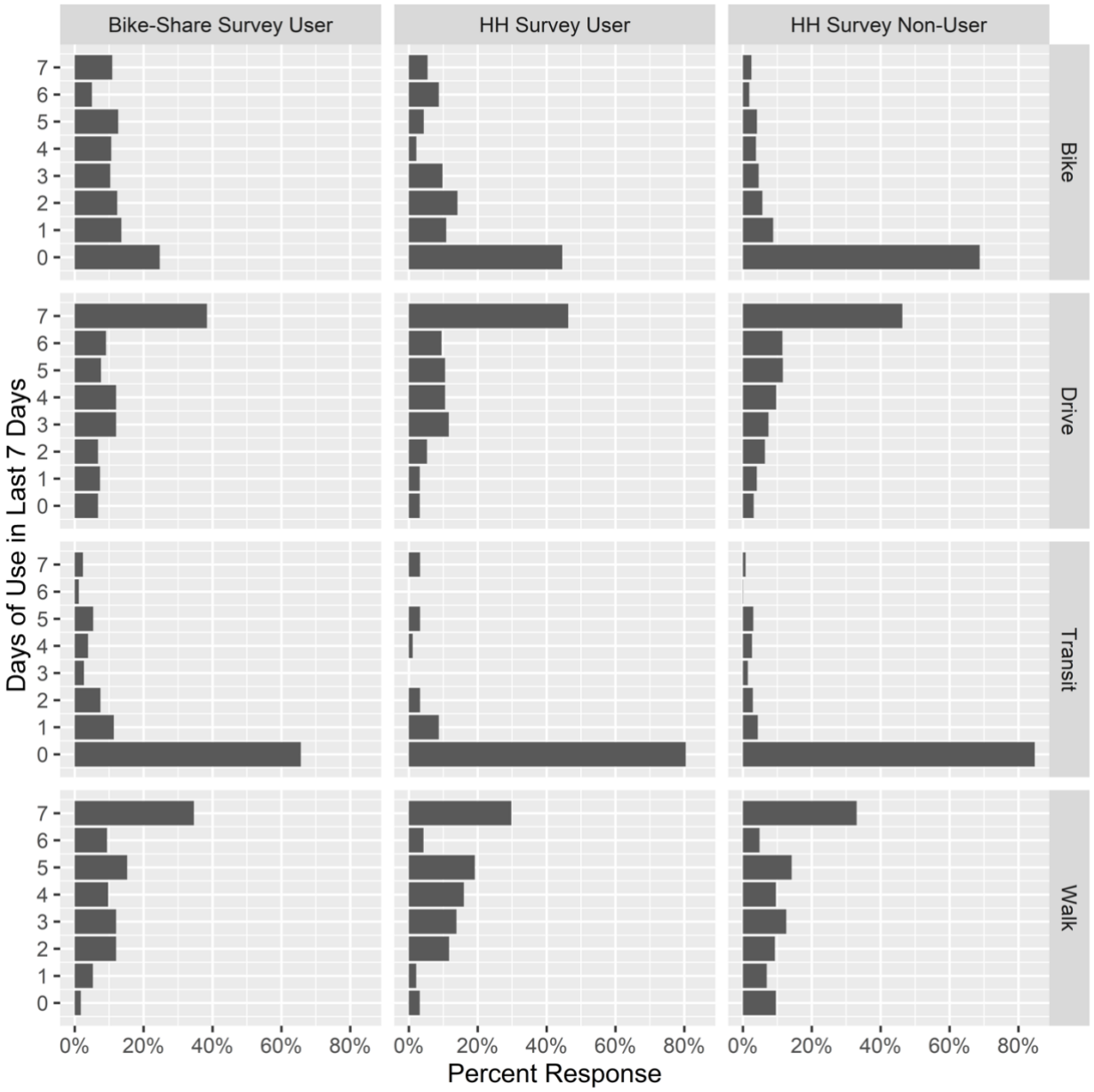

Figure 5. Different mode usage by bike-share users and non-users

Bicycling and Sharing Vehicle Frequency by Users and Non-Users

Bike-share users consistently biked more often and used other shared modes of transportation more compared to non-users (Figure 6). Bike-share survey users were twice as likely to have biked "every day or almost every day" as the household survey users. This difference can be attributed to different recruitment strategies: mail recruitment for the household survey and intercept recruitment for the bike-share user survey. Since the intercept recruitment is more likely to capture high-frequency bike-share users, it is possible that those participants represent an extreme in terms of bicycling. Regarding other mobility services, bike-share users used carsharing and ride-hailing more frequently than did non-users. The reason for this association

of ridesharing and carsharing with e-bike sharing is uncertain. Possible explanations could include a tendency of e-bike share users not to own a car and therefore rely on shared modes, or they may simply be more comfortable than non-users with app-based mobility services.

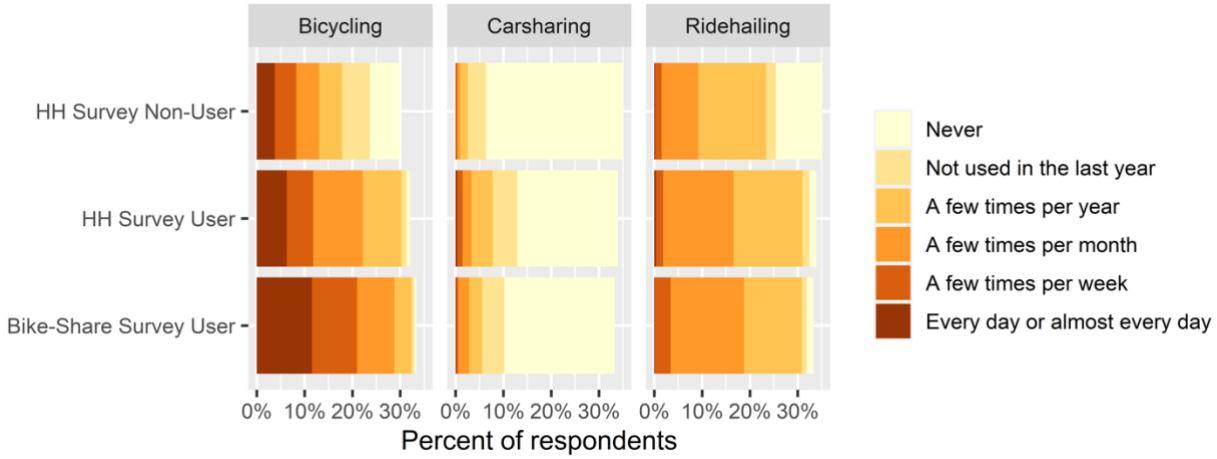

Figure 6. Biking and sharing vehicle frequency by survey and user status

Typical Vehicle Miles Traveled

Compared to both user and non-user respondents in the household survey, a smaller proportion of the respondents to the bike-share user survey owned a car [or cars], and a smaller proportion of them used cars on a daily basis; and yet they reported the most vehicle miles traveled (i.e., in this study, miles of driving) in a typical week (Table 5). Within the household survey alone, respondents who had used the bike-share reported lower weekly VMT compared to the non-user group of the sample (Table 5). In the bike-share survey, there was wider variation (i.e., standard deviation) in weekly VMT compared to the household survey (Figure 7). This could be due to the methods of collected self-reported VMT. In the bike-share survey, respondents reported weekday and weekend VMT separately, whereas in the household survey respondents reported just weekly VMT.

Along with weekly VMT, we estimated annual household VMT by summing respondents' reported car-specific annual household VMT (see Table 1 and Table 3). Table 1 shows that household VMT for both surveys is nearly equivalent at the median. This could mean that the VMT of the bike-share survey respondents is being offset by other household members to make annual estimates more in line with the household survey. However, the distribution of weekly VMT for bike-share users is similar to that of non-users, suggesting outliers may be the cause for the group differences at their means and perhaps even medians (Table 5 and Figure 7). Because all estimates of VMT are self-reported, they are likely to under-estimate actual VMT for people with low VMT, and over-estimate it for people with high VMT (Langford et al., 2008; Staplin et al., 2008).

Table 5. Median vehicle miles traveled per week by user status

User Status	Weekly VMT (Median)	Weekly VMT (Mean)	Weekly VMT (Std Dev)
Bike-share Survey User	80 mi	138 mi	433 mi
Household Survey User	45 mi	90 mi	105 mi
Household Survey Non-User	50 mi	91 mi	114 mi

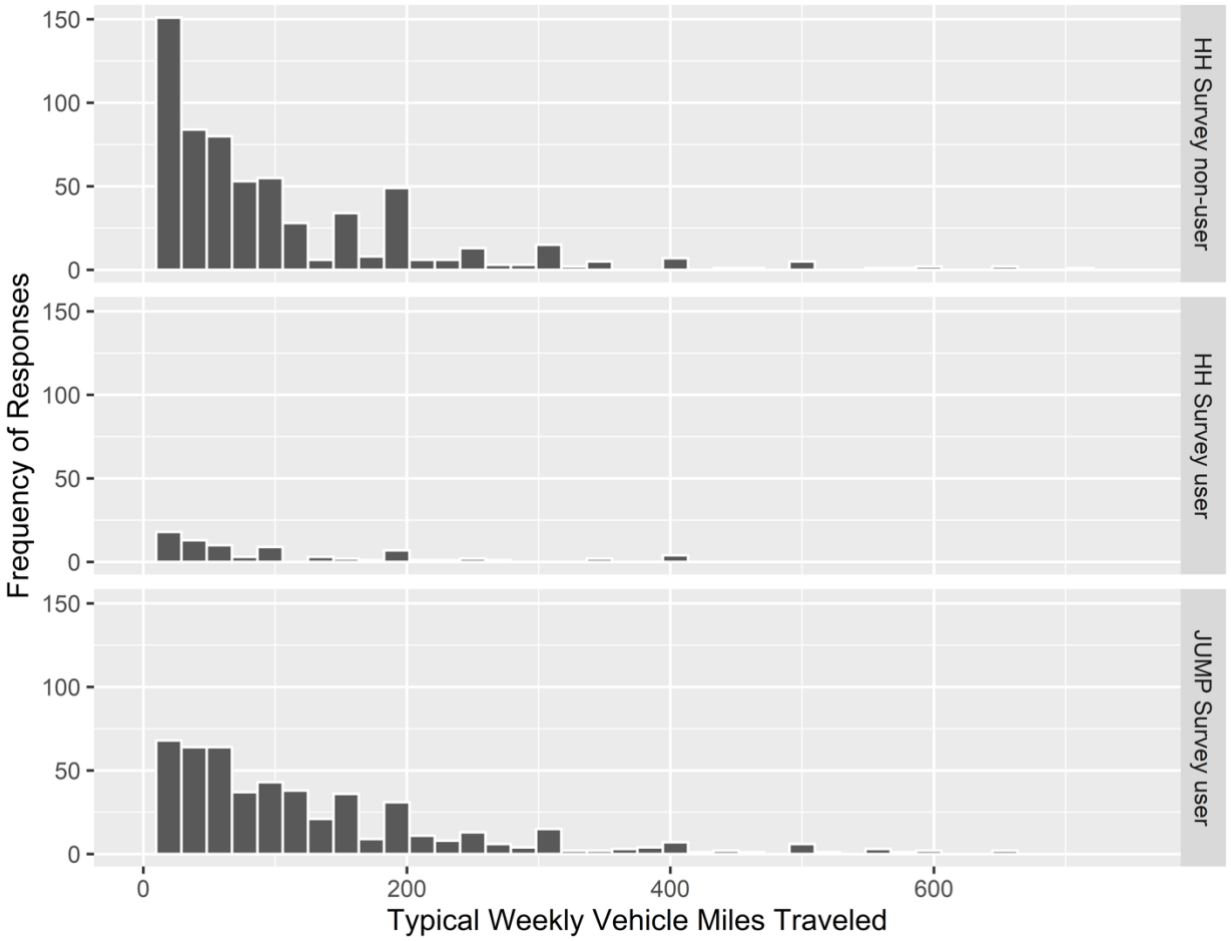

Figure 7. Typical self-reported weekly vehicle miles traveled by user status

Comfort and Safety

Bike- and scooter-share users report more confidence bicycling and scootering than non-users (Figure 8). However, the aggregate differences in confidence are very small. Users and non-users also agree that they would not be very confident riding an e-scooter (both for people who had tried them and people who had never tried them). This indicates that even users are much less confident on an e-scooter than on an e-bike.

In general, users are more comfortable riding a bicycle on a four-lane road without a bike lane compared to the non-users (Figure 9). However, the majority of the respondents replied that they are uncomfortable and will not ride a bike on a four-lane road without a bike lane. Even fewer respondents are comfortable riding a scooter on a four-lane road without a bike lane.

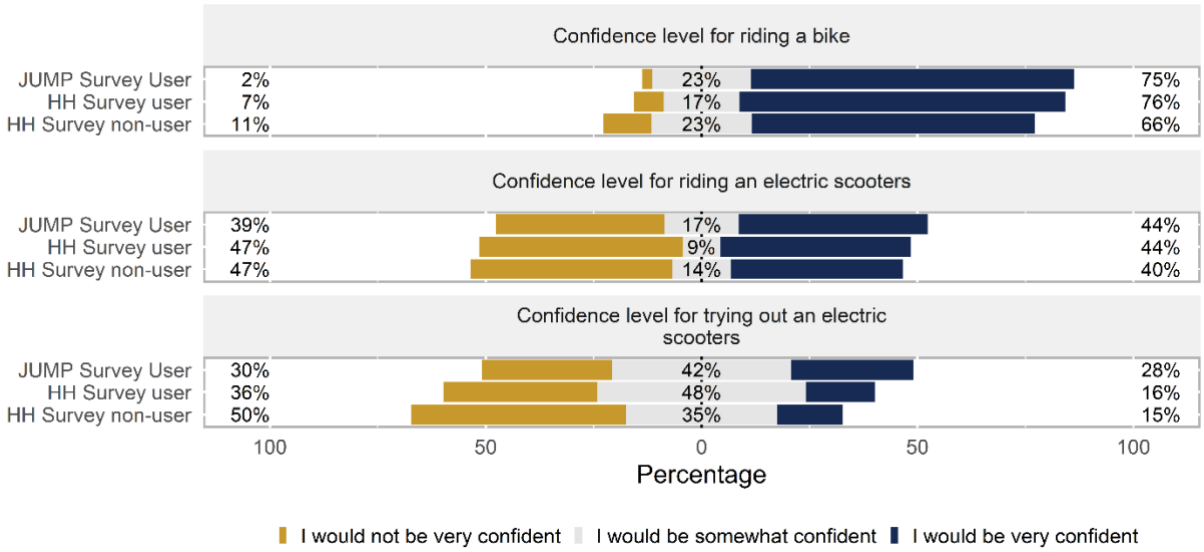

Figure 8. Survey respondents' perception of riding confidence by vehicle type and experience. Reported percentages on the left, center, and right of the plot indicate percentages of negative (gold), neutral (grey), and positive (blue) perceptions, respectively.

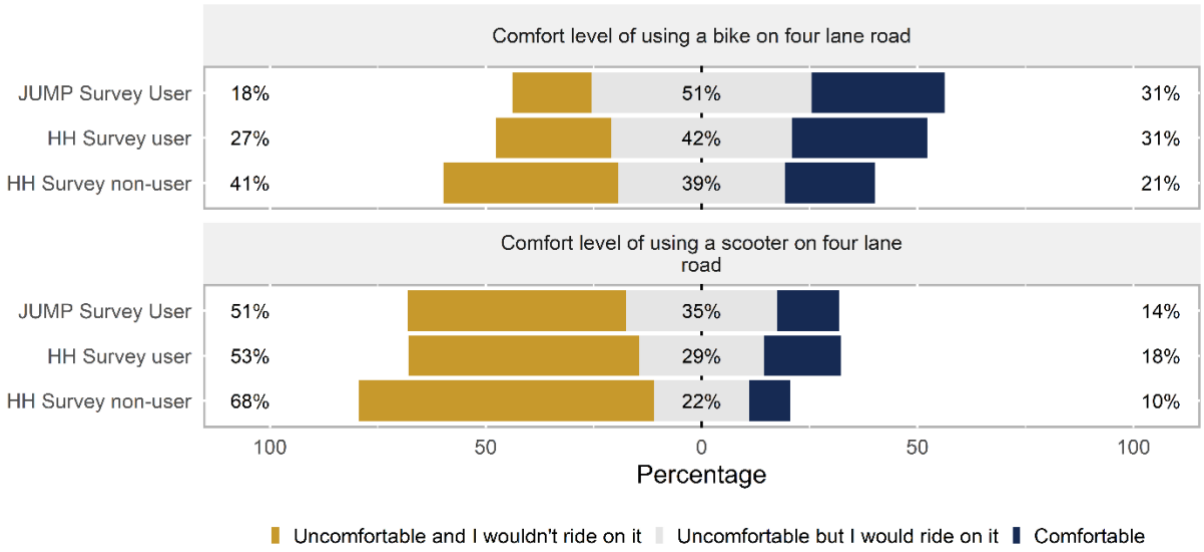

Figure 9. Survey respondents' comfort level for using shared e-bikes and scooters on a four-lane road. Reported percentages on the left, center, and right of the plot indicate percentages of negative (gold), neutral (grey), and positive (blue) perceptions, respectively.

Although the sample size for reported collisions is small, the rate of collisions appears to be higher for shared e-bikes than for conventional bikes (Table 6). For nearly all bicycling frequencies, collision rates per respondent are higher for bike-share users than for non-users. For example, the rate of collisions among those who bike every day or nearly every day is much higher for respondents in the user survey than for respondents (users and non-users) in the household survey: 0.49 vs. 0.07, respectively. However, among all respondents to both the user survey and household survey, a supermajority of collisions occurred when using personally-owned bikes rather than shared e-bikes (Table 7). These findings suggest that the difference in collision rates between the household and user survey respondents is not likely due to the bike-share system. Unfortunately, we did not collect data on bike miles traveled (a better metric than bike frequency categories for risk exposure), so it is not possible to know if the differences between respondent groups' collision risk is due to exposure or risky behavior. Additionally, we did not collect enough data on e-scooter collisions to warrant a discussion of the results.

Table 6. Collision rates: household survey versus bike-share user survey respondents

Biking Frequency	Source	Number of Collisions	Number of Respondents	Rate
Every day or almost every day	HH Survey	30	428	0.07
	Bike-Share User Survey	102	208	0.49
A few times per week	HH Survey	22	463	0.05
	Bike-Share User Survey	10	170	0.06
A few times per month	HH Survey	24	438	0.05
	Bike-Share User Survey	15	140	0.11
A few times per year	HH Survey	8	394	0.02
	Bike-Share User Survey	7	65	0.11
Not used in the last year	HH Survey	17	397	0.04
	Bike-Share User Survey	0	10	0.00
Never	HH Survey	17	498	0.03
	Bike-Share User Survey	2	8	0.25

Table 7. Injury status and mode of traveling during the time of incidence

Injured Status	Jump e-scooter	Personally owned bike	Personally owned e-bike	Walking	Shared e-bike
Not Injured	1	41	2	28	12
Injured, but did not receive treatment	1	31	2	13	5
Injured, received treatment, but not hospitalized	1	14	0	1	4
Injured and hospitalized	0	0	0	2	1

Physical Activity and Health

The correlation between bike-share use in the past 28 days and exercise in minutes in the past week (Figure 10) indicates little to no relationship. Figure 10 also suggests that many frequent bike-share users may not consider their bike-share trips to be "exercise by bike," given that some report zero minutes of exercise with considerable bike-share use (although the recall windows do differ on the two measures—i.e., 1 week for exercise, 4 weeks for bike-share use). It is possible that using electric-assist bicycles, which require less exertion, lead people to discount the exercise they do get or that their trips are less than the minimum of 10 minutes of sustained physical activity.

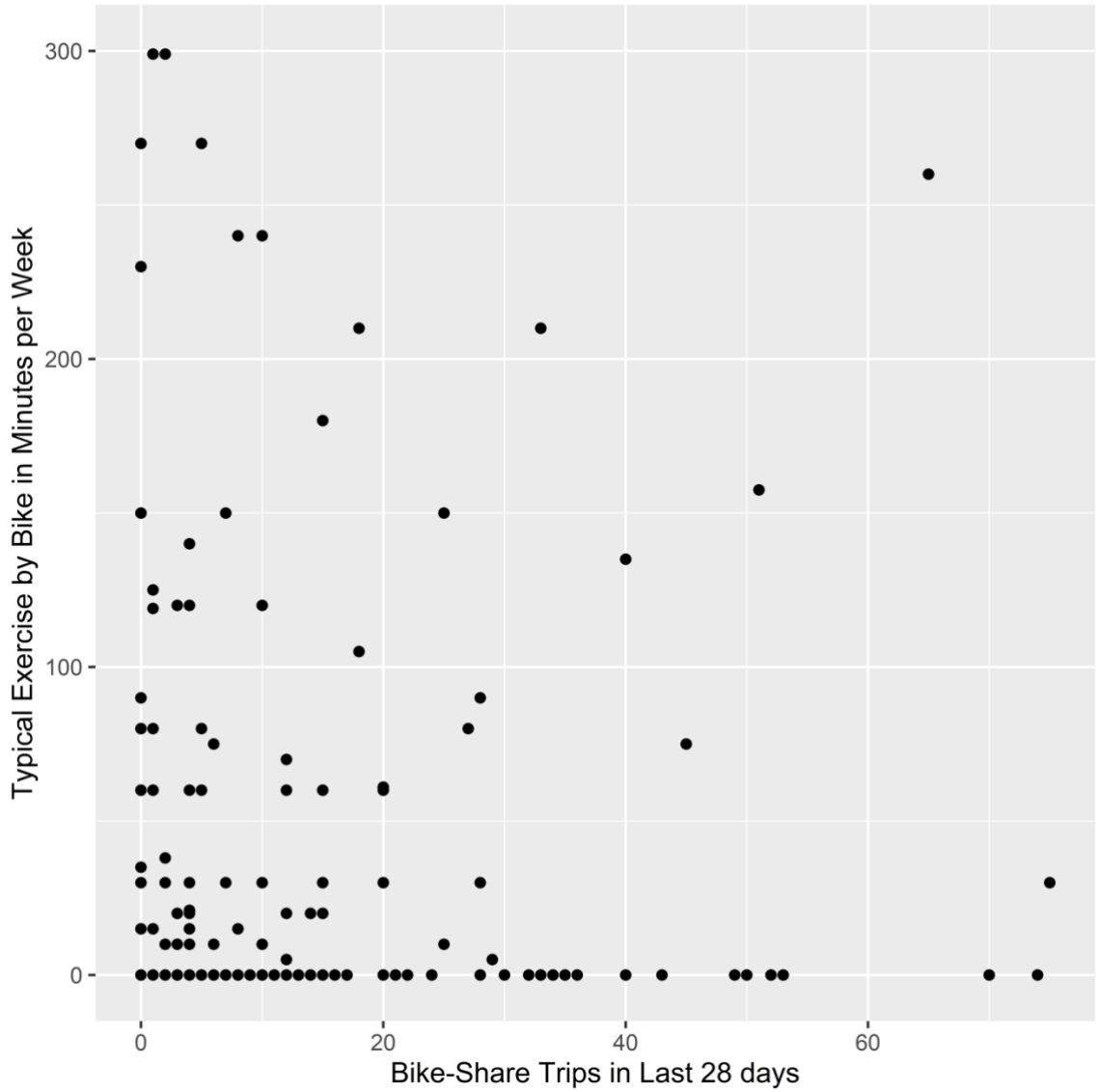

Figure 10. The relationship between bike-share use and exercise by bike

While the frequency of bike-share use does not seem to correlate with exercise by bike, it does seem to correlate with general physical activity (as measured by the number of days of exercise) (Figure 11). People who indicated that they exercised 6 or 7 days in the past week tended to also use bike-share more frequently. However, Figure 11 also shows that the pattern of bike-share frequency is almost the same for people doing different amounts of exercise in a week—i.e., for most levels of exercise shown at the top of each column, the horizontal histograms show that most people use bike-share infrequently.

In the household survey, the median days of exercise increased from 4 to 5 between the two waves of the survey. This suggests that the possibility that the bike-share service has had some positive effect on physical activity. However, this result may be due to another change (besides bike-share) between 2016 and 2019, such as the provision of more bicycling infrastructure or other non-transportation exercise opportunities.

The bike-share user survey shows a moderate correlation between physical activity and general bicycling frequency. Figure 12 shows that people who exercise four or more days a week are most likely to be every-day bicyclists, while people who exercise less report bicycling less frequently. However, the trend in bicycling frequency is consistent across all exercise responses, i.e., bike-share users are nearly all "bicyclists." Only 3% of the bike-share survey respondents reported never riding a personal bike.

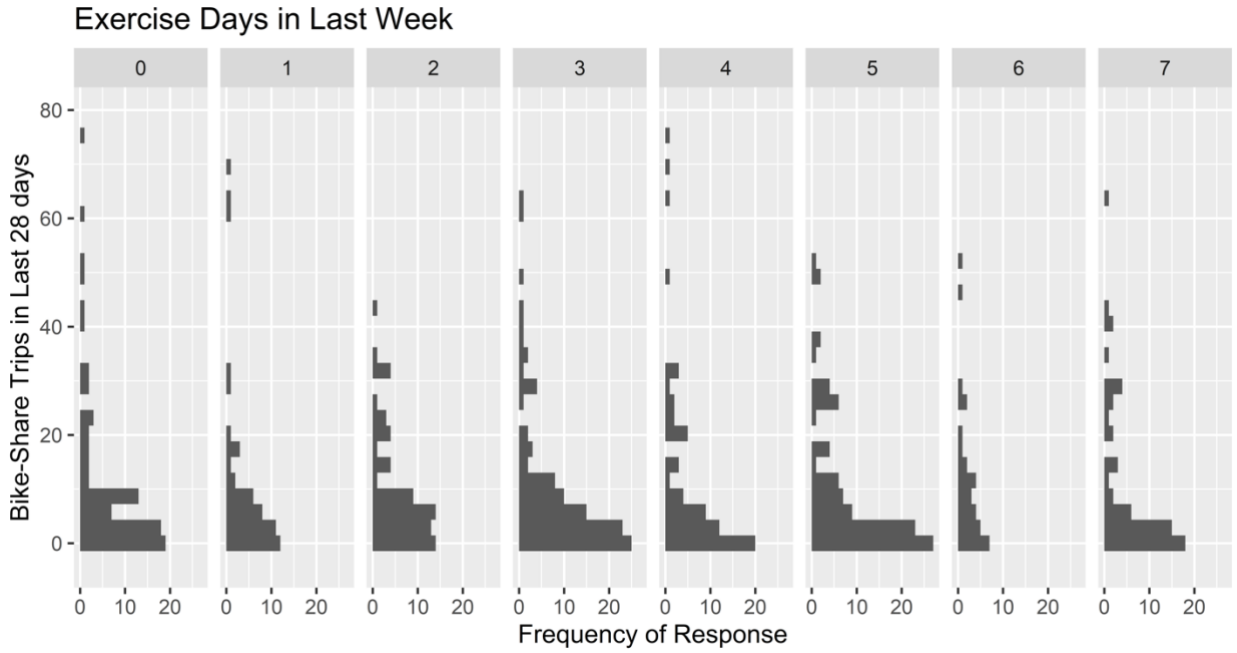

Figure 11. The relationship between bike-share use and exercise days in the week prior to the survey

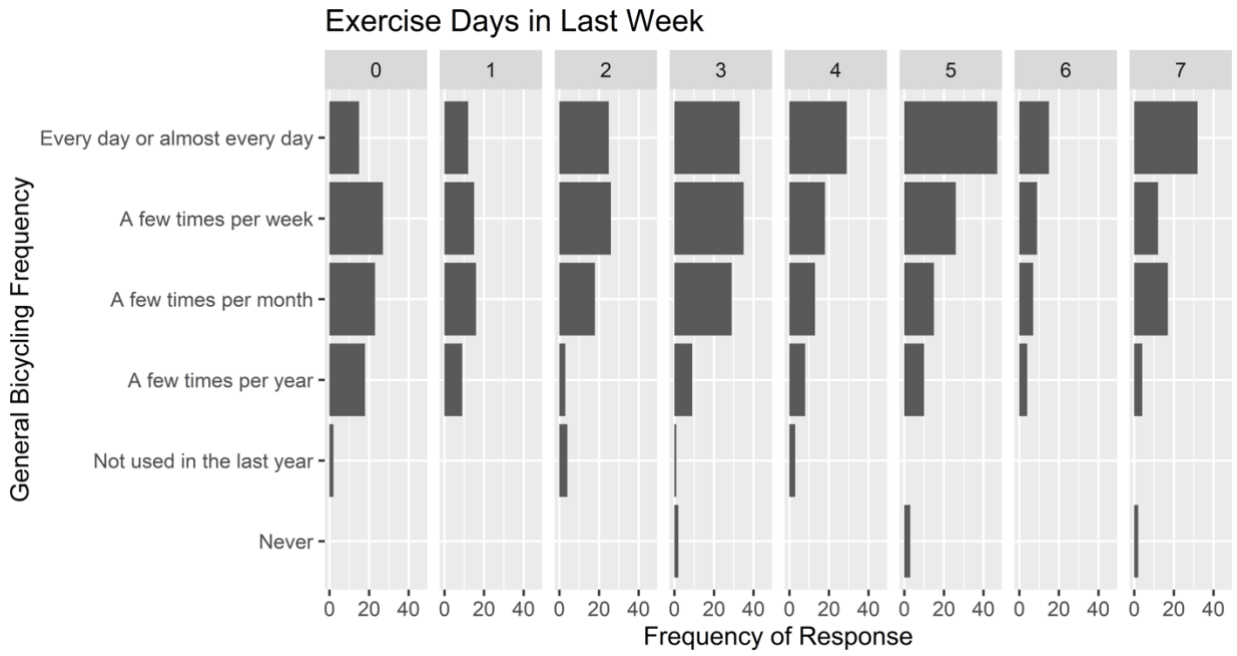

Figure 12. The relationship between general bicycling frequency and physical activity among bike-share users

Bike-Share Service Effects on General Travel

Past individual level bike-share research has focused on bike-share uses, but little is known about how bike-share services influence non-users, and few studies have used before-and-after designs to examine behavior and attitudinal change. The analysis in this section focuses specifically on the household before-and-after repeat cross-sectional survey data. While the data is not a panel (repeated measures of the same participants), the differences between the two survey waves suggest potential ways bike-share has affected travel of users and non-users. Additionally, we conduct the before-and-after comparisons by city and for a control group to ensure the differences are not based on differences in regional response rates.

Weekly Travel Modes

The questions from the household survey used to analyze the total travel by mode data are as follows:

During the last 7 days (up to yesterday), on how many days did you:

Drive or ride in a car?

Ride on a bus or train?

Walk outdoors for more than 10 minutes at a time?

Bicycle for any purpose?

The results, summarized in Table 8, show that most respondents drive frequently, seldom take transit, and rarely bike (except Davis residents). This pattern is especially pronounced in West

Sacramento and the Sacramento control neighborhood. Bicycling is much more common in Davis and to some extent in the bike-share service area of Sacramento. Mean differences in mode frequency before and after the initiation of bike-share are generally small (Table 8), although the percent differences can be substantial for less frequent modes (Table 9). For example, weekly transit use declined in all four areas; but this large percentage change reflects the low average days of transit use in the "before" survey. Reported days walking also remained stagnant, with small increases in Davis and the Sacramento control group and no change in the Sacramento treatment group or in West Sacramento. However, walking is by far the most varied travel mode within and between areas (results not shown).

Bicycling declined in all areas except for the Sacramento control neighborhood, where we observed a slight increase in bicycling. This slight decrease in reported biking in the Sacramento treatment group and the increase in reported biking in the Sacramento control group could be attributed to a variety of societal, economic, and built environment (e.g., bike lane installation) factors, and suggests that the launch of the bike-share alone did not change levels of bicycling in Sacramento, Davis, or West Sacramento.

Table 8. Mean days per week using various modes

City	Driving	Transit	Walking	Biking
Davis (Before)	4.8	0.9	4.4	2.3
Davis (After)	4.7	0.9	4.8	2.1
Sacramento Control (Before)	5.6	0.5	3.5	0.5
Sacramento Control (After)	5.4	0.4	4.0	0.7
Sacramento Treatment (Before)	5.5	0.6	4.5	1.2
Sacramento Treatment (After)	5.2	0.5	4.5	1.0
West Sacramento (Before)	5.8	0.4	3.8	0.9
West Sacramento (After)	6.0	0.2	3.8	0.6

Table 9. Percent change in days per week using various modes

City	Driving	Transit	Walking	Biking
Davis	-3.8%	-1.1%	8.5%	-5.3%
Sacramento (control)	-3.9%	-22.4%	12.1%	46.7%
Sacramento (treatment)	-5.3%	-13.6%	0.3%	-14.1%
West Sacramento	2.8%	-55.2%	-0.2%	-35.7%

Typical Weekly Vehicle Miles Traveled

We examine the before-and-after effect of bike-share on vehicle-miles traveled (VMT) using the following survey question: "*During a typical week (7 days), about how many miles do you drive? Please do not include any driving while 'on the clock' for your job."*

Results from the two waves of the household survey show negligible or small changes in VMT. Davis respondents' median VMT remained the same, whereas the Sacramento control area saw a slight increase (Table 10). However, there were small but notable decreases in the West Sacramento and the Sacramento treatment, from a median of 70 to 60 miles and 50 to 40 miles, respectively. Figure 13 shows the distribution of the self-reported VMT data, with most people reporting less than 100 VMT per week. The median VMT of the Sacramento control area is 25-50% greater than that of the Sacramento treatment area, which could be due to the treatment area's proximity to the central business district of Sacramento. An important distinction is that all regions in the bike-share service area reported either similar or less VMT after the bike-share implementation. It is unclear why the Sacramento control area had an increase in median VMT, nonetheless, this difference between the control and treatment areas suggests that either the general VMT trends of the suburban control and the more urban treatments are in opposite directions and/or that the bike-share service has reduced VMT to some extent.

Table 10. Median vehicle miles traveled per week by city

City	Before		After	
	Median	Std. Dev.	Median	Std. Dev.
Davis	40 mi	105 mi	40 mi	117 mi
Sacramento (control)	75 mi	113 mi	82.5 mi	137 mi
Sacramento (treatment)	50 mi	101 mi	40 mi	97 mi
West Sacramento	70 mi	113 mi	60 mi	119 mi

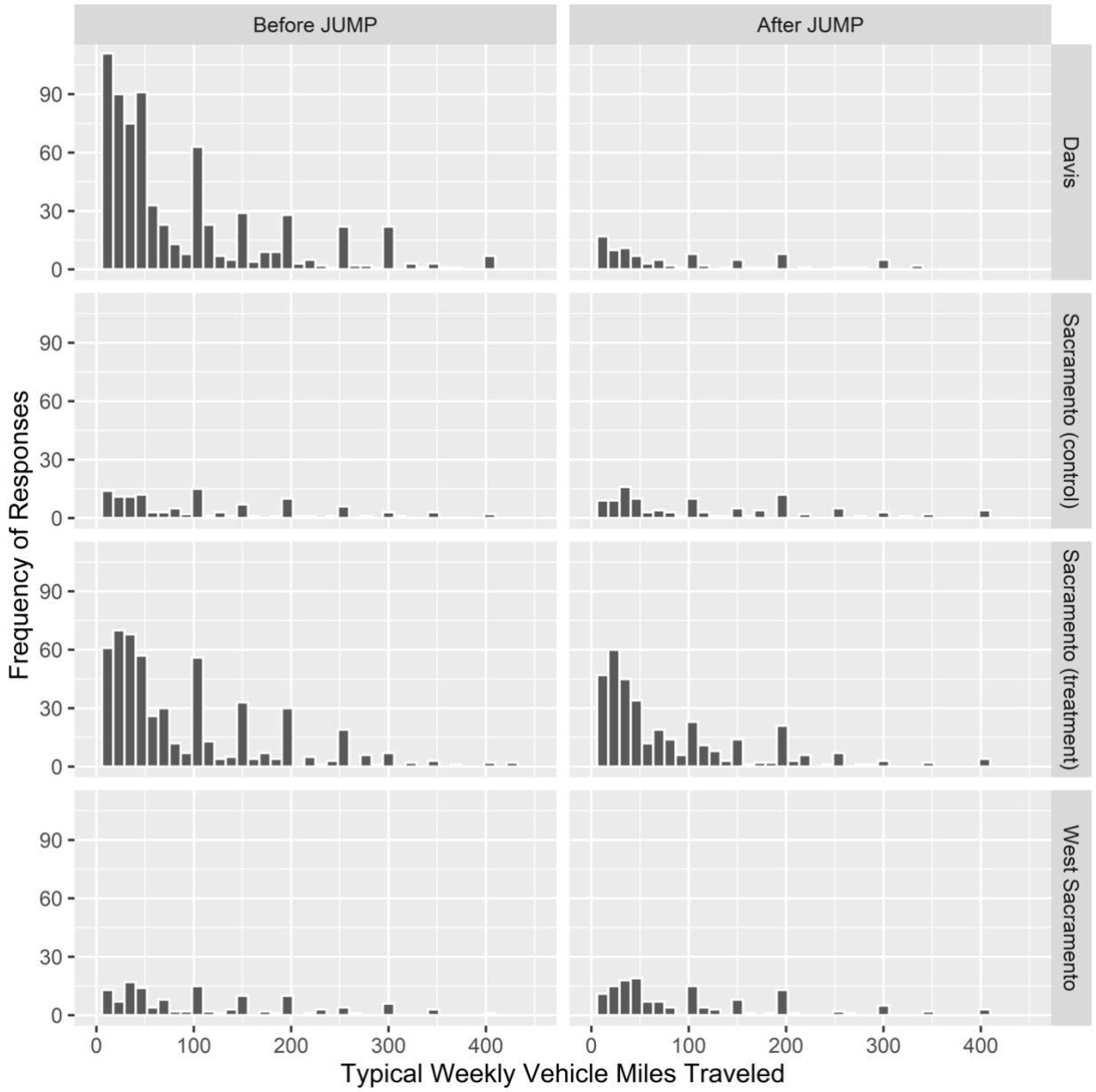

Figure 13. Distributions of typical vehicle miles traveled (VMT) per week by city and survey waves

Change in Bicycling Behavior and Attitudes

Bicycling behavior and attitudes changed in notable ways in 3 three years between the two household surveys. The self-reported number of days bicycled in the last 7 days using either a privately-owned bicycle or the bike-share service dropped from 1.7 days to 1.1 days between 2016 and 2019. Although bicycling declined overall, users of the bike-share service reported more daily bicycling (2.0 days on average in the past 7 days) in 2019 than the averages across the entire sample in either period. While this does not necessarily mean that the bike-share service caused them to bicycle more frequently, it does indicate that users of the bike-share

service bike more than average. The daily bicycling among the bike-share survey users is even higher than for the household-survey users: 2.8 (vs. 2.0) days on average in the past 7 days. As noted earlier, this high rate may reflect our method of recruiting bike-share users, which was likely to over-represent frequent bike-share users. In fact, a small number of the user-survey participants use bike-share at much larger magnitudes than the norm: the median frequency of bike-share use in the past 28 days is 5 trips, while the mean is 12.3 trips, and the maximum is 218 trips. It is not clear whether the small group of high-frequency bike-share users bicycled at much greater rates before the bike-share service, or whether the bike-share service has caused a large increase in their bicycling.

Although the frequency of bicycling declined on average, attitudes toward bicycling across many dimensions saw consistent but small shifts in the positive direction (see Figure 14 and Figure 15). In the case of bicycling and bike infrastructure, for all locations, the share of respondents agreeing or strongly agreeing with the attitudinal statements in the household survey is higher in the second wave than the first wave (Figure 14). The largest change is for agreement with the statement "bicycling is a normal mode of transportation in my community." This finding suggests that the bike-share service is shifting residents' attitudes about travel norms in places that did not already have strong bicycling norms (i.e., areas other than Davis). Attitudes toward bicycling comfort and availability of appropriate bicycling infrastructure also became more positive over time, suggesting that improvements to bike infrastructure may be another important cause of the shift in bike attitudes. These positive attitudes did not change with the introduction of the bike-share service as much in Davis as they did in the other study areas. The one bicycling-focused statement for which agreement did not change much in any city was "I like riding a bike." It is possible that this statement represents an attitude that is more stable over time, reflecting the accumulation of experience with bicycling over a lifetime, rather than an attitude that is easily changed by changes in the environment or availability of a bike-share service. Interestingly, responses to this statement are consistent across the areas even though the cities have very different perceptions of bicycling norms on average, and in all areas, they are overwhelmingly positive.

Shifts in bicycling attitudes are smallest in Davis, as might be expected, but in some cases are largest in the Sacramento control area, where changes were not expected. This finding suggests that bike-share may have an important influence on not only residents within the service area, but also on nearby residents. Residents of the control area might have experienced bike-share service near their place of employment, for example. However, only 6% of the Sacramento control area residents reported having ever used the bike-share service. Given that the adoption rate in this area is lower than average, this pattern suggests that bicycling attitudes during this period may have been affected by factors other than the bike-share service, although it is possible that seeing and hearing about the bike-share service is sufficient to bring about changes in attitudes.

Although the share of respondents expressing positive attitudes towards bicycling grew from 2016 to 2019, the share expressing positive attitudes toward cars declined, though to a lesser extent and not at all for the Sacramento control area residents (Figure 15). Attitudes toward

transit were slightly less positive in 2019 except for in Davis where they stayed roughly the same as in 2016. If bike-share is a cause for the shifts in transit attitudes, the effect is clearly less than that on bike attitudes. In general, attitudes toward cars remained positive and attitudes toward transit remained mixed (Figure 15).

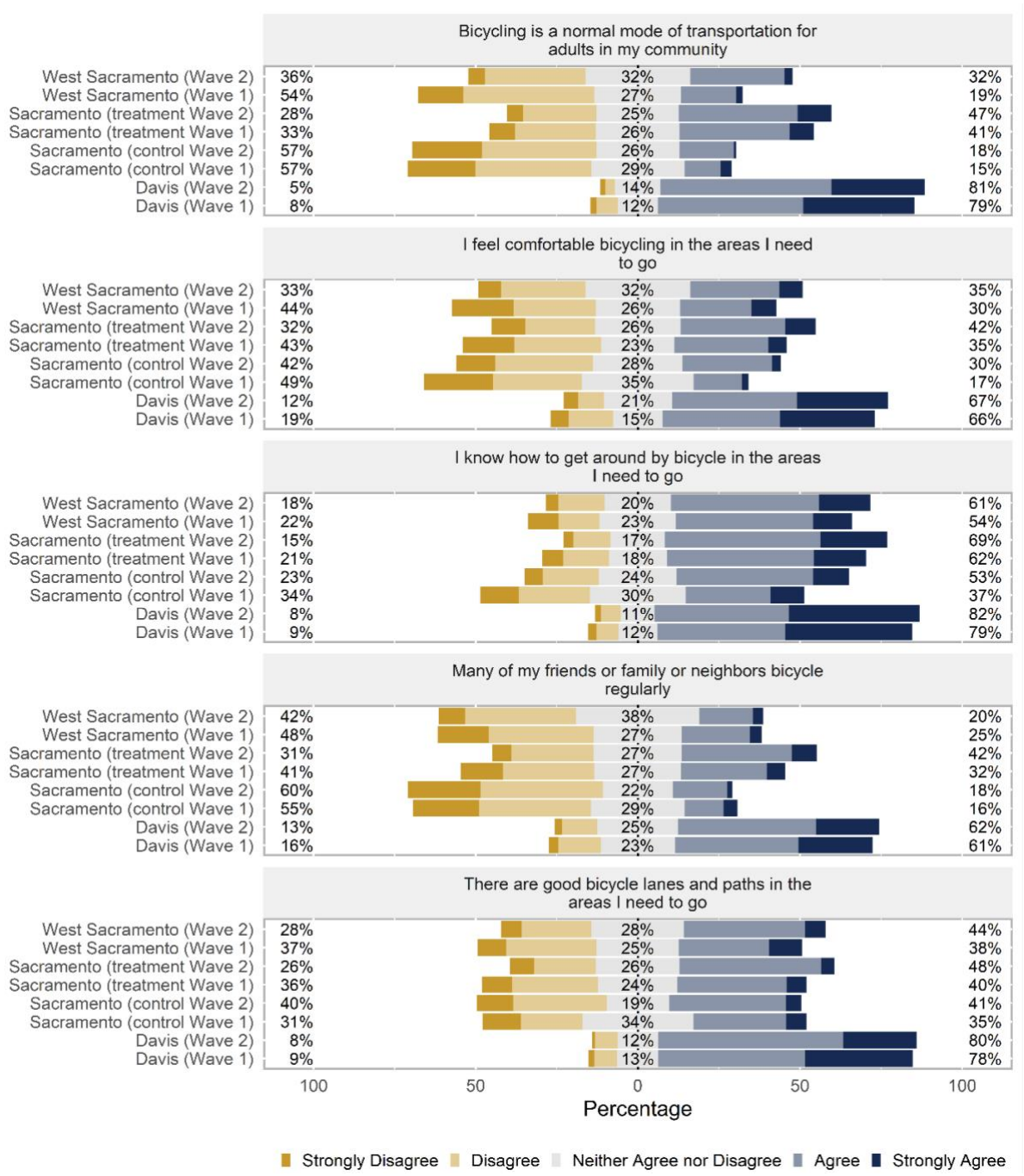

Figure 14. Household survey respondents' attitude towards bicycling and bicycle infrastructure. Reported percentages on the left, center, and right of the plot indicate percentages of negative (Strongly Disagree and Disagree), neutral, and positive (Agree and Strongly Agree) responses, respectively.

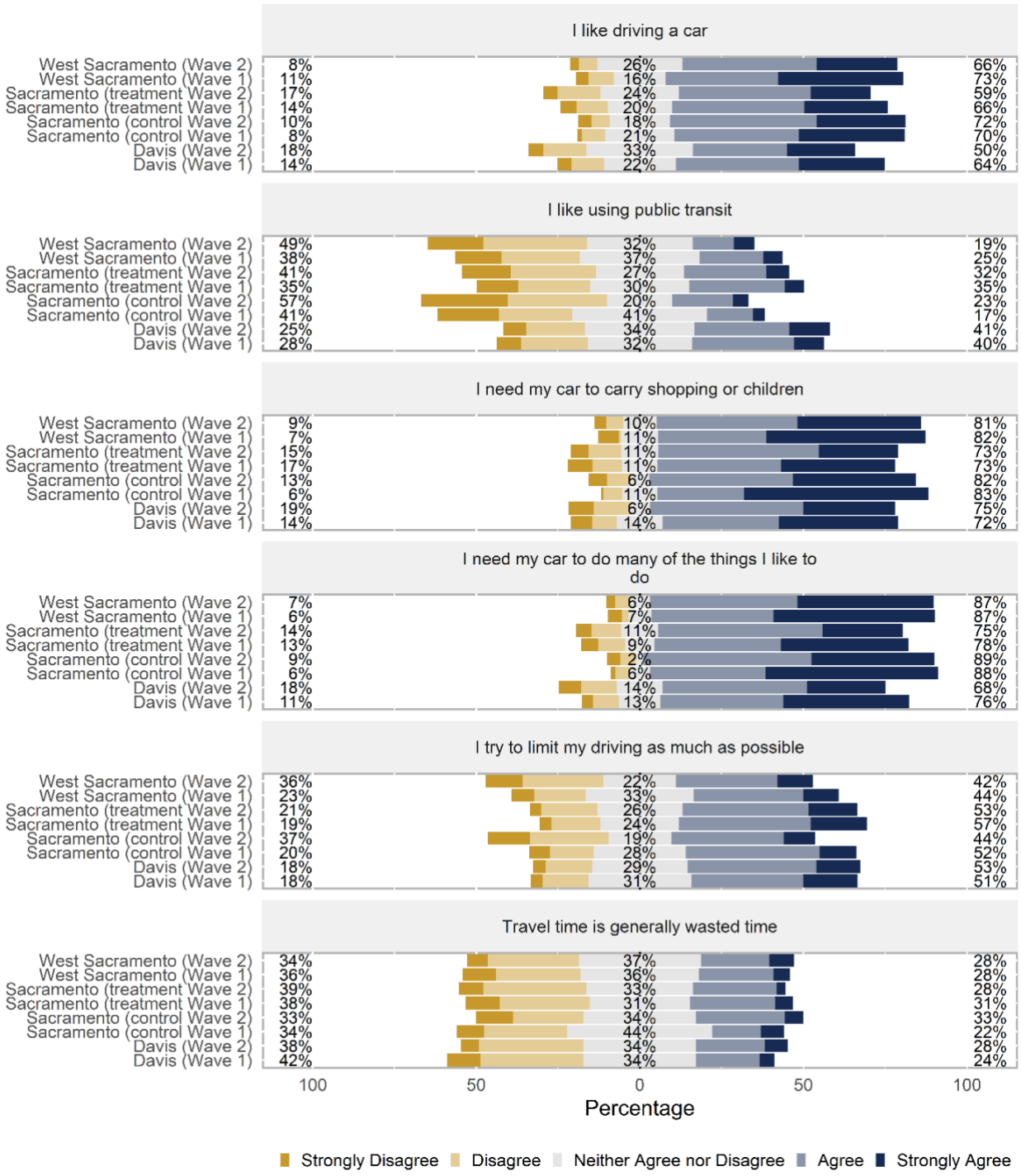

Figure 15. Household survey respondents' attitude towards car, transit, and travel time. Reported percentages on the left, center, and right of the plot indicate percentages of negative (Strongly Disagree and Disagree), neutral, and positive (Agree and Strongly Agree) responses, respectively.

Resident View of Bike-Share and Scooter-Share System

Users of bike-share or scooter-share services have slightly more positive attitudes toward the users of bike- or scooter-share compared to non-users (Figure 16). When asked about being annoyed by bike and scooter riders, users and non-users express similar attitudes that lean toward disagreement (not annoyed). Users are only slightly less worried than non-users about colliding with a bike or scooter as a pedestrian or driver. Differences between users and non-users with respect to annoyance and worry vary by question (ranging from 3% to 14% difference in the percent disagreeing; Figure 16). Both users and non-users tend to agree that e-scooters look fun, with a slightly higher share of positive responses from users. When asked about parking behavior, respondents are generally split as to whether users park responsibly or not. Non-users are slightly less likely to agree that bikes and scooters are parked responsibly, but the differences are not large in absolute terms (1-10% difference in percent agree or percent disagree). Also, respondents more commonly perceive e-bikes as being parked responsibly than they do e-scooters (Figure 16).

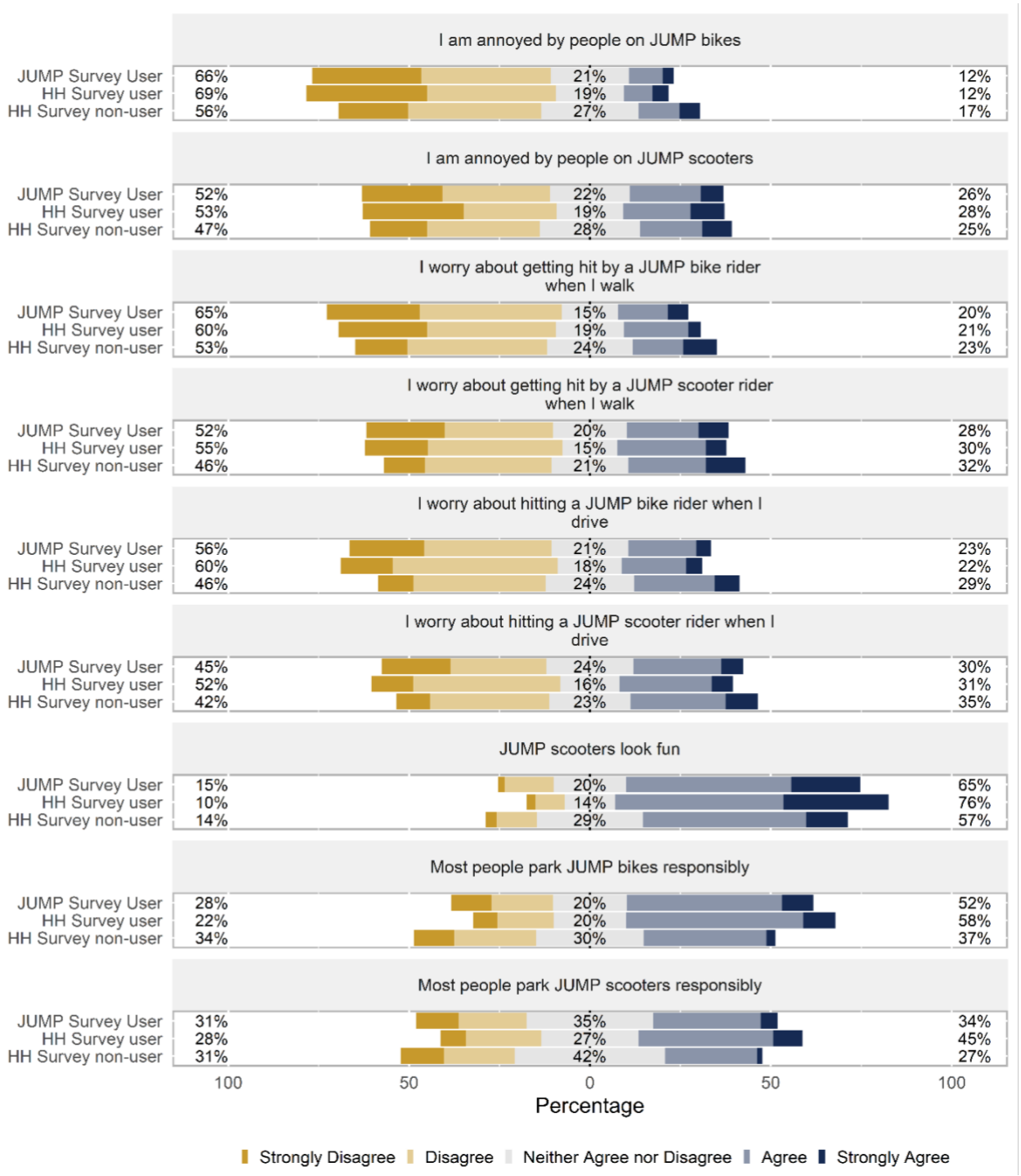

Figure 16. Attitudes toward and perceptions of bike-share and scooter-share users by bike- and scooter-share users and non-users. Reported percentages on the left, center, and right of the plot indicate percentages of negative (Strongly Disagree and Disagree), neutral, and positive (Agree and Strongly Agree) responses, respectively.

The majority of users and non-users were able to answer correctly a series of questions pertaining to rules and regulations of the bike-share service (with the exception to the rule about parking) (Table 11). The users consistently answered more statements correctly in comparison with the non-users, but large portions of users were still often wrong, indicating a need to educate users. This was most apparent in the question about parking. Most users and non-users alike did not know that the local regulation required e-scooters to be parked at (not locked to) bike racks, but most users did know that the e-bikes should be parked *at* bike racks. We should note that during the survey, local education campaigns about parking regulations were ongoing with very limited parking enforcement.

In addition to knowledge of the rules and regulations, most household survey participants indicated they had seen both the e-bikes and e-scooters and nearly all users reported having seen both (Table 12). This ensured that respondents were at least minimally familiar with the service we were asking about, but also that the service is inherently visible even for non-users.

Table 11. Bike- and scooter-share knowledge among the survey respondents

Knowledge Query	Response	HH Survey Non-User	HH Survey User	Bike-Share User Survey
Jump bikes are electric assisted	FALSE	14%	4%	1%
	TRUE	86%	96%	99%
Jump bikes are supposed to be parked at bike racks	FALSE	53%	37%	21%
	TRUE	47%	63%	79%
Jump scooters do not have to be parked at bike racks	**FALSE**	28%	33%	39%
	TRUE	72%	67%	61%
Jump scooters are not supposed to be ridden on sidewalks	FALSE	26%	26%	17%
	TRUE	74%	74%	83%

Table 12. Noticing the shared e-bikes and e-scooters

Perception	Household Survey: Non-User	Household Survey: User
No, I've never noticed them	2%	0%
Yes, I've noticed the Jump bikes and scooters	77%	96%
Yes, I've only noticed the Jump bikes	21%	4%
Yes, I've only noticed the Jump scooters	<1%	0%

Bike-Share Equity

Bike-share is thought to be an innovative mobility service that can serve poor and ethnic minorities who have historically been neglected and marginalized by transportation planning. However, quantifying how bike-share improves transportation equity is a challenge. As we noted in our survey sample characteristics above, the demographics of the users and non-users are similar (see Table 1), but bike-share users, compared to non-users, are more likely to be young and more likely to be students (Figure 4Figure 4).

However, the similarities between users and non-users do not mean that all social groups are using the service. For example, the survey may not have captured those in most need of alternative transportation options given large underrepresentation of low-income (<$50,000) households, and Black and Hispanic residents (see Table 1). It is also telling that we only received a single survey from members of the Boost program that provides access to the service for low-income residents.[2] Nonetheless, a higher percentage of carless household residents are using this bike-share service (illustrated in Figure 4), which may contribute to transportation equity if the lack of car access is a constraint and not a choice.

Census Block Group Level Analysis of Equity

To estimate the socio-demographics of bike-share users, cities and regions often use the population statistics in the census blocks where trips begin and end. However, we found that the percentage of a socio-demographic group in a census block did not correlate with the percentage of that group among e-bike share users who start or end their trips in those census blocks. This finding suggests that census block data for an area may not be a reliable indicator of bike-share user socio-demographics. This is especially important for cities looking to understand if bike-share is being used by people with low-incomes and racial minorities.

We used our individual level survey data in connection to census data to evaluate how effective the traditional approach of correlating trip counts with census data is in estimating usage by socio-demographics. In the bike-share survey, we asked about the last three Jump trips, including data on origins and destinations, for a total of 1148 trips, which were reduced to 976 trips after data cleaning. We found little correspondence between the characteristics of bike-share users and the demographic characteristics of the census block groups in which their trips started or ended. Students who reported bike-share trips predominantly started their trips in block groups with a *low* (<25%) percentage of students in the population; however, as compared to non-students, students did start or end a higher percentage of their trips in block groups with a high (>25%) percentage of students (Figure 17). However, students were the only socio-demographic group whose trip locations showed any correspondence with census data. The racial demographics in the areas of starting and ending points for trips did not correspond with the racial demographics of users making those trips. For example, both white and non-white users reported trips starting and ending in block groups with similar distributions of non-white people (Figure 18). We found the same lack of correspondence with income: low income

[2] People that are eligible for SMUD Energy Assistance Program, Women, Infants, and Children (WIC), Sacramento Housing and Redevelopment Agency (SHRA), PG&E CARE, and Cal Fresh can participate in the Jump Boost Plan.

respondents start and end their trips in mostly mixed income block groups, just like middle- and high-income respondents (Figure 19). We attempted the same analysis for Black, Asian, and Hispanic respondents but the numbers of such respondents and their trips were so few that the results were inconclusive. Although the trip sample size is small, these results suggest that commonly used trip-level origin/destination metrics of bike-share use may not accurately reflect the socio-demographics of bike-share users.

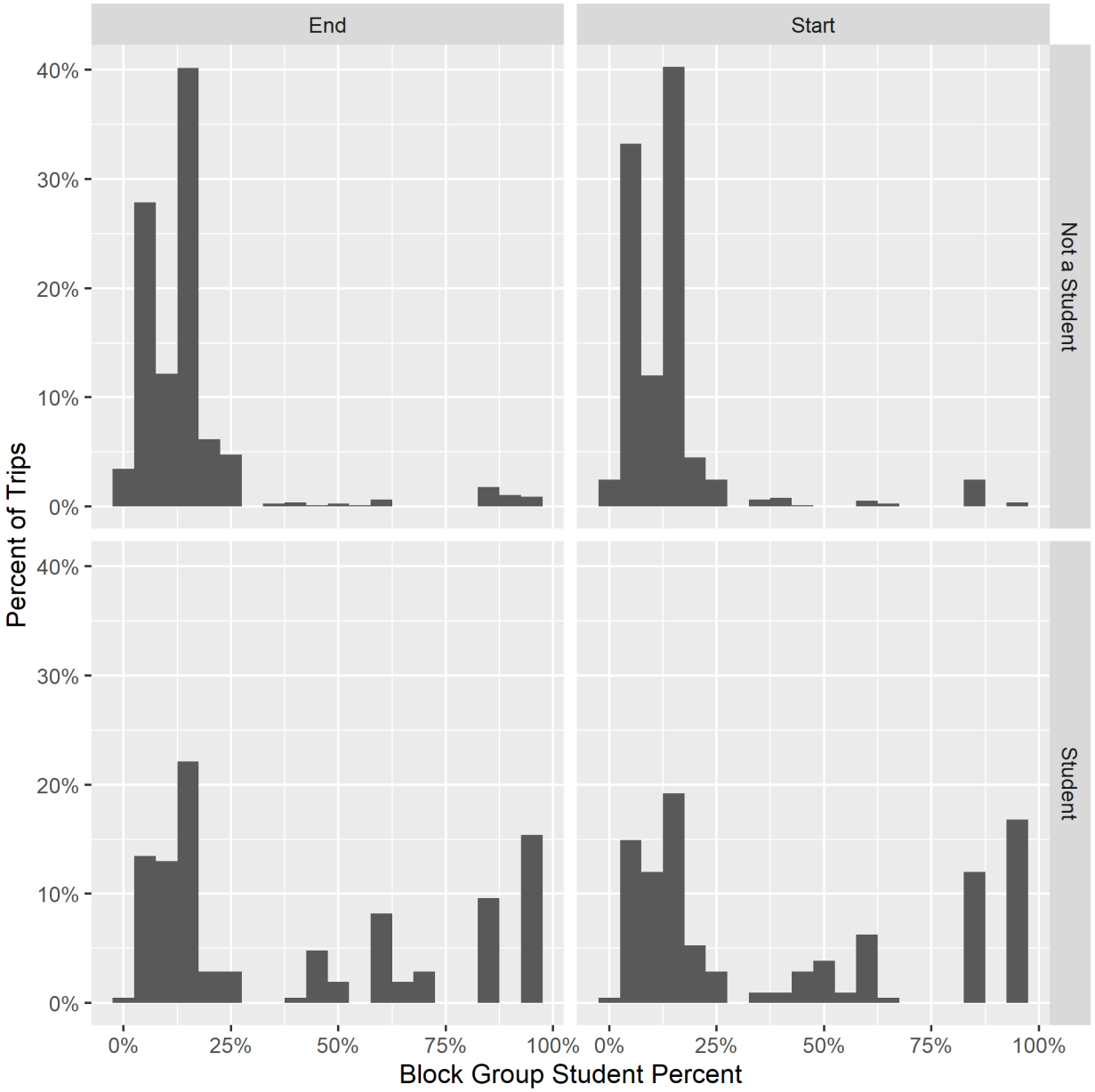

Figure 17. Census estimated percentage of students in block groups at the starting and ending locations of trips by students and non-students.

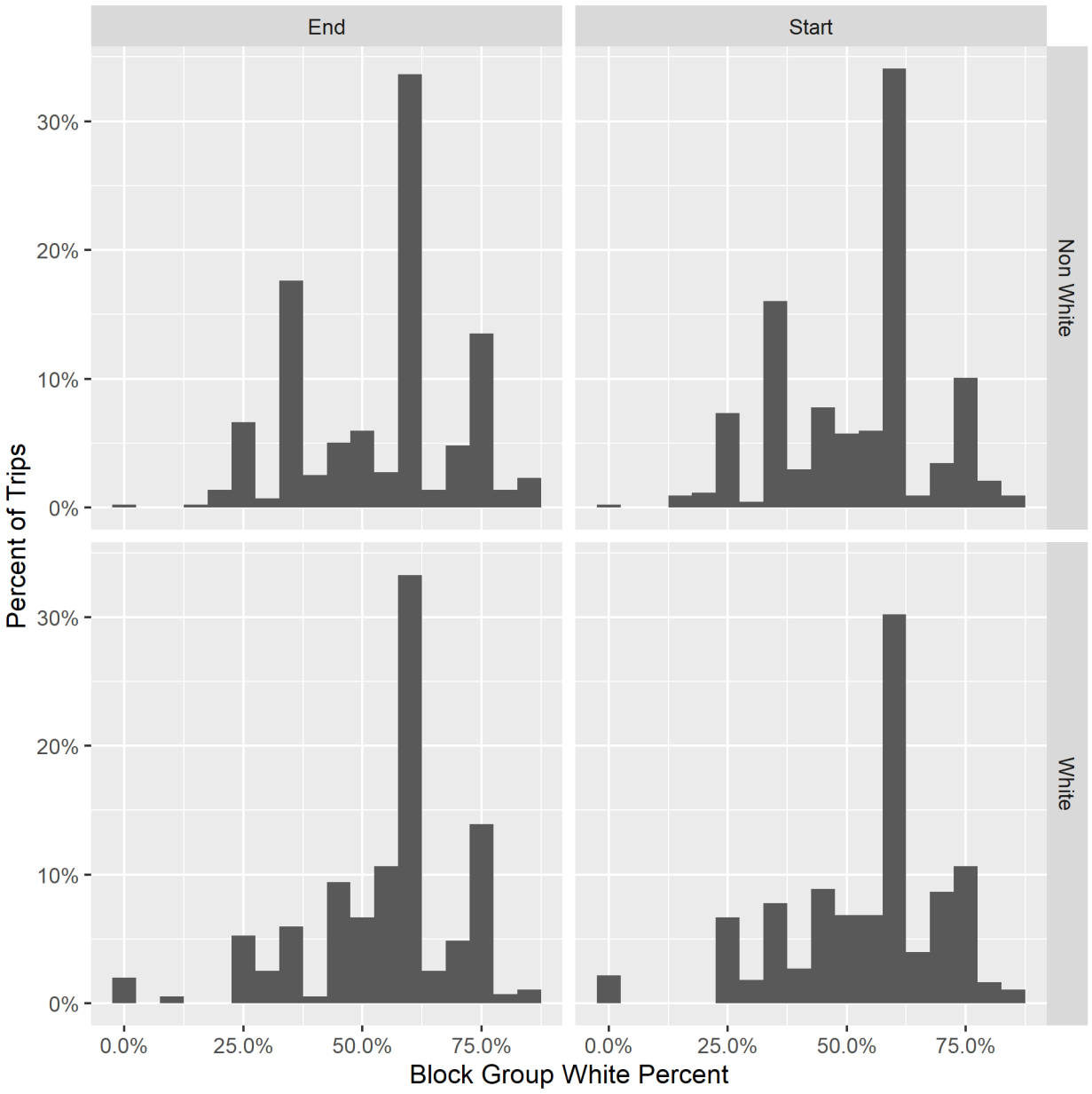

Figure 18. Census estimated percentage of whites in block groups at the starting and ending locations of trips by white and non-white respondents.

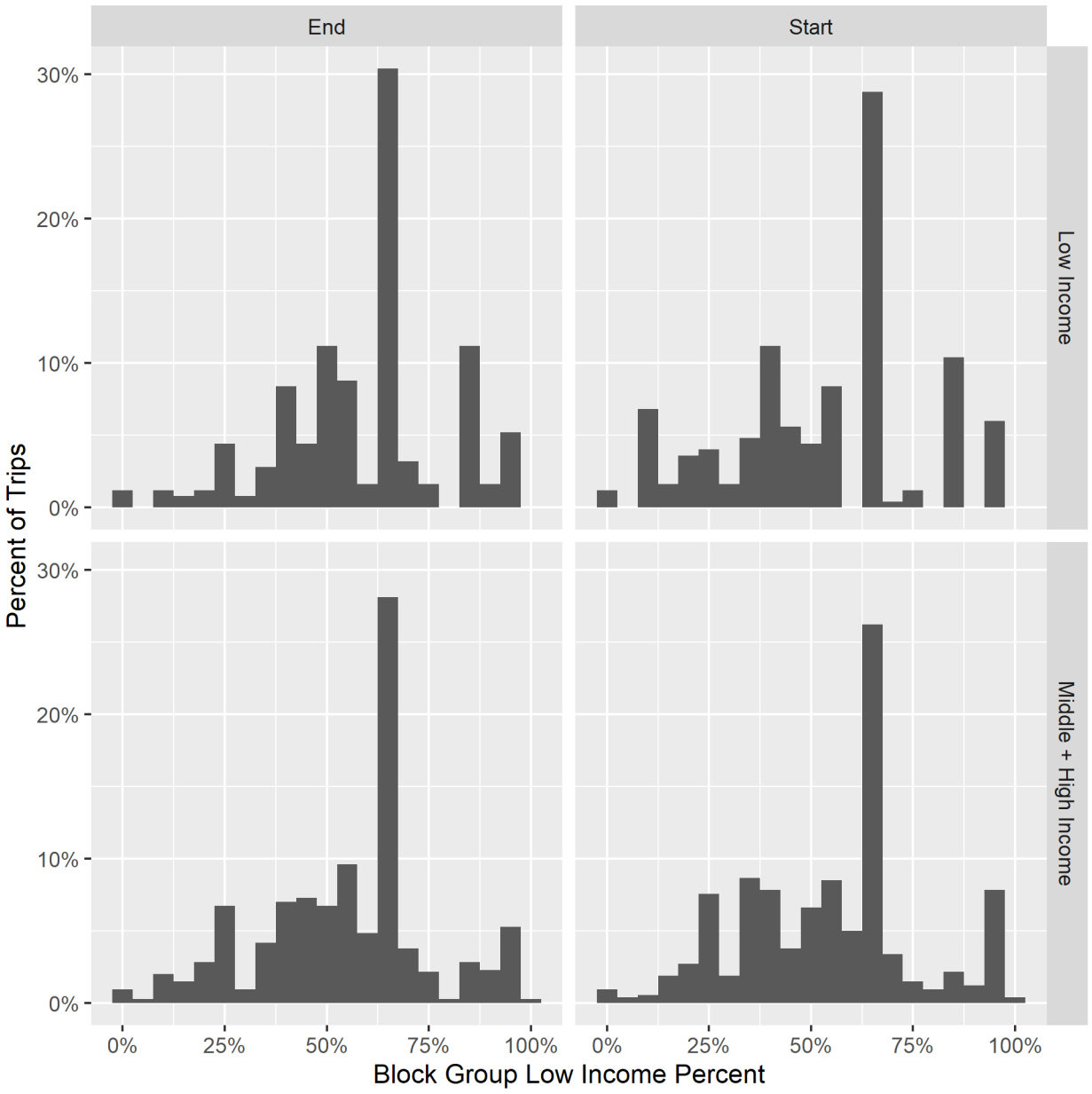

Figure 19. Census estimated percentage of low-income households in block groups at the start and end locations of trips by low-income compared to middle- and high-income respondents.

Bike-Share Service Effects on Users

Bike-Share Users Trip Pattern

The reported bike-share trips (most recent three from each respondent) tended to be of only short-distances (Figure 20). Most of the trips were shorter than 5 miles, with a median of 2.1 miles. However, a small number of users reported long-distance travel with this service (not shown in Figure 20).

In addition to trip distance and trip duration, the trip start and end locations were collected by prompting the user to look at their smartphone application or online account and instructing them to place markers on a Google map for start and end locations and report descriptive statistics for their last three non-commute trips. We compared the reported distance and time data provided by the users to the calculated distance and time for the reported trips by origin and destination using the Google Maps API "bicycling" route. The comparison of reported and Google calculated distance distributions suggest that many users round to the mile when reporting their distances and ride farther than the distance of the "best" shortest path suggested by the Google Maps algorithm (Figure 20).

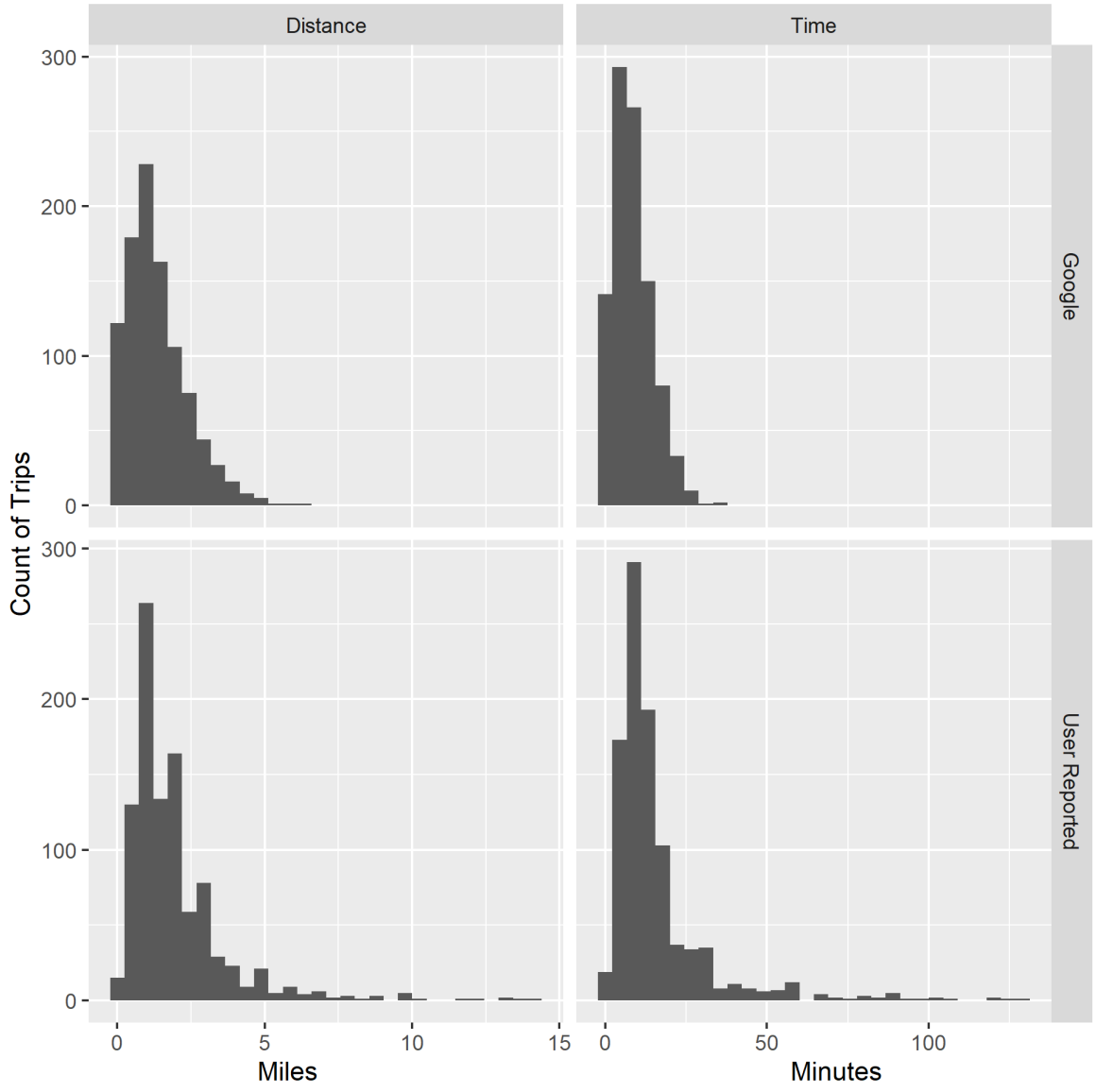

Figure 20. Bike-share users' trip distance and travel time distribution. The top panels ("Google") are calculated by Google Maps bike routing algorithm based on reported origins and destinations, bottom panel are the user reported distance and time after being prompted to consult their apps or user account for trip information.

Bike-share use frequency is also heavily skewed (Figure 21). While most respondents took only a few trips, some used the service extensively in the 4 weeks preceding the survey, and a few people used the service more than 100 times.

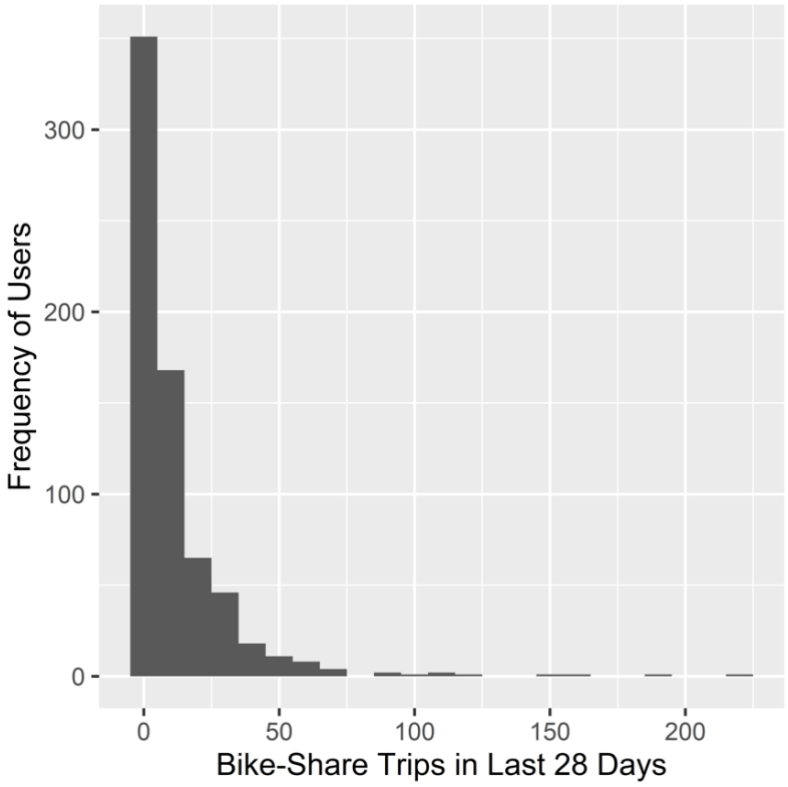

Figure 21. Bike-share use frequency in the last 4 weeks

Bike-Share Users Trip Purpose

Bike- and scooter-share users travel with a wide variety of purposes at varying frequencies (Figure 22). A large portion of respondents use the bike-share service frequently for work and school commutes, with many respondents apparently using the service for their daily commutes (e.g., five or more commute trips per week). The same is not true of the scooter-share service: usage is lower for those purposes and not a single respondent reported using the scooter-share for five or more trips per week. However, at the time of this survey, e-scooters were much less prevalent than e-bikes.

The bike-share service is used for shopping and errands more frequently than is the scooter-share service. This finding is consistent with open-ended responses in which respondents reported that they need a basket to carry things (which the e-bike provides, but the e-scooter does not). Figure 22 shows that respondents use the e-bikes and e-scooters for multiple purposes besides commuting, however high frequency use (i.e., darker shades in Figure 22; such as 3-4 and 5+ times/week) is much less common for these purposes other than commuting. The phenomenon where a particular trip purpose is common across the population of users but infrequent for any given user (light color bars in Figure 22) is especially evident for

traveling to or from restaurants, bars, or other entertainment establishments—the most common purpose across the users for which bike-share has been used at least once. Trips with the purpose of recreating or exercising show frequencies comparable to purposes such as visiting friends or family or work-related meetings. Given that only 3% of the user respondents lived outside of the Sacramento region, it is unlikely that the recreational use was only from tourists. Instead, it appears that residents use e-bikes and e-scooters for recreation and exercise at non-negligible frequencies (i.e., more than 15% of respondents report using the service for recreation one or more times a month).

E-scooter use is much less frequent than e-bike use in our survey. This may be due to the lack of e-scooter supply compared to e-bike supply at the time of the survey and/or the possibility that our recruitment is biased toward bike-share service users (e.g., during the first wave survey, e-scooters were not available, and since e-scooters do not have docks, we were less likely to tape fliers on e-scooters than e-bikes). However, when we asked respondents specifically about vehicle preferences, 59% of respondents always prefer an e-bike, 19% always prefer an e-scooter, and 22% say it depends. The open-ended responses from the 22% who responded that their vehicle preference "depends" suggest that some people prefer e-bikes for longer distance trips, when they need a basket to carry something, or when it is dark. Rarely did respondents provide a reason for preferring an e-scooter over an e-bike, nonetheless, when they did, common reasons were the desire for less physical effort to reduce sweating and that short trips were more convenient by e-scooter.

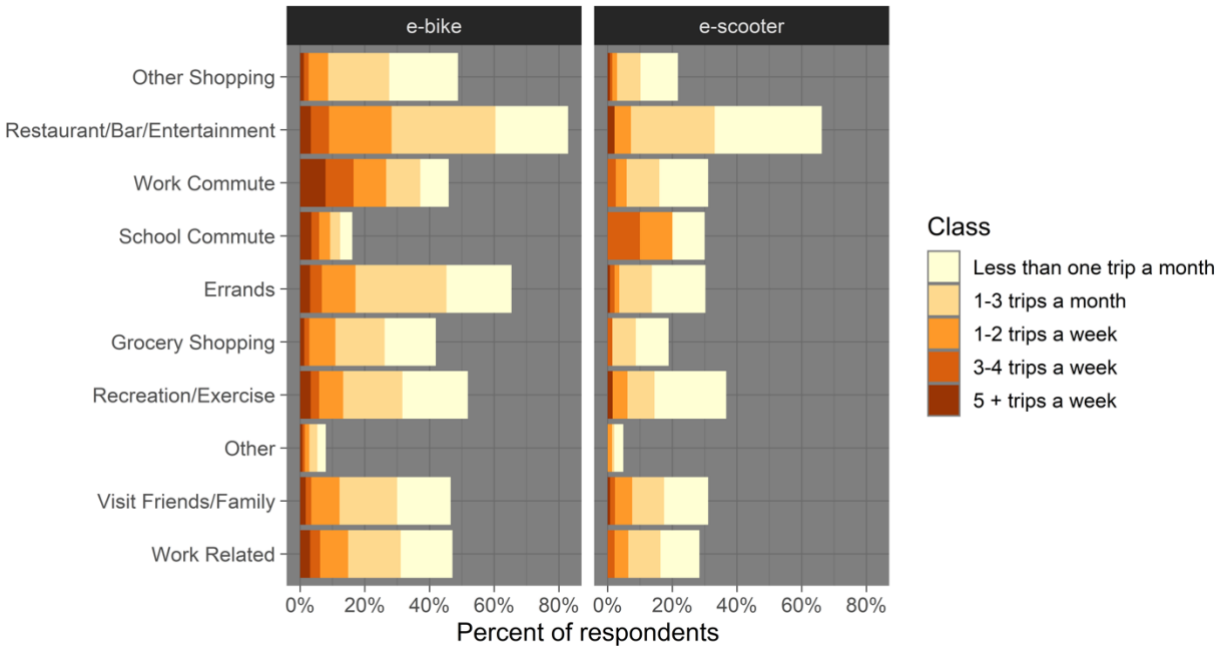

Figure 22. Bike- and scooter-share user frequency for different purposes

Bike-Share Effects on Other Mode Use

Connection to Transit

One of the potentially important roles for bike-share is as a first-mile or last-mile connection to transit. Nearly 50% of respondents said that they use a shared e-bike to connect to or from a transit stop at least once a month, and e-scooter users reported a similar connection to transit (Figure 23). However, only 8% of e-scooter users reported regularly (three or more times per week) connecting to transit, whereas 17% of e-bike users report regularly connecting to transit. These data suggest a considerable number of trips are linking people to public transit. However, when respondents report their trip data, less than 5% of respondents say they connected to or from a transit stop (not shown), suggesting current service integration with transit is more limited than is suggested by the overall impression that users have of how often they link to transit.. This low level of integration between bike/scooter share and transit could reflect the fact that the service area contains only two commuter rail stations, and light-rail service is found only in Sacramento. We did not survey users about specific connections to bus service, available in all three cities.

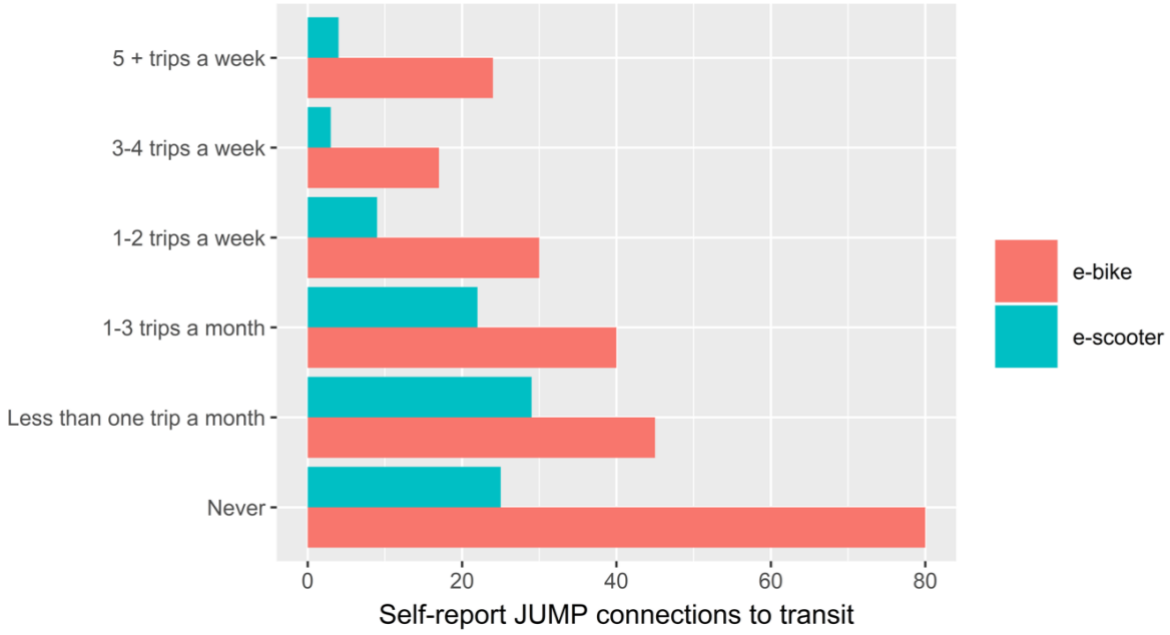

Figure 23. Bike-share user trips connecting to transit

Mode Substitution

We used three different survey questions to assess mode substitution. The first method relies on a retrospective counterfactual question, in which respondents are asked, "*If Jump was not available for this trip, how would you have traveled to this destination?*" Figure 24 shows respondents' reported mode substitution based on their last three e-bike trips (we did not collect this data on e-scooter trips). Walking (including skateboarding) is the single most commonly reported travel mode for which bike-share trips substitute (about 30%), but about 35% of bike-share trips would have been made by one of the forms of car travel (single

occupancy, carpool, and ride-hailing). This percentage is similar to findings from other surveys of dockless e-bike and e-scooter shares (Lime, 2018; Portland Bureau of Transportation, 2018). This high level of car-substitution may contribute to less driving in total, but self-reported household VMT is not always less for bike-share users (see differences in VMT by surveys in Table 1 or by city and user status in the household survey in Table 3). Importantly, reported VMT does not account for ride-hailed VMT, which is the largest reported type of car substitution (Figure 24). While it is not clear whether bike-share causes reduced VMT, the fact that a large percentage of respondents report car substitution suggests that bike-share may support less car-centric lifestyles. At the same time, it appears that bike-share use also induces additional travel: about 10% of trips would not have been made if the bike-share service had not been available, according to respondents. These trips represent new bicycle trips and should contribute to an overall increase in bicycling.

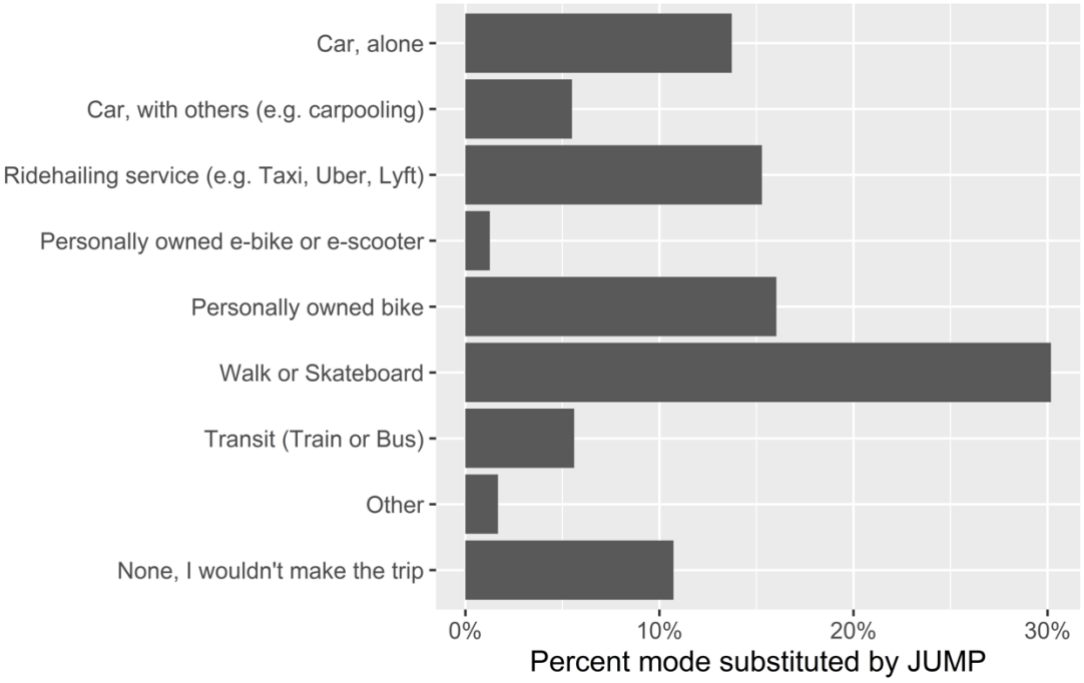

Figure 24. Bike-share user trip substitution for other modes of travel

A second way we assessed mode substitution was to ask respondents to report changes in the use of other modes since they began using the bike-share service (including any e-scooter use). As shown in Figure 25, the use of all other modes has reportedly gone down overall, though some respondents report an increase in the use of some modes since beginning to use the service. Ride-hailing and walking appear to have decreased the most, suggesting that bike-share use most often substitutes for these modes in agreement with the prior measurement of mode substitution. The fact that walking and transit have increased for some respondents suggests a potential complementary relationship with bike-share services. This is further evidence that some people use bike-share to get to and from transit, but it also indicates that walking to access the nearest available bike may be non-negligible. The respondents who report an increase in ride-hailing indicate that some find a complementary relationship, wherein ride-

hailing is used for one direction of a trip or when a bike-share bike is not available nearby. However, very few respondents report that behavior. The small portion of respondents who report an increase in the use of personally owned bikes is intriguing, suggesting the possibility that bike-share promotes bicycle use in general.

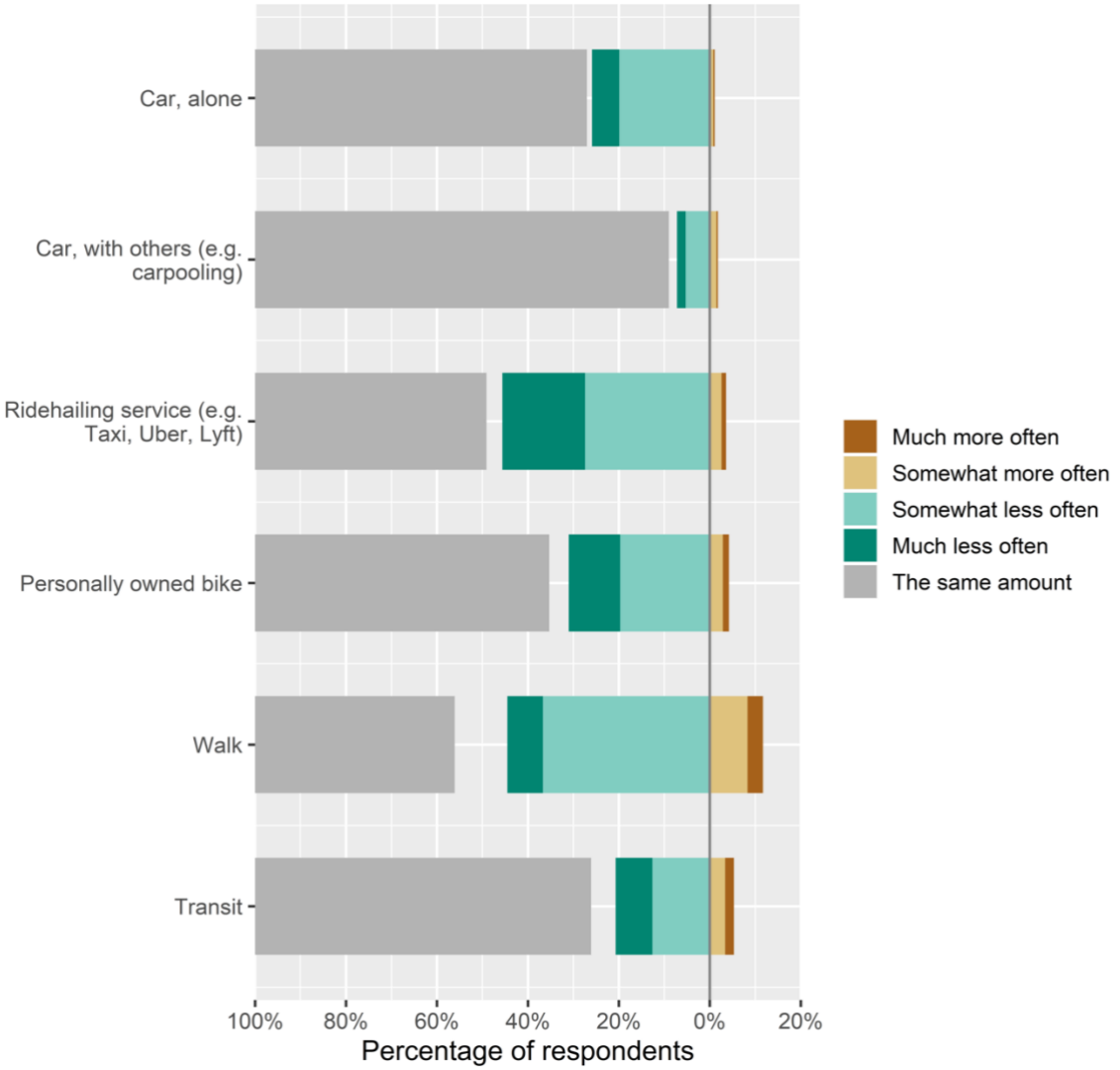

Figure 25. Self-reported retrospective change in mode use since using the bike- and scooter-share

A third way we assessed mode substitution was to ask the inverse of the second question, that is: "*How would you use of other modes change if the bike-share service (including e-scooter share service) were to shut down?*" (Figure 26). Most users said they would walk "somewhat more often" or "much more often." Many others said that they would take transit, ride-hail, drive, or use their personally owned bike. The results for this question generally mirror the results for the previous question, with increases in the use of all modes (versus decreases in the use of all modes). A large number of respondents saying that they would use their personally

owned bicycle more if bike-share service ended suggests, again, an effect of bike-share on bicycling in general.

The differences between Figure 25 and Figure 26 are most pronounced for transit and ride-hailing. While less than 30% of respondents said their use of bike-share has decreased their transit use, 50% of respondents said they would increase their transit use if bike-share service ended. The opposite is true of ride-hailing. While 50% of respondents said they have decreased their ride-hailing since using the bike-share service, only about 10% of respondents said they would increase their ride-hailing if bike-share service ended. These differences may be methodological artifacts that do not translate into actual behavior (because the questions are retrospective and prospective, respectively). But if actual behavior roughly follows these responses, this result suggests that bike-share users will not always return to their pre-bike-share modes. In other words, bike-share services may have a lasting effect on travel behavior, even if the service does not continue, by reducing ride-hailing and increasing transit use. This is a surprising finding and more research on this specific question should be done in cities that have seen micro-mobility services leave.

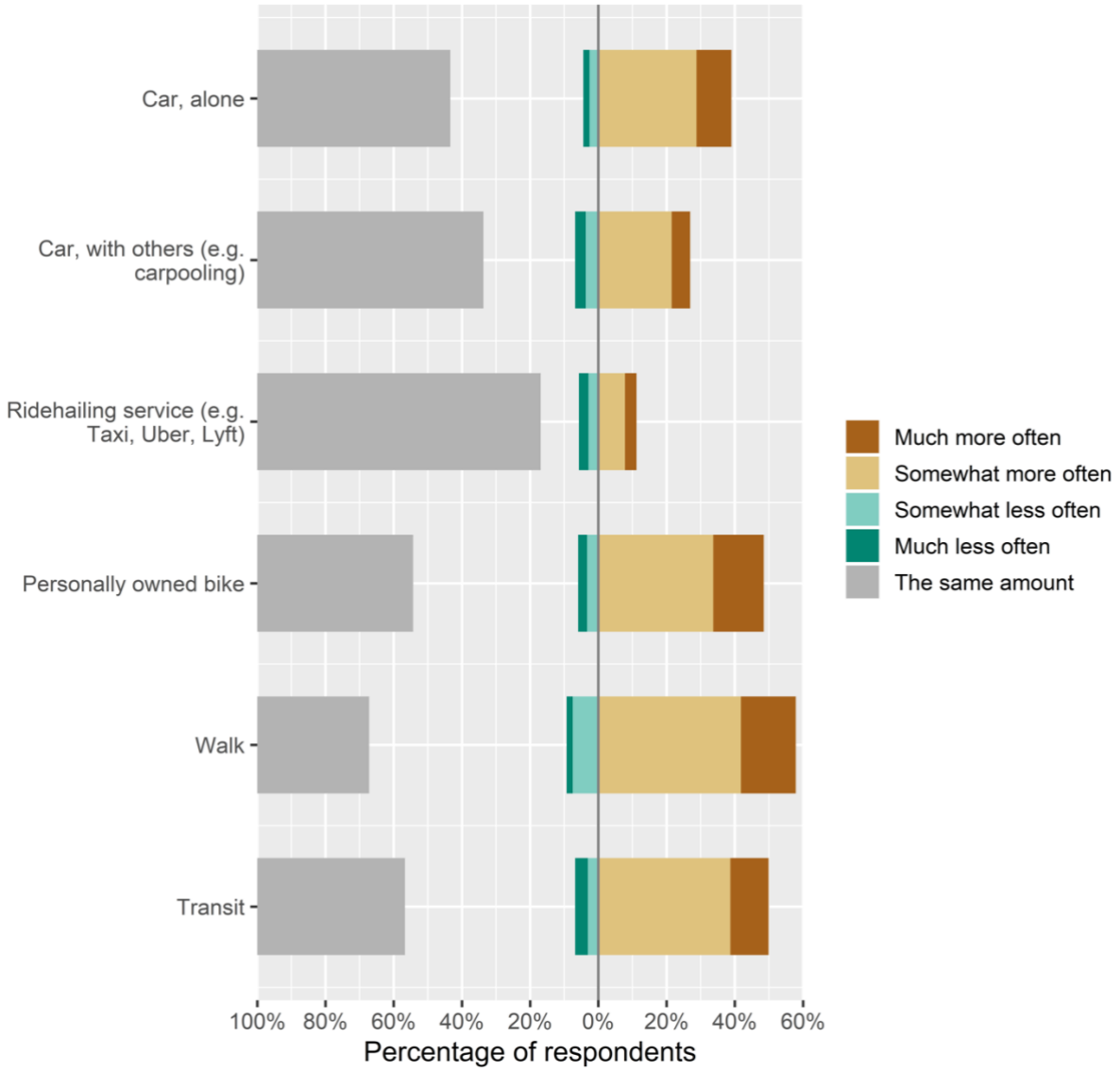

Figure 26. Self-reported prospective change in mode use if bike- and scooter-share services were to shut down

Other Effects of Bike-Share on Users

Users' Likelihood of Buying Electric Bike or Scooter

In the user survey, we also asked the respondents about their likelihood of buying an electric bike and an electric scooter in the future. Although the response rate to this question was low, most of the respondents reported that they are unlikely to buy an e-bike (67%), but 33% of the respondents who answered this question reported that they were somewhat likely to buy one or very likely to buy one. However, in the case of an electric scooter, only 12% of the respondents reported that they were somewhat likely or very likely to buy one, with the vast majority saying that they are certainly not going to buy one. (Note: none of the respondents said this of an e-bike, only that they were unlikely to buy an e-bike.) (Figure 27).

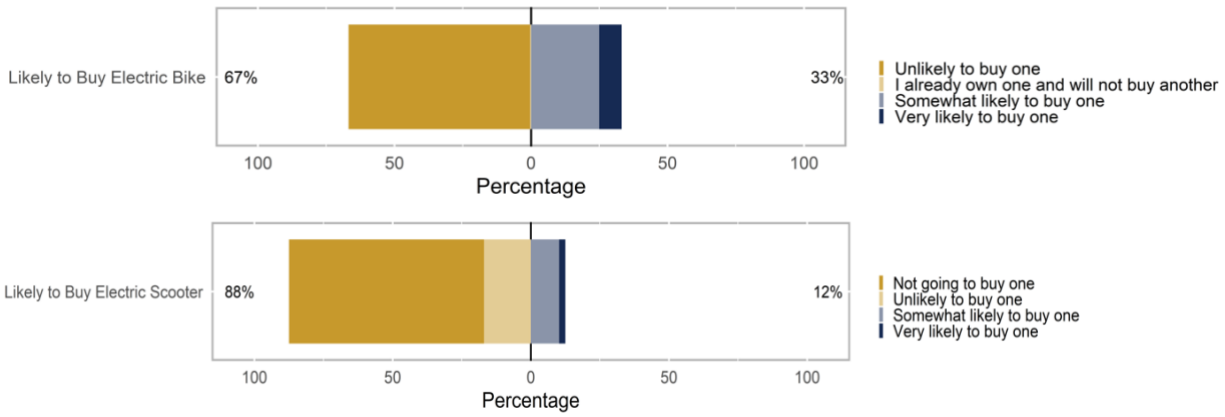

Figure 27. Bike-share users' likelihood to buy an electric bike and scooter

Bike-Share Users Perception Regarding Different Bike and Scooter Share Aspects

Most users agree strongly that the Jump service is convenient and that the service helps to connect people to activities (Figure 28). Users also tend to agree that the service is comfortable and not costly. However, they tend to agree that the e-bike is heavy (the e-scooters less so) and have mixed feelings about how easy it is to find a place to park the vehicles, which is supposed to be a major advantage for dockless services. Although most of the users agreed that the e-bikes are generally available when they need them, this was not the case for e-scooters. This is likely because, at the time of the survey, only 100 e-scooters (compared to 700-800 e-bikes) were available in the Sacramento region excluding Davis. Also, users' perceptions about other service characteristics—such as vehicles being sufficiently charged, ease-of-use of the keypad, the convenience of the app, and checking out the bike using the Uber app—were mixed but leaned positive, suggesting that the majority of users are satisfied with the service.

Users had a mixed response when comparing the safety of Jump e-bikes with conventional bicycles, but they tended to agree that the e-bikes helped them accelerate and ride faster (Figure 29). The majority of users said they don't take additional risks when riding on an e-bike, but a small group of respondents said they do. The net effect with respect to the safety of shared e-bike versus the safety of conventional bikes is not clear.

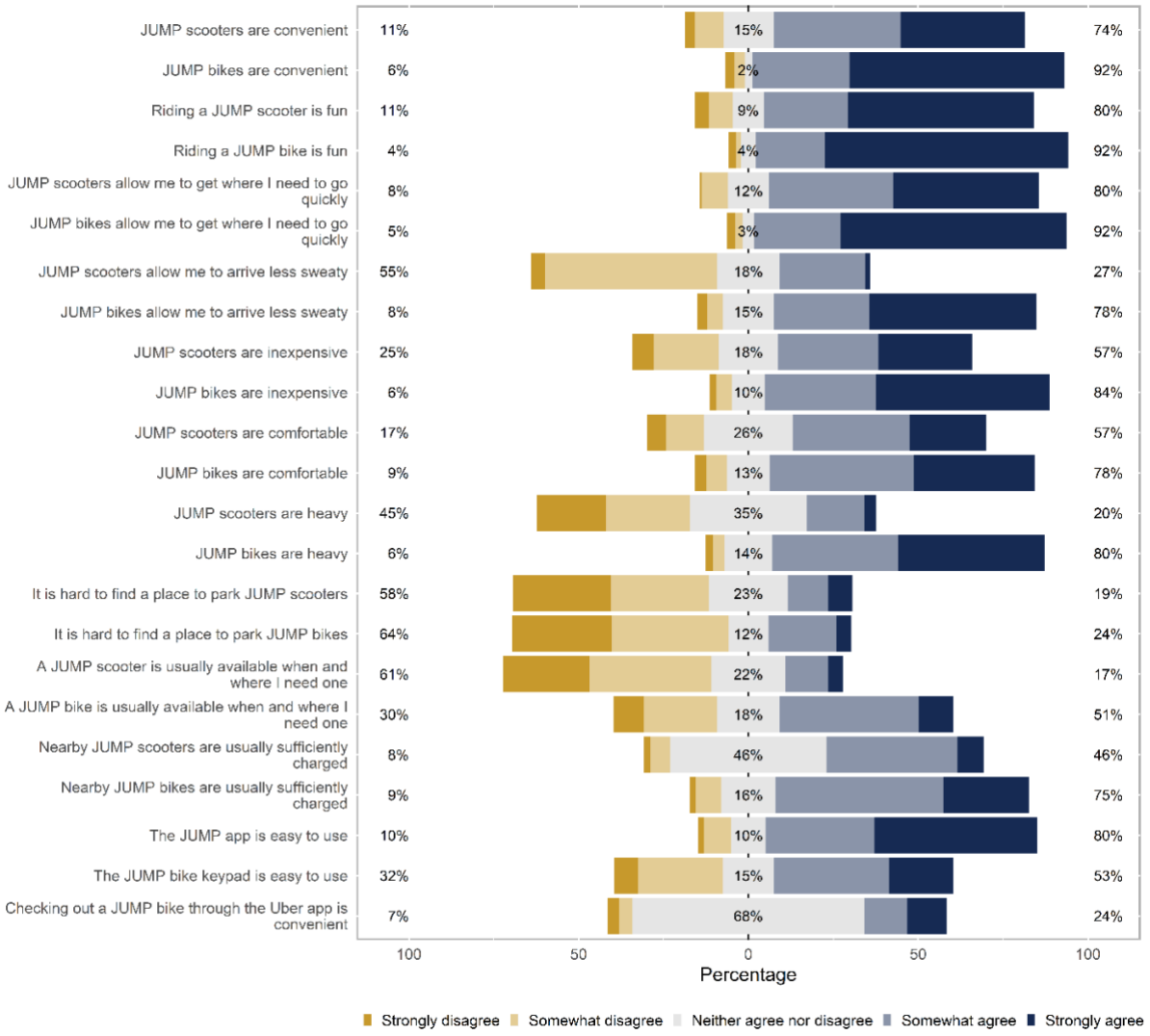

Figure 28. Bike-share user survey respondents' perception of different bike and scooter share aspects

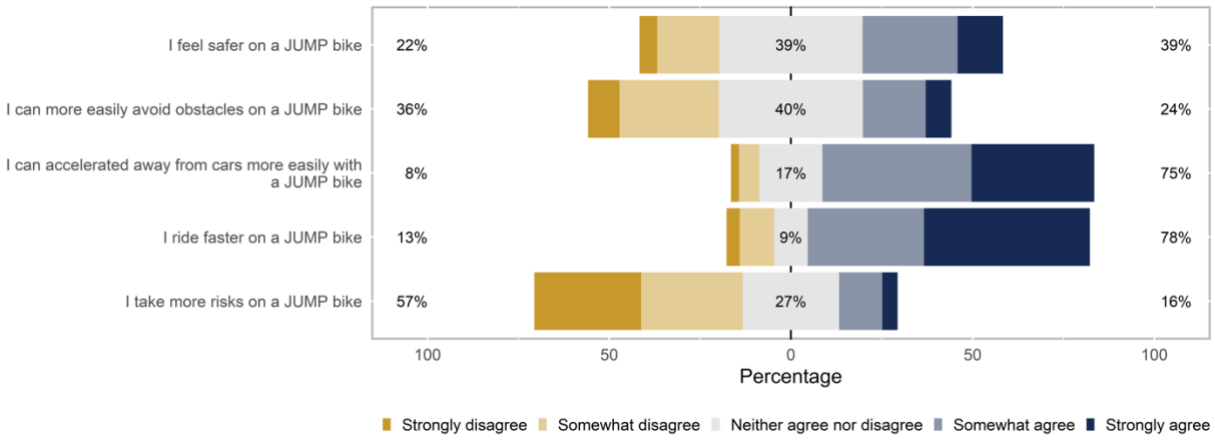

Figure 29. Bike-share users perception of shared e-bikes compared to conventional bikes

Change in Users' Behavior Over Time

The individual-level effect of the bike-share was analyzed using respondents who participated in both waves of the bike-share user survey (repeat observations in October 2018 and May 2019, a total of 140 respondents). The first user survey was completed 4 to 5 months after the introduction of bike-share. By the time of the next survey, the service had been in operation for 11 months. Thus, these 140 "panel" samples provide an opportunity to observe behavior change at the individual level.

We asked about the frequency of the use of the bike-share service in the previous 28 days and found that many panel members reduced their use of bike-share service over the period, especially those who were using it frequently during the time of the first wave (Figure 30). Panel members reported a mean reduction of 8.4 trips, though the median reduction was only 3. This reduction is not surprising given those early adopters of a new service may be especially excited to try it. Additionally, during the time between the two surveys, the supply of bikes did not change substantially, thus, supply is not likely to have contributed to this change in frequency of use.

Perhaps most interesting were the observed changes in the self-reported typical weekly VMT. A large number of panel members who used bike-share weekly, reduced their VMT between the two surveys, although the disaggregate results suggest high between-person heterogeneity (Figure 31). The mean typical weekly VMT reduction was 11.7 miles, a small enough difference that it may reflect measurement noise or changes in other factors such as residential address, job location, or other socio-economic conditions.

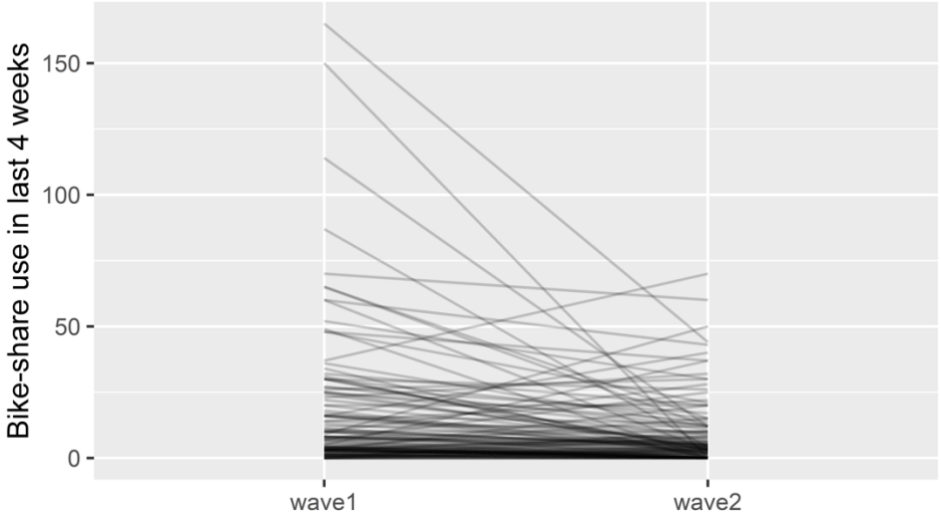

Figure 30. Change in bike-share use frequency in the previous 28 days over two waves of the survey by panel members. (Each line represents a single user.)

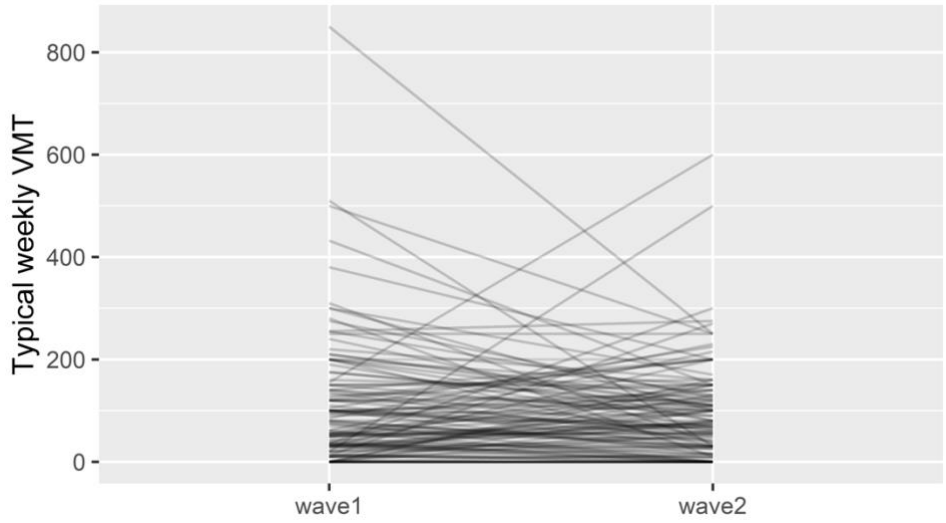

Figure 31. Change in VMT over two waves of the survey by bike-share user survey panel members. (Each line represents a single user.)

Policy Implications and Conclusions

The results presented above show that bike-share users drive less, but walk, bicycle, and use transit more frequently than non-users. The findings also suggest that in the greater Sacramento Region, the implementation of the e-bike-share system affected users and non-users by improving attitudes towards bicycling and reducing car travel, among other effects. We found that people are using this service not just for daily routine commutes, but for many other purposes. While most of the behavioral effects from the bike-share system are positive, the lack of connection to transit is a key missing component of this service. Given that micromobility services are most sustainable when they connect to transit (thus potentially substituting many more vehicle miles), policies that promote transit linking are important for maximizing the sustainability of micromobility services.

In many communities, residents have voiced concerns over the irresponsible use of bike- and scooter-share systems. In this case, survey respondents, even non-users, tended to know the rules for the bike-share system. There is room for improvement, however, with respect to parking rules. Counter to media reports about negative views of dockless bike- and scooter-share services, our survey results show that non-users mostly agree that users operate shared vehicles responsibly.

The equity of bike-share services has been another concern in some communities. Our results suggest a fairly equitable use of the bike-share system, in that the demographic characteristics of users and non-users are generally similar. But our survey mostly failed to capture members of the Boost program, designed to increase access to bike-share among lower-income residents. Low-income, as well as Black and Hispanic residents were underrepresented in the survey sample which greatly increases the uncertainty in measuring bike-share equity. Our analysis of the current standard method for assessing equity (using the demographics of the

areas where trips start and end) may provide a poor measure of who benefits from the bike-share system. Improvements to methods for evaluating equity are thus needed as a first step toward understanding the effect of micromobility service on disadvantaged populations.

Bike-share systems have the potential to improve health by increasing levels of physical activity, but it is also possible that the use of such systems reduces other forms of physical activity, and collisions are a health concern. We did not find any clear effects on physical activity or injuries due to the use of bike-share. We did find that physical activity has some relationship with bicycling in general. The potential health benefits of bike-share are also reduced to the degree that bike-share substitutes for walking or use of a non-electric personal bicycle rather than driving.

The results presented here provide an initial assessment of the effects of the Sacramento Region's bike-share system. The combination of household surveys before and after the implementation of the bike-share system and user surveys at two points in time offer unique insights into changes in behavior, attitudes, and outcomes for health and the environment. Additional analysis of the survey data in the second year of this study will generate further insights that may inform bike-share operations as well as policy.

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Supplemental Data: Survey Instruments

Below are the survey instruments in the format exported from the survey software Qualtrics. There are five total surveys: two household surveys (spring 2016, and spring 2019), three bike-share user surveys (fall 2018, spring 2019, and spring 2019 that was specific for panel members from fall 2018). Many of the surveys have the exact same survey questions but we provide them all to show how we collected the data. While all the complexities of the survey questions cannot be fully represented in this format (e.g., google maps questions, survey flow logic), we hope these questions can provide valuable details about the wording of questions for the variables we analyze in the main report.

Block 16

Sacramento Area Transportation Survey

The Institute of Transportation Studies at the University of California, Davis is conducting a study to learn more about the choices that people make about their daily travel. By understanding these choices, city officials can better address the transportation needs of your community.

This survey asks you questions about how you get around your community. This survey takes about 10 minutes to complete. Your participation in this survey is voluntary, your responses are completely confidential, and the results will be published only in summary form without connection to any individual.

After completing the survey you will be entered into a drawing for ten $100 Visa gift cards. Everyone can be entered in the drawing regardless of participation: if you prefer not to participate in the survey but want to be included in the drawing, please email me at dheckathorn@ucdavis.edu. To be included in the drawing, please complete the survey (or contact me) by April 30, 2016. If you are unable to complete the survey by then, we would still welcome your responses for some time afterwards.

Thank you for participating!

Your Daily Travel

Where do you live?

Sacramento

West Sacramento

Davis

None of the above

Thanks for your willingness to take this survey, but it is only for residents of the cities of Davis, West Sacramento, and Sacramento. If you would like to be entered into the drawing for the prizes anyway, please send an email to: dheckathorn@ucdavis.edu.

During the last 7 days (up to yesterday), on how many days did you:

Drive or ride in a car?	▼
Ride on a bus or train?	▼
Walk outdoors for more than 10 minutes at a time?	▼
Bicycle for any purpose?	▼
Bicycle to or from public transit?	▼
Bicycle to or from work or school?	▼
Bicycle to get somewhere OTHER than work, school, or public transit (e.g., to go shopping, see a friend, or eat a meal)?	▼
Ride a bicycle for exercise or recreation, without having a destination for the trip?	▼

In the last 7 days, did you have access to a MOTOR VEHICLE like a car, truck, or motorcycle that you can use either as a driver or passenger?

Always

Most of the Time

Sometimes

Rarely

Never

In the last 7 days, was there bus or train service within a 5 minute walk of your home?

Yes

No

Don't know/not sure

In the last 7 days, did you have access to a BICYCLE?

Always

Most of the Time

Sometimes

Rarely

Never

Were you out of town during the last 7 days?

No

Yes - if yes, how many days?

Block 3

DURING A TYPICAL WEEK, how do you USUALLY get to:

	Drive or ride in a car	Ride a bike	Ride a bus or a train	Walk	Other	I don't go there
Your workplace	○	○	○	○	○	○
Your school	○	○	○	○	○	○
Your usual grocery store	○	○	○	○	○	○
Your bank or the post office	○	○	○	○	○	○
A restaurant you like	○	○	○	○	○	○
A home of friends or family	○	○	○	○	○	○
A medical appointment	○	○	○	○	○	○

DURING A TYPICAL WEEK, how many days does your commute to work or school include any of the following forms of transportation?

Walking for more than 10 minutes at a time? ▼

Bicycling	▼
Taking public transit (for example, a bus or train)	▼
Driving yourself	▼
Riding as a passenger with someone else	▼

DURING A TYPICAL WEEK, about how many miles do you drive? Please do not include any driving while "on the clock" for your job. If you don't drive, mark as "0".

Your opinions about transportation

Please indicate your level of agreement with the following statements. There are no right or wrong answers.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I like driving a car	O	O	O	O	O
I like using public transit	O	O	O	O	O
I like riding a bicycle	O	O	O	O	O
I need my car to do many of the things I like to do	O	O	O	O	O
I need my car to carry shopping or children	O	O	O	O	O

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I try to limit my driving as much as possible	O	O	O	O	O
There are good bicycle lanes and paths in the areas I need to go	O	O	O	O	O
I feel comfortable bicycling in the areas I need to go	O	O	O	O	O

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I know how to get around by bicycle in the areas I need to go	O	O	O	O	O
Many of my friends or family or neighbors bicycle regularly	O	O	O	O	O

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Bicycling is a normal mode of transportation for adults in my community	O	O	O	O	O
Many bicyclists I see appear to spend a lot of money on their bicycle and accessories	O	O	O	O	O
Many bicyclists I see appear to have little regard for their personal safety	O	O	O	O	O
Many bicyclists I see look like they are too poor to own a car	O	O	O	O	O
Travel time is generally wasted time	O	O	O	O	O

Block 4

How many motor vehicles are there in your household? (For example, cars, trucks, or motorcycles.)

Number of motor vehicles: ▼

What is the year, make, model and annual miles driven (please provide your best estimate) for your household vehicle:

	YEAR	MAKE (e.g. Ford)	MODEL (e.g. Focus)	Miles Driven During the Past 12 Months
Vehicle #1				

What is the year, make, model and annual miles driven (please provide your best estimate) for each vehicle in your household:

	YEAR	MAKE (e.g. Ford)	MODEL (e.g. Focus)	Miles Driven During the Past 12 Months
Vehicle #1				
Vehicle #2				

What is the year, make, model and annual miles driven (please provide your best estimate) for each vehicle in your household:

	YEAR	MAKE (e.g. Ford)	MODEL (e.g. Focus)	Miles Driven During the Past 12 Months
Vehicle #1				
Vehicle #2				
Vehicle #3				

What is the year, make, model and annual miles driven (please provide your best estimate) for each vehicle in your household:

	YEAR	MAKE (e.g. Ford)	MODEL (e.g. Focus)	Miles Driven During the Past 12 Months
Vehicle #1				
Vehicle #2				
Vehicle #3				
Vehicle #4				

What is the year, make, model and annual miles driven (please provide your best estimate) for each vehicle in your household:

	YEAR	MAKE (e.g. Ford)	MODEL (e.g. Focus)	Miles Driven During the Past 12 Months
Vehicle #1				
Vehicle #2				
Vehicle #3				
Vehicle #4				
Vehicle #5				

What is the year, make, model and annual miles driven (please provide your best estimate) for each vehicle (up to 5) in your household:

	YEAR	MAKE (e.g. Ford)	MODEL (e.g. Focus)	Miles Driven During the Past 12 Months
Vehicle #1				
Vehicle #2				
Vehicle #3				
Vehicle #4				
Vehicle #5				

Block 13

How often do you ride a bicycle?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

How often do you use a car-sharing service like Zipcar, etc.?

Every day or almost every day
A few times per week
A few times per month
A few times per year
Not used in the last year
Never

What types of activities do you use car-sharing services like Zipcar for? (Check all that apply)

Running daily errands (such as grocery shopping, going to the bank or a medical appointment)
Moving large items (such as furniture or hardware supplies)
Commuting to work or school
Picking up or droping off a friend or family member
Recreational activities (such as visiting friends, hiking, or road trips)
Other - Please specify

How often do you use a ride-sharing service like Lyft, Uber, etc.?

Every day or almost every day
A few times per week
A few times per month
A few times per year
Not used in the last year
Never

What types of activities do you use ride-sharing services like Lyft and Uber for? (Check all that apply)

Traveling to or from the airport
Commuting to work or school
Running daily errands (such as grocery shopping, going to the bank or a medical appointment)

Going out to a bar, club or restaurant

Visiting friends or family

Other - Please specify

Your interest in using the proposed Sacramento Bike Share System

The Sacramento Area Council of Governments (SACOG) is planning to open a bike share system with stations in Sacramento, West Sacramento, and Davis sometime in 2017.

A bike share system allows users to rent sturdy bicycles, using a debit or credit card at the station kiosk, and then return the bicycle at the end of their trip to any of the many stations in the system. Bike share systems are used by visitors to see the sights and by residents for commuting to work or school, running errands, or enjoying days off.

We have a few questions about how you might use the Sacramento Bike Share System. **Because the system has not yet been installed, some of your answers may depend on details that we cannot provide to you right now.** Please just answer as best as you can with the information given.

Have you ever used a bike share system before, in another city?

Yes

No

Block 8

How many times have you used a bike share system?

Only once

2-5 times

6-10 times

More than 10 times

How likely is it that you would use the Sacramento bike share system when it opens?

Will definitely use it

Fairly likely

Only somewhat likely

Not very likely

Will definitely NOT use it

How often do you think you might use the system?

A few times per year

Once or twice per month

Once or twice per week

Nearly every day

Block 12

Just a few extra questions for Davis residents!

We're interested in some of the activities you might do in downtown Davis. By "downtown," we mean the area from A Street to the railroad tracks and from 1st Street to 5th Street (including Davis Commons).

Think back to your most recent visit to this area.
Include any time you lingered there, for any reason. But do NOT count times you just passed through without stopping, on your way to somewhere else.

When was your most recent visit to downtown Davis?

0 - 2 days ago

3 - 6 days ago

1 -2 WEEKS ago

3 - 4 weeks ago

1 -2 MONTHS ago

3 - 6 months ago

7 - 12 months ago

More than a year ago

What did you do on your most recent visit to downtown Davis? Please choose all that apply:

Shopping

Working

Eating or drinking

Reading or studying

Banking, medical, beauty, or other services

Movies, music, or theater

Other:

What time of day were you there? Please choose *all* that apply:

Morning

Afternoon

Evening

How did you get downtown for that visit? Please choose *only one* of the following:

Drove myself

Was driven by someone else

Bicycled

Walked

Took public transit

Other:

How do you USUALLY get downtown? Please choose *only one* of the following:

Drive myself

Driven by someone else

Bicycle

Walk

Take public transit

Other:

Block 13

In general, how would you evaluate shopping in downtown Davis (compared to other shopping destinations) with respect to the following characteristics? Please rate each characteristic on a scale from 1 to 5 as indicated.

Price

Inexpensive	○	○	○	○	○	Expensive

Product Quality

Low	○	○	○	○	○	High

Product Selection

Limited	○	○	○	○	○	Broad

Hours of Operation

Limited	○	○	○	○	○	Extensive

Customer Interaction

Poor	○	○	○	○	○	Excellent

Returning an item

Difficult	○	○	○	○	○	Easy

Environmental Friendliness

Low	○	○	○	○	○	High

Impact on the Davis Economy

Negative ○ ○ ○ ○ ○ Positive

Driving there

Difficult ○ ○ ○ ○ ○ Easy

Parking there

Difficult ○ ○ ○ ○ ○ Easy

Walking there

Difficult ○ ○ ○ ○ ○ Easy

Biking there

Difficult ○ ○ ○ ○ ○ Easy

Quality/Availability of Parking

Low ○ ○ ○ ○ ○ High

Block 10

A few things about you

Thank you so much for your input! In this last section, we would like to learn a little more about you. Remember, this information will remain anonymous.

What is your age?

What is your gender identity?

Male

Female

(Please Specify)

Please tell us which race/ethnicity best describes you (select all that apply):

Black/African American

Hispanic/Latino

White

Asian

Pacific Islander/Native Hawaiian

American Indian/Alaskan Native

(Please Specify)

How many people live in your household, including you?

Number of people under 16:

Number of people 16 years and older:

What is your highest completed level of education?

No formal education

Grade school or Jr. High

High School Diploma or GED

Associate or technical certificate

Bachelor's degree(s)

Graduate degree(s)

Do you have a driver's license issued by a U.S. state?

Yes

In the past but not currently

Have never had one

Do you currently have any physical or other health conditions that prevent:

Your ability to walk?	No	Yes
Your ability to bike?	No	Yes

How would you rate your ability to ride a bike?

I cannot ride a bike at all because I do not know how

I can ride a bike, but I am not very confident doing so

I am somewhat confident riding a bike

I am very confident riding a bike

Please tell us what street intersection is nearest to your home. (Remember that all information you provide is strictly confidential and for research purposes only.)

Street #1:

Street #2:

Are you currently employed?

Full-time

Part-time

Student

Homemaker

Not currently working

Permanently unable to work

Retired

What is the approximate location of your workplace (nearest street intersection and city)?

Street #1:

Street #2:

City:

What is the approximate location of your school (nearest street intersection and city)?

Street #1:

Street #2:

City:

Do you live with family members or others with whom you share income?

Yes

No

Last year, what was your approximate personal income before taxes?

Less than $10,000

$10,000-25,000

$25,001-50,000

$50,001-75,000

$75,001-100,000

$100,001-125,000

$125,001-150,000

$150,001-175,000

$175,001-200,000

More than $200,000

Last year, what was your approximate HOUSEHOLD income before taxes?

Less than $10,000

$10,000-25,000

$25,001-50,000

$50,001-75,000

$75,001-100,000

$100,001-125,000

$125,001-150,000

$150,001-175,000

$175,001-200,000

More than $200,000

Block 11

OPTIONAL:

After completing the survey you will be entered into a drawing for ten $100 Visa gift cards. Everyone can be entered in the drawing regardless of participation: if you prefer not to participate in the survey but want to be included in the drawing, please email me at dheckathorn@ucdavis.edu. We will randomly select ten people from those who complete the survey to receive this prize.

If you wish to be included in the drawing or you are willing to be contacted further, please provide the following information. We will only use it for the purposes you authorize.

Please indicate the purposes for which we may contact you (select all that apply):

If we have any questions about this survey.

If you win a prize.

How would you prefer to be contacted?

e-mail:

phone:

THANK YOU! We would value any additional comments you may have on this survey. Please write them in the space below:

Introduction

Sacramento Area Transportation Survey

The Institute of Transportation Studies at the University of California, Davis is conducting a study to learn more about the choices that people make about their daily travel. By understanding these choices, city officials can better address the transportation needs of your community.

This survey asks you questions about how you get around your community with a specific focus on the new bike and scooter share operated by JUMP.

If you have never used JUMP, this survey takes about 10 minutes to complete. Your participation is voluntary, your responses are completely confidential, and the results will be published only in summary form without connection to any individual.

After completing the survey you will be entered into a drawing for ten $100 Amazon gift cards with your expected chances of winning about 1 in 100 depending on response rate. Everyone can be entered in the drawing regardless of participation: if you prefer not to participate in the survey but want to be included in the drawing, please email me at dtfitch@ucdavis.edu. To be included in the drawing, please complete the survey (or contact me) by June 7th, 2019. If you are unable to complete the survey by then, we still welcome your responses for some time afterwards.

Thank you for participating!

Have you ever used the JUMP bike or scooter share in Sacramento, West Sacramento, or Davis?

Yes

No

Please take our JUMP user survey instead (click the following link):
JUMP User Survey

If you do not want to take the JUMP user survey we still welcome your responses in the Sacramento Area Transportation Survey

I only want to take the Sacramento Area Transportation survey

Your Daily Travel

Where do you live?

Sacramento

West Sacramento

Davis

None of the above

Thanks for your willingness to take this survey, but it is only for residents of the cities of Davis, West Sacramento, and Sacramento. If you would like to be entered into the drawing for the prizes anyway, please send an email to: dtfitch@ucdavis.edu.

During the last 7 days (up to yesterday), on how many days did you:

Drive or ride in a car? ▼

Ride on a bus or train? ▼

Walk outdoors for more than 10 minutes at a time? ▼

Bicycle for any purpose? ▼

Bicycle to or from public transit? ▼

Bicycle to or from work or school? ▼

Bicycle to get somewhere OTHER than work, school, or public transit (e.g., to go shopping, see a friend, or eat a meal)? ▼

Ride a bicycle for exercise or recreation, without having a destination for the trip?

In the last 7 days, did you have access to a MOTOR VEHICLE like a car, truck, or motorcycle that you can use either as a driver or passenger?

Always
Most of the Time
Sometimes
Rarely
Never

In the last 7 days, was there bus or train service within a 5 minute walk of your home?

Yes
No
Don't know/not sure

In the last 7 days, did you have access to a BICYCLE that you own?

Always
Most of the Time
Sometimes
Rarely
Never

In the last 7 days, did you have access to a BICYCLE from the JUMP bike share?

Always
Most of the Time
Sometimes
Rarely
Never

Were you out of town during the last 7 days?

No

Yes - if yes, how many days?

Typical Travel

DURING A TYPICAL WEEK, how do you USUALLY get to:

	Drive or ride in a car	Ride a bike	Ride a bus or a train	Walk	Other	I don't go there	I do this from home
Your workplace	○	○	○	○	○	○	○
Your school	○	○	○	○	○	○	○
Your usual grocery store	○	○	○	○	○	○	○
For errands (bank, post office)	○	○	○	○	○	○	○
A restaurant you like	○	○	○	○	○	○	○
A home of friends or family	○	○	○	○	○	○	○
A medical appointment	○	○	○	○	○	○	○

DURING A TYPICAL WEEK, how many days does your commute to work or school include any of the following forms of transportation?

Walking for more than 10 minutes at a time?	▼
Bicycling	▼
Taking public transit (for example, a bus or train)	▼
Driving yourself	▼
Riding as a passenger with someone else	▼

DURING A TYPICAL WEEK, about how many miles do you drive? Please do not include any driving while "on the clock" for your job. If you don't drive, mark as "0".

Do you currently have any physical or other health conditions that prevent:

Your ability to walk?	No	Yes
Your ability to bike?	No	Yes

Your opinions about transportation

Please indicate your level of agreement with the following statements. There are no right or wrong answers.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Bicycling is a normal mode of transportation for adults in my community	O	O	O	O	O
I try to travel by bike as much as possible	O	O	O	O	O
Riding a bike is boring	O	O	O	O	O
Many people I know think bicycling is healthy	O	O	O	O	O
Many of my friends or family or neighbors bicycle regularly	O	O	O	O	O
Many people I know think I should bicycle	O	O	O	O	O
Travel time is generally wasted time	O	O	O	O	O

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I try to limit my driving as much as possible	O	O	O	O	O
I know how to get around by bicycle in the areas I need to go	O	O	O	O	O
I feel comfortable bicycling in the areas I need to go	O	O	O	O	O

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Many people I know think bicycling is safe	O	O	O	O	O
I like riding a bicycle	O	O	O	O	O
I need my car to do many of the things I like to do	O	O	O	O	O
Riding a bike is pleasant	O	O	O	O	O

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Many people I know think bicycling is fun	O	O	O	O	O
Many bicyclists I see appear to spend a lot of money on their bicycle and accessories	O	O	O	O	O
There are good bicycle lanes and paths in the areas I need to go	O	O	O	O	O
I feel comfortable around cars when bicycling in town	O	O	O	O	O
Many bicyclists I see appear to have little regard for their personal safety	O	O	O	O	O
I like driving a car	O	O	O	O	O
I like using public transit	O	O	O	O	O

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I get stressed by cars when bicycling in town	O	O	O	O	O
I feel anxious around cars when bicycling in town	O	O	O	O	O
Riding a bike is fun	O	O	O	O	O

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Riding a bike is enjoyable	O	O	O	O	O
Many bicyclists I see look like they are too poor to own a car	O	O	O	O	O
I need my car to carry shopping or children	O	O	O	O	O

Cars

How many motor vehicles does your household have? (For example, cars, trucks, or motorcycles.)

▼

What are the types and annual miles driven (please provide your best estimate) for each vehicle (up to 5) in your household?

	Type	Miles driven during the Past 12 Months
Vehicle #1	▼	
Vehicle #2	▼	
Vehicle #3	▼	
Vehicle #4	▼	
Vehicle #5	▼	

Bike and shared mobility services

How often do you ride a bicycle?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

How often do you use a car-sharing service like Zipcar, GIG, etc.?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

What types of activities do you use car-sharing services like Zipcar/GIG for? (Check all that apply)

Running daily errands (such as grocery shopping, going to the bank or a medical appointment)

Moving large items (such as furniture or hardware supplies)

Commuting to work or school

Picking up or droping off a friend or family member

Recreational activities (such as visiting friends, hiking, or road trips)

Other - Please specify

How often do you use a ride-hailing service like Lyft, Uber, etc.?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

What types of activities do you use ride-hailing services like Lyft and Uber for? (Check all that apply)

Traveling to or from the airport
Commuting to work or school
Running daily errands (such as grocery shopping, going to the bank or a medical appointment)
Going out to a bar, club or restaurant
Visiting friends or family
Other - Please specify

Attitudes about JUMP

With the support of cities and the Sacramento Area Council of Governments (SACOG), JUMP launched a dock-less bike share service in the region in the Summer of 2018. More recently they added scooters to this service in Sacramento and West Sacramento.

We have a few questions about bike/scooter share in other places, and how you feel about the Sacramento JUMP system.

How many times have you used a bike share system when visiting another city?

Never used another bike share system
Only once
2-5 times
6-10 times
more than 10 times

Have you seen the bright red JUMP bikes or scooters in the Sacramento, West Sacramento, or Davis?

Yes, I've noticed the JUMP bikes and scooters
Yes, I've only noticed the JUMP bikes
Yes, I've only noticed the JUMP scooters
No, I've never noticed them

Have you ever used a dock-less bike or scooter share (JUMP, Lime, Spin, Ofo, etc.) in another city? (check all that apply)

Yes, I've used a dock-less bike share

Yes, I've used a dock-less scooter share

No

Have you considered using JUMP in the greater Sacramento region?

Yes, I've considered using a JUMP bike

Yes, I've considered using a JUMP scooter

Yes, I've considered using both a JUMP bike and scooter

No

For what reasons have you not used a JUMP bike or scooter? (check all that apply)

Too costly

Inconvenient

Concern for traffic safety

No bikes available

No scooters available

Nearby bikes/scooters were not sufficiently charged

No need

No interest

Other (please describe)

We want to know how much you know about JUMP bikes and scooters. Tell us what you think is **true of JUMP**.

	True	False
JUMP bikes are electric assisted	○	○
JUMP bikes are supposed to be parked at bike racks	○	○
JUMP scooters **do not** have to be parked at bike racks	○	○

	True	False
JUMP scooters **are not** supposed to be ridden on sidewalks	○	○

Please indicate your level of agreement with the following statements. There are no right or wrong answers.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I am annoyed by people on JUMP bikes	○	○	○	○	○
JUMP bikes look fun	○	○	○	○	○
I am annoyed by people on JUMP scooters	○	○	○	○	○
JUMP scooters look fun	○	○	○	○	○
I worry about getting hit by a JUMP bike rider when I walk	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I worry about hitting a JUMP bike rider when I drive	○	○	○	○	○
I worry about getting hit by a JUMP scooter rider when I walk	○	○	○	○	○
I worry about hitting a JUMP scooter rider when I drive	○	○	○	○	○
Most people park JUMP bikes responsibly	○	○	○	○	○
Most people park JUMP scooters responsibly	○	○	○	○	○

Bike and scooter comfort

How would you rate your confidence to ride a bike?

I cannot ride a bike at all because I do not know how

I can ride a bike, but I am not very confident doing so

I am somewhat confident riding a bike

I am very confident riding a bike

In general, how comfortable would you be riding a bicycle on a **four-lane street (two lanes in either direction)** without a bicycle lane, in daylight and good weather?

Uncomfortable and I wouldn't ride on it

Uncomfortable but I would ride on it

Comfortable

Have you ever ridden a stand-up electric scooter (like the kind in the JUMP system)?

Yes

No

How would you rate your confidence to ride a stand-up electric scooter?

I am not very confident riding a stand-up electric scooter

I am somewhat confident riding a stand-up electric scooter

I am very confident riding a stand-up electric scooter

How would you rate your confidence to try out a stand-up electric scooter?

I would not be very confident

I would be somewhat confident

I would be very confident

In general, how comfortable would you be riding a stand-up electric scooter on a **four-lane street (two lanes in either direction)** without a bicycle lane, in daylight and good weather?

Uncomfortable and I wouldn't ride on it

Uncomfortable but I would ride on it

Comfortable

How many walk, bike, e-bike or e-scooter collisions have you had in the last **3 years?**

Collisions

You have indicated you have been in more than 3 collisions in the past 3 years. Please only tell us about the 3 most recent collisions.

Starting from your **${lm://Field/2}** collision, How were you traveling immediately before your collision?

Walking

Personally owned bike

Personally owned e-bike

Personally owned e-scooter

JUMP bike

JUMP e-scooter

What was your **${lm://Field/2}** collision with?

Car, Moving

Car, Parked

Truck

Bus

Bicycle

E-scooter

Pedestrian

Animal

Debris or other temporary obstacles

Other (please specify)

Where were you during your **${lm://Field/2}** collision?

Street (no bike lane)

Bike lane

Protected bike lane

Off-street bike/pedestrian path

Sidewalk

Other (please specify)

Were you injured during your **${lm://Field/2}** collision?

No

Yes, but didn't receive treatment

Yes, received treatment but was not hospitalized

Yes, was hospitalized

Were you wearing a helmet during your **${lm://Field/2}** collision?

Yes

No

What were the light conditions for **${lm://Field/2}** collision?

Darkness

Twilight

Light

Was your **${lm://Field/2}** collision reported to the police?

Yes

No

Unsure

Demographics

A few things about you

Thank you so much for your input! In this last section, we would like to learn a little more about you. Remember, this information will remain anonymous.

What is your age? (in years)

To which gender to you most identity?

Woman

Man

Not listed:

Prefer not to say

Please tell us which race and ethnicity categories best describe you (select all that apply):

Black/African American

Hispanic/Latino

White

Asian

Pacific Islander/Native Hawaiian

American Indian/Alaskan Native

(Please Specify)

How many people live in your household, including you?

Number of people under 16:

Number of people 16 years and older:

What is your highest completed level of education?

No formal education

Grade school or Jr. High

High School Diploma or GED

Associate or technical certificate

Bachelor's degree(s)

Graduate degree(s)

Do you have a driver's license issued by a U.S. state?

Yes

In the past but not currently

Have never had one

Type an address, cross street, or drag the marker to your **home** or nearest intersection to your **home**. (Remember that all information you provide is strictly confidential and for research purposes only.)

Employment and School

Are you currently employed? (check all that apply)

Full-time employed

Part-time employed

Student

Retired

Homemaker

Not currently working

Permanently unable to work

Type an address, cross street, or drag the marker to your **primary workplace** (workplace you travel to most frequently) or nearest intersection to your **primary workplace**.

Type an address, cross street, or drag the marker to your **school** or nearest intersection to your **school**.

Income

Do you live with family members or others with whom you share income?

Yes

No

Last year, what was your approximate personal income before taxes?

Less than $10,000

$10,000-25,000

$25,001-50,000

$50,001-75,000

$75,001-100,000

$100,001-125,000

$125,001-150,000

$150,001-175,000

$175,001-200,000

More than $200,000

Last year, what was your approximate HOUSEHOLD income before taxes?

Less than $10,000

$10,000-25,000

$25,001-50,000

$50,001-75,000

$75,001-100,000

$100,001-125,000

$125,001-150,000

$150,001-175,000

$175,001-200,000

More than $200,000

Ending

OPTIONAL:

After completing the survey you will be entered into a drawing for ten $100 Amazon gift cards. The drawing will occur between June 7th and 14th. Everyone can be entered in the drawing regardless of participation: if you prefer not to participate in the survey but want to be included in the drawing, please email me at dtfitch@ucdavis.edu. We will randomly select ten people from those who complete the survey to receive this prize.

If you wish to be included in the drawing or you are willing to be contacted further, please provide the following information. We will only use it for the purposes you authorize.

Can we contact you ...

	Yes	No
if you win a $100 gift card prize?	○	○
if we have any questions about your survey?	○	○
for a UC Davis survey on housing priorities and accessory dwelling units?	○	○
for a UC Davis survey about getting to the Davis Amtrak station?	○	○

Please provide your email so we can contact you for the purposes you just indicated.

e-mail:

THANK YOU! We would value any additional comments you may have on this survey. Please write them in the space below:

Welcome

Welcome to the JUMP bike share survey!

The Institute of Transportation Studies at the University of California, Davis in partnership with the Sacramento Area Council of Governments (SACOG) and JUMP is conducting a study to learn more about how people use JUMP. Our focus is on the Sacramento-area JUMP bike share, but we welcome anyone who has ever used JUMP in any city to participate. By understanding how JUMP functions as a regular mode of transportation, city officials can better address the transportation needs of your community.

How long...

You are being asked to join a research study by taking this survey, which should take **about 25 minutes**. We ask that you have your smartphone (with the JUMP app installed) available so your trip history is available during the survey. Alternatively, you can log in to your JUMP account (https://app.jumpbikes.com/users/sign_in) to view your trip history. If you have only used JUMP through the Uber app, please download the JUMP app to get a list of your JUMP trips to refer to during this survey.

What you get...

After completing the survey, those who have used JUMP in the greater Sacramento region will be awarded a $5 Amazon gift card for participation and be entered into a drawing for a $100 Amazon gift card. If you have only used JUMP in other cities, you won't receive a $5 Amazon gift card, but you will be entered into a drawing for a $100 Amazon gift card. Everyone can be entered in the drawing regardless of participation: if you prefer not to participate in the survey but want to be included in the drawing, please email me at dtfitch@ucdavis.edu.

Participation in research is completely voluntary. You are free to decline to take part in the project. You can decline to answer any questions and you can stop taking part in the project at any time. Whether or not you choose to participate, or answer any question, or stop participating in the project, there will be no penalty to you or loss of benefits to which you are otherwise entitled.

Questions

If you have any questions about this research, please feel free to contact me.

Contact

Dillon Fitch
dtfitch@ucdavis.edu

agree to participate

I do not wish to participate

Opening Questions

What city do you live in?

Sacramento

West Sacramento

Davis

Other city **in** the greater Sacramento region (specify city)

Other city **outside** the greater Sacramento region (specify city and state)

Select all the JUMP bike shares you have ever used.

Austin	Santa Cruz
Denver	Washington, D.C.
Providence	Santa Monica
Sacramento Region	San Francisco
Chicago	None, I've never used JUMP anywhere

New York City

You indicated you live in the Sacramento region but don't use the Sacramento JUMP bike share? Please tell us why (select all that apply), or go back and select the Sacramento Region bike share if you do use it.

- Too costly
- Inconvenient
- No safe bike routes
- No bikes available
- Nearby bikes were not sufficiently charged
- No need
- Other (please describe)

Sac-area Visitors

When you last visited the Sacramento region **and** used JUMP, what was the purpose of your visit to the Sacramento region?

- Work/school-related visitor
- Leisure-related visitor
- Other

When you last visited the Sacramento region and used JUMP, for what purposes did you use JUMP?

- For exercise or recreation
- To explore the city
- To go to meetings or appointments
- To go to restaurants, bars, or other entertainment
- Other (please describe)

How many days in the past **4 weeks (28 days)** did you spend in the Sacramento region? Mark "0" if you have not visited the region in the past month.

[ ] days in the past 28 days

Employment and School questions

What is your work status?

Working, and commute to at least one workplace

Working, and don't commute (e.g. from home or without fixed workplace locations)

Retired but still commute to at least one workplace

Retired and don't commute to a workplace

Not employed

Generally speaking, what is your work schedule?

Early morning shift

9-to-5

Late night "graveyard" shift

Late afternoon "swing" shift

Changes frequently

[ ] Other (please specify)

Are you currently a student?

Full-time student

Part-time student

Not a student

Do you travel to at least one school campus?

Yes, I travel to at least one school campus (even if infrequently)

No, I only take courses online

JUMP Travel Behavior by Purpose

How often do you take JUMP trips for the following purposes? (A trip is defined as going from one location to another (one-way))

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
Commute to/from **school**	○	○	○	○	○	○
Commute to/from **primary workplace**	○	○	○	○	○	○
Work related (meetings)	○	○	○	○	○	○
Grocery shopping	○	○	○	○	○	○
Other shopping	○	○	○	○	○	○
To run errands	○	○	○	○	○	○
To/from a restaurant, bar, or other entertainment	○	○	○	○	○	○
Visit friends/family	○	○	○	○	○	○
For recreation/exercise	○	○	○	○	○	○
To/from a transit stop	○	○	○	○	○	○
Other	○	○	○	○	○	○

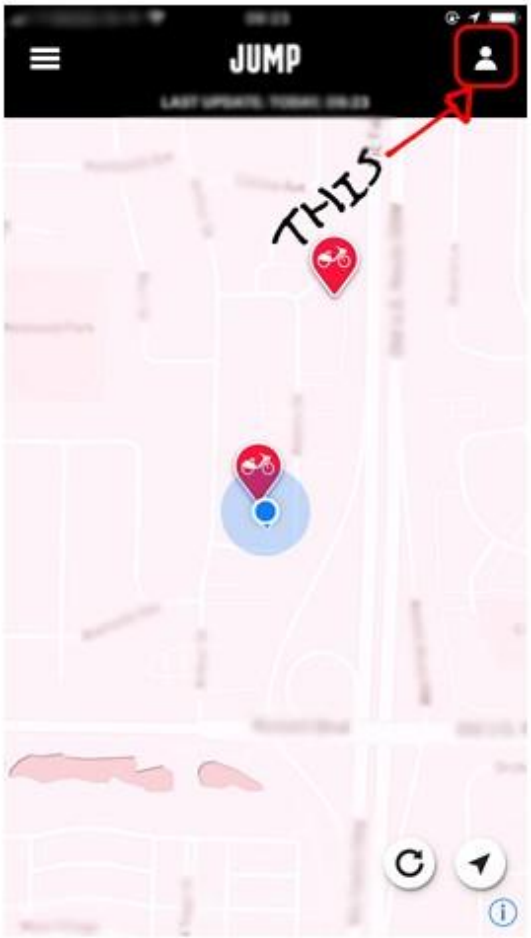
JUMP Frequency by looking at APP

For the following questions, please either log in to your JUMP account on a separate browser page (https://app.jumpbikes.com/users/sign_in) or have your mobile phone and JUMP app open for answering. To find your recent JUMP trips go to Usage->My Trips or do the following on your smartphone...

①

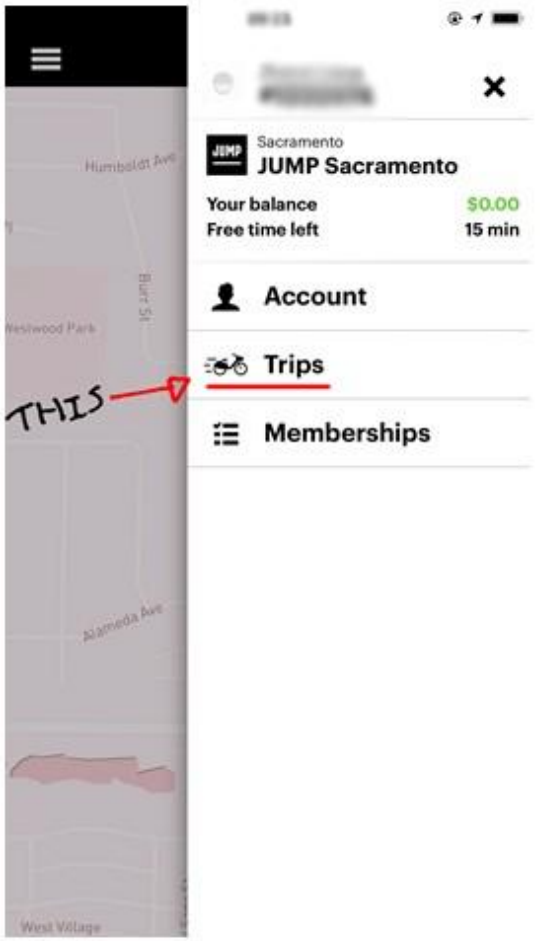
open “JUMP” app
on your phone

②



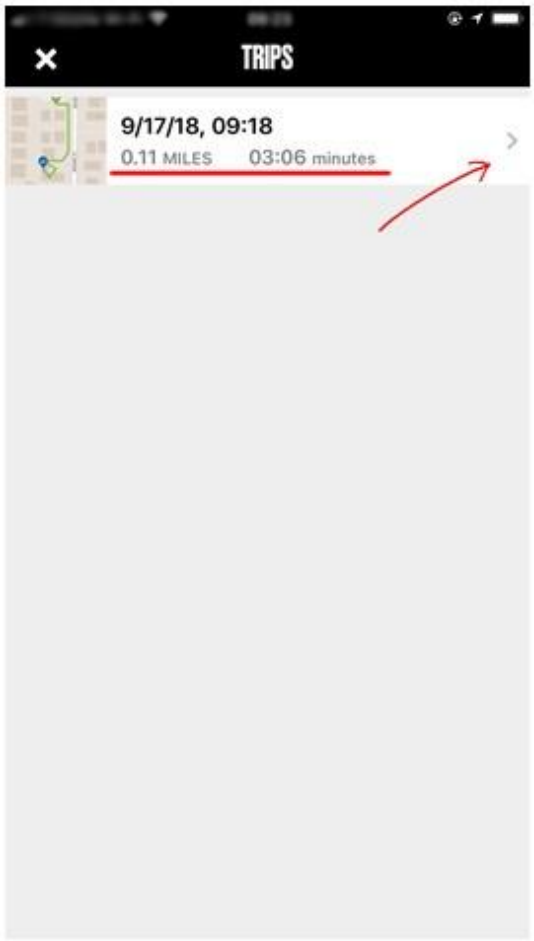
Tap the icon
on the top-right

③



Select “Trips”

④



Review your trip information

Look at your JUMP app and tell us when you made your **most recent** JUMP trip.

Date (mm/dd/yyyy)

Look at your JUMP app and tell us when you made your **first** JUMP trip.

Date (mm/dd/yyyy)

Look at your JUMP app and count all of your JUMP trips in the past **4 weeks (28 days)**. How many times did you use JUMP?

_____ trips in the past 28 days

Why haven't you used JUMP in the past **4 weeks (28 days)**? Select all that apply.

- Too costly
- Inconvenient
- Concern for traffic safety
- No bikes available
- Nearby bikes were not sufficiently charged
- No need
- Other (please describe)

_____

Travel Behavior (Home location)

In the following map questions, we will ask about how you commute to work and/or school (even if you don't use JUMP for it). You can type an address or cross street to quickly identify a location and/or drag the marker manually. (Remember that all information you provide is strictly confidential and for research purposes only).

Type an address, cross street, or drag the marker to your **home** or nearest intersection to your **home**.

Work Travel

Type an address, cross street, or drag the marker to your **primary workplace** (workplace you travel to most frequently) or nearest intersection to your **primary workplace**.

From where do you usually start your commute to your **primary workplace**?

Home

School

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you start your commute to your **primary workplace**.

Think of your last JUMP trip as a part of your commute to or from your **primary workplace** and tell us how you used JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your last JUMP trip as a part of your commute to or from your **primary workplace**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP

Personally owned bike

Personally owned e-bike or e-scooter

Walk or Skateboard

Transit (Train or Bus)

Car, alone

Car, with others (e.g. carpooling)

Ridehailing service (e.g. Taxi, Uber, Lyft)

Other

In the past **4 weeks (28 days)**, how many times did you commute (round trip) to your **primary workplace by any means**? For example, if you work 5 days a week at only one workplace, you would put 20.

[ ] times in the past 28 days

Look at your JUMP app or online JUMP account and count how many times you used JUMP for any part of your commute **to or from your primary workplace** in the past **4 weeks (28 days)**. Note, the JUMP app will report a separate trip for traveling to and from work, so you may have more trips than commute times to your **primary workplace**. Mark "0" if you haven't made a JUMP **work commute** trip in the past **4 weeks (28 days)**.

[ ] trips in the past 28 days

If JUMP was **not** available to you, how would you commute to your **primary workplace**? Select your **one primary method** (the one you would use for the longest portion of the trip or the entire trip).

- Personally owned bike
- Personally owned e-bike or e-scooter
- Walk or Skateboard
- Transit (Train or Bus)
- Car, alone
- Car, with others (e.g. carpooling)
- Ridehailing service (e.g. Taxi, Uber, Lyft)
- [ ] Other

Would you use any **secondary methods** when commuting to your **primary workplace** without JUMP? Select all that apply.

- No, I would only travel by the primary method above
- Personally owned bike
- Personally owned e-bike or e-scooter
- Walk or Skateboard
- Transit (Train or Bus)
- Car, alone
- Car, with others (e.g. carpooling)
- Ridehailing service (e.g. Taxi, Uber, Lyft)
- Other [ ]

During a typical week, how many days does your commute **to** your **primary workplace** include any of the following forms of transportation?

Walking for more than 10 minutes at a time?	▼
Bicycling (personal and JUMP)	▼
Taking public transit (for example, a bus or train)	▼
Driving yourself	▼
Riding as a passenger with someone else	▼

School Travel

Type an address, cross street, or drag the marker to your **school** or nearest intersection to your **school**.

From where do you start your commute to **school**?

Home

Work

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you start your commute to **school**.

Think of your last JUMP trip to or from **school** and tell us how you used JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your last JUMP trip to or from **school**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP

Personally owned bike

Personally owned e-bike or e-scooter

Walk or Skateboard

Transit (Train or Bus)

Car, alone

Car, with others (e.g. carpooling)

Ridehailing service (e.g. Taxi, Uber, Lyft)

Other

In the past **4 weeks (28 days)**, how many times did you commute (round trip) to **school by any means**? For example, If you go to school 3 days a week, you would put 12.

_____ times in the past 28 days

Look at your JUMP app or online JUMP account and count how many of those times you used JUMP for any part of your commute **to or from school** in the past **4 weeks (28 days).** Note, the JUMP app will report a separate trip for traveling to and from **school**, so you may have more trips than commute times to **school**. Mark "0" if you haven't made a JUMP **school commute** trip in the past **4 weeks (28 days)**.

_____ trips in the past 28 days

If JUMP was **not** available to you, how would you commute to **school**? Select your **one primary method** (the one you would use for the longest portion of the trip or the entire trip).

Personally owned bike
Personally owned e-bike or e-scooter
Walk or Skateboard
Transit (Train or Bus)
Car, alone
Car, with others (e.g. carpooling)
Ridehailing service (e.g. Taxi, Uber, Lyft)
_____ Other

Would you use any **secondary methods** when commuting to **school** without JUMP? Select all that apply.

No, I would only travel by the primary method above	Car, alone
Personally owned bike	Car, with others (e.g. carpooling)
Personally owned e-bike or e-scooter	Ridehailing service (e.g. Taxi, Uber, Lyft)
Walk or Skateboard	Other

Transit (Train or Bus)

During a typical week, how many days does your commute **to school** include any of the following forms of transportation?

Walking for more than 10 minutes at a time?	▼
Bicycling (personal and JUMP)	▼
Taking public transit (for example, a bus or train)	▼
Driving yourself	▼
Riding as a passenger with someone else	▼

Other Travel Setup questions

Now we want to know about JUMP trips **not related to commuting to work/school**.

Please use your JUMP app or online JUMP account to find your **three most recent** JUMP trips with **different starting or ending locations**. Please exclude regular commute trips to and from work/school, but you can include trips that start or end at work/school if they have another purpose besides commuting (e.g. out to lunch from work). We'll call these your "**most recent trip**", "**second most recent trip**", and "**third most recent trip**" in the next section.

Since you began using JUMP, we assume you have taken JUMP with **three different starting or ending locations** (excluding work/school commutes). However, if you haven't, select how many distinct JUMP trips you have made below.

3

2

1

0

Other Travel

Provide some basic information about your **${lm://Field/2}** (that isn't a commute to/from work/school) by looking at the trip in your JUMP app.

Date	(mm/dd/yyyy)
Start hour	hour and AM or PM (do not report minutes)
Distance	miles
Travel time	minutes (do not report seconds)

Where did you **start** your **${lm://Field/2}**?

Home

Work

School

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you **started** your **${lm://Field/2}**.

Where did you **end** your **${lm://Field/2}**?

Home

Work

School

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you **ended** your **${lm://Field/2}**.

Select the most appropriate reason for traveling to the destination in your **${lm://Field/2}**.

Work related (meetings)

Grocery shopping

Other shopping

Errands

Restaurant/Bar/Entertainment

Visit friends/family

To/from a transit stop

Recreation/Exercise

Other (please specify):

During your **${lm://Field/2}**, how did you use JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your **${lm://Field/2}**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP

Walk or Skateboard

Personally owned bike

Personally owned e-bike or e-scooter

Transit (Train or Bus)

Car, alone

Car, with others (e.g. carpooling)

Ridehailing service (e.g. Taxi, Uber, Lyft)

Other

In the past **4 weeks (28 days)**, how many times did you **travel by any means** to make this trip (same start and end locations)? Mark "0" if you haven't made the trip in the past **4 weeks (28 days)**.

times in the past 28 days

Look at your JUMP app and count how many of those times you made the trip you were just telling us about **with JUMP** in the past **4 weeks (28 days)**. Mark "0" if you haven't made the trip in the past **4 weeks (28 days)**.

times in the past 28 days

If JUMP was **not** available for your **${lm://Field/2}**, what means would you use to make the trip? Select your **one primary method** (the one you would use for the longest portion of the trip or the entire trip).

None, I wouldn't make the trip

Personally owned bike

Personally owned e-bike or e-scooter

Walk or Skateboard

Transit (Train or Bus)

Car, alone

Car, with others (e.g. carpooling)

Ridehailing service (e.g. Taxi, Uber, Lyft)

Other

Would you use any **secondary methods** when making that trip without JUMP? Select all that apply.

No, I would only travel by the primary method above

Personally owned bike

Personally owned e-bike or e-scooter

Walk or Skateboard

Transit (Train or Bus)

Car, alone

Car, with others (e.g. carpooling)

Ridehailing service (e.g. Taxi, Uber, Lyft)

Other

JUMP specific

Please tell us how you pay for JUMP.

Pay as I go

General monthly membership

Student monthly membership

Other discounted monthly membership

What is your most common form of payment?

PayNearMe cash Boost Account

Credit card

Gift credit (applied credit)

How many times have you used a bike share system when visiting another city?

Never used another bike share system

Only once

2-5 times

6-10 times

more than 10 times

Have you ever used a dock-less bike or scooter share in another city that is **not** operated by JUMP? (check all that apply)

Yes, I've used a dock-less bike share

Yes, I've used a dock-less scooter share

No

Please indicate how accurately the statement describes your perceptions of the JUMP bike share system. There are no right or wrong answers.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
JUMP is convenient	O	O	O	O	O
Riding a JUMP bike is fun	O	O	O	O	O
JUMP bikes allow me to get where I need to go quickly	O	O	O	O	O
JUMP bikes allow me to arrive less sweaty	O	O	O	O	O
JUMP is inexpensive	O	O	O	O	O
JUMP bikes are comfortable	O	O	O	O	O
JUMP bikes are heavy	O	O	O	O	O
The JUMP app is easy to use	O	O	O	O	O
The JUMP bike keypad is easy to use	O	O	O	O	O

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Checking out a JUMP bike through the Uber app is convenient	○	○	○	○	○
It is hard to find a place to park JUMP bikes	○	○	○	○	○
A JUMP bike is usually available when and where I need one	○	○	○	○	○
Nearby JUMP bikes are usually sufficiently charged	○	○	○	○	○

We'd like to know how you think JUMP bikes **compare with conventional bicycles**.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel safer on a JUMP bike	○	○	○	○	○
I can more easily avoid obstacles on a JUMP bike	○	○	○	○	○
I can accelerated away from cars more easily with a JUMP bike	○	○	○	○	○
I ride faster on a JUMP bike	○	○	○	○	○
I take more risks on a JUMP bike	○	○	○	○	○

If you wanted to use JUMP for a 15 minute ride, how long would you be willing to walk to get a bike?

Up to 2 minutes

Up to 5 minutes

Up to 10 minutes

Up to 15 minutes

More than 15 minutes

We want to know how much you know about JUMP bikes. Tell us what you think is **true of JUMP**.

	True	False
JUMP bikes have only one gear	○	○
JUMP bikes are electric assisted	○	○
JUMP trips have to be less than 15 minutes	○	○
JUMP bikes should be locked to bike racks	○	○
I can bring a JUMP bike to a charging station for ride credit	○	○

Prior to using JUMP, how familiar with electric assisted bicycles were you?

I had never heard of them

I had heard of them but hadn't used them

I had ridden one before

I own one

How familiar with electric assisted bicycles are you?

I have never heard of them

I have heard of them but havn't used them

I have ridden one before

I own one

How likely are you to buy a personal electric assisted bicycle within a year from now?

Very likely to buy one

Somewhat likely to buy one

Unlikely to buy one

Not going to buy one

Travel Behavior Change

In general, **since using JUMP**, how have you changed how you...

	I **have changed** how I use it because of JUMP	I **have changed** how I use it but **not** because of JUMP	I **have not changed** how I use it	I did not use it before, and I do not use it now
drive a car alone	○	○	○	○
carpool	○	○	○	○
ride my personally owned bike	○	○	○	○
walk	○	○	○	○
Take public transit (train or bus)	○	○	○	○
Use ridehailing services (e.g. taxi, Uber, Lyft)	○	○	○	○

As a result of using JUMP, how much have you changed how often you...

	Much less often	Somewhat less often	Somewhat more often	Much more often
drive a car alone	○	○	○	○
carpool	○	○	○	○
ride my personally owned bike	○	○	○	○
walk	○	○	○	○
Public transit (train or bus)	○	○	○	○
Ridehailing service (e.g. taxi, Uber, Lyft)	○	○	○	○

How do you think your travel would be affected in the these ways if JUMP bike share service **suddenly stopped**?

	Much less often	Somewhat less often	The same amount	Somewhat more often	Much more often
I would drive...	○	○	○	○	○
I would use public transit...	○	○	○	○	○
I would ride my personally owned bike...	○	○	○	○	○
I would walk...	○	○	○	○	○
I would use Uber/Lyft...	○	○	○	○	○
I would carpool...	○	○	○	○	○

How likely is it that your travel would be affected in these ways if JUMP bike share service suddenly **stopped?**

	Very unlikely	Somewhat unlikely	Neither likely nor unlikely	Somewhat likely	Very likely
I would need to change the time of my activities	○	○	○	○	○
I would need to cancel some of my trips	○	○	○	○	○
I would need to buy a car	○	○	○	○	○

Travel characteristics

In this section we will ask a few questions about how you travel in general.

How many motor vehicles does your household have? (For example, cars, trucks, or motorcycles.)

▼

What are the types and annual miles driven (please provide your best estimate) for each vehicle (up to 5) in your household?

	Type	Miles driven during the Past 12 Months

	Type	Miles driven during the Past 12 Months
Vehicle #1		
Vehicle #2		
Vehicle #3		
Vehicle #4		
Vehicle #5		

During a typical week (7 days), about how many miles do you drive? Please do not include any driving while "on the clock" for your job.

Total during weekdays	miles
Total on weekends	miles

In general, how often do you ride a bicycle (personally owned and JUMP combined)?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

During a typical week (7 days), about how much time do you spend riding a bike (JUMP and personal)?

For travel to destinations (e.g. commuting, errands)	hours	minutes per day
For exercise or fun (e.g. mountain biking, cycling round trips)	hours	minutes per day

How many **days** in the **last 7 days** did you exercise hard enough to breathe somewhat harder than normal for **more than 10 minutes**?

_____ days in the last 7 days

How often do you use a car-sharing service like Zipcar, etc.?

Every day or almost every day
A few times per week
A few times per month
A few times per year
Not used in the last year
Never

How often do you use a ride-hailing service like Lyft, Uber, etc.?

Every day or almost every day
A few times per week
A few times per month
A few times per year
Not used in the last year
Never

Travel attitudes

For the following statements about bicycling, please indicate how accurately each describes how you feel.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I have the time to bicycle for day-to-day travel	○	○	○	○	○
I try to limit my driving as much as possible	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I need my car to do many of the things I like to do	O	O	O	O	O
I like riding a bicycle	O	O	O	O	O
Riding a bike is boring	O	O	O	O	O
I feel comfortable around cars when bicycling in town	O	O	O	O	O
Riding a bike is enjoyable	O	O	O	O	O
Many people I know think I should bicycle	O	O	O	O	O
I get stressed by cars when bicycling in town	O	O	O	O	O
I feel anxious around cars when bicycling in town	O	O	O	O	O
If I really wanted to, I could bicycle more frequently	O	O	O	O	O
I can bicycle to many places I need to go	O	O	O	O	O

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
There are good bicycle lanes and paths in the areas I need to go	O	O	O	O	O
Many people I know think bicycling is fun	O	O	O	O	O
Riding a bike is fun	O	O	O	O	O
I need my car to carry shopping or children	O	O	O	O	O
Many people I know bicycle regularly	O	O	O	O	O
Many people I know think bicycling is healthy	O	O	O	O	O

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Riding a bike is pleasant	O	O	O	O	O
I feel safe from cars when bicycling in town	O	O	O	O	O
Many people I know think bicycling is safe	O	O	O	O	O

How important are the following factors to the choices you make about your daily travel?

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Concern for the environment	O	O	O	O	O
Concern for cost	O	O	O	O	O
Desire to get exercise	O	O	O	O	O
Concern for safety from crime	O	O	O	O	O
Concern for safety from traffic	O	O	O	O	O
Desire for enjoyment	O	O	O	O	O
Concern for time	O	O	O	O	O
Desire for convenience	O	O	O	O	O

How would you rate your ability to ride a bike?

I cannot ride a bike at all because I do not know how

I can ride a bike, but I am not very confident doing so

I am somewhat confident riding a bike

I am very confident riding a bike

In general, how comfortable would you be riding a bicycle on a **four-lane street (two lanes in either direction) without a bicycle lane**, in daylight and good weather?

Uncomfortable and I wouldn't ride on it

Uncomfortable but I would ride on it

Comfortable

Socio-demographics

A Few things about you

Thank you so much for your input! In this last section, we would like to learn a little more about you. Remember, this information will remain anonymous.

What is your age?

_____ years

To which gender do you most identify?

Woman

Man

_____ Not listed:

Prefer not to say

Please tell us which race/ethnicity best describes you (select all that apply):

Black/African American

Hispanic/Latino

White

Asian

Pacific Islander/Native Hawaiian

American Indian/Alaskan Native

Other (please specify)

_____

What is the primary language spoken in your home?

English

Spanish

Hmong

Chinese

Vietnamese

Tagalog

Russian

Other (please specify)

How many people live in your household, including you?

Number of people under 16	
Number of people 16 years and older	

What is your highest completed level of education?

No formal education

Grade school or Jr. High

High school diploma or GED

Associate or technical certificate

Bachelor's degree(s)

Graduate degree(s)

Do you have a credit card or debit card?

Yes

In the past but not currently

Have never had one

Do you live with family members or others with whom you share an income?

Yes

No

Last year, what was your approximate **personal** income before taxes?

Less than $10,000
$10,000-$25,000
$25,001 - $50,000
$50,001 - $75,000
$75,001 - $100,000
$100,001 - $125,000
$125,001 - $150,000
$150,001 - $175,000
$175,001 - $200,000
More than $200,000

Last year, what was your approximate **household** income before taxes?

Less than $10,000
$10,000-$25,000
$25,001 - $50,000
$50,001 - $75,000
$75,001 - $100,000
$100,001 - $125,000
$125,001 - $150,000
$150,001 - $175,000
$175,001 - $200,000
More than $200,000

How much do you spend on travel in a **typical** month? Mark "0" for all those you don't typically pay for.

Gasoline		dollars/month
Parking		dollars/month

Tolls		dollars/month
Transit fares		dollars/month
JUMP		dollars/month
Car payments		dollars/month
Car maintenance		dollars/month
Car insurance		dollars/month
Uber/Lyft fares		dollars/month
Other		dollars/month

Contact and End

If you wish to be included in the drawing or you are willing to be contacted further, please indicate the purposes which we may contact you and provide an email below. We will only use your email for the purposes you authorize.

Can we contact you ...

	Yes	No
for the second phase of this survey in the spring? You will receive an additional $5 gift card and entered into another drawing for a $100 gift card for completing the spring survey.	○	○
to provide your $5 gift card and if you win the $100 gift card prize?	○	○
for the second phase of this survey in the spring?	○	○
if you win the $100 gift card prize?	○	○
if we have any questions about your survey?	○	○

Please provide your email.

JUMP Intro

Welcome to the JUMP bike share survey!

The Institute of Transportation Studies at the University of California, Davis in partnership with the Sacramento Area Council of Governments (SACOG) and JUMP is conducting a study to learn more about how people use JUMP. Our focus is on the Sacramento-area JUMP bike /scooter share. By understanding how JUMP functions as a regular mode of transportation, city officials can better address the transportation needs of your community.

How long...
You are being asked to join a research study by taking this survey, which should take **about 25 minutes**. Even though you scanned the QR code, we highly recommend taking this survey on a computer (type **bit.ly/JUMP-survey** into your browser) because it will be much easier than on a mobile phone.

We ask that you log in to your JUMP account (https://app.jumpbikes.com/users/sign_in) to view your trip history during this survey. If you have only used JUMP through the Uber app, please sign up for a JUMP account to get a list of your JUMP trips to refer to during this survey.

What you get...
After completing the survey, those who have used JUMP in the greater Sacramento region will be awarded a $5 Amazon gift card for participation and be entered into a drawing for a $100 Amazon gift card. Everyone can be entered in the drawing regardless of participation: if you prefer not to participate in the survey but want to be included in the drawing, please email me at dtfitch@ucdavis.edu.

Participation in research is completely voluntary. You are free to decline to take part in the project. You can decline to answer any questions and you can stop taking part in the project at any time. Whether or not you choose to participate, or answer any question, or stop participating in the project, there will be no penalty to you or loss of benefits to which you are otherwise entitled.

Questions

If you have any questions about this research, please feel free to contact me.

Contact

Dillon Fitch
dtfitch@ucdavis.edu

I agree to participate in the JUMP survey

I do not wish to participate at all

Welcome to the JUMP bike share survey!

The Institute of Transportation Studies at the University of California, Davis in partnership with the Sacramento Area Council of Governments (SACOG) and JUMP is conducting a study to learn more about how people use JUMP. Our focus is on the Sacramento-area JUMP bike /scooter share. By understanding how JUMP functions as a regular mode of transportation, city officials can better address the transportation needs of your community.

How long...

You are being asked to join a research study by taking this survey, which should take **about 25 minutes**. We ask that you log in to your JUMP account (https://app.jumpbikes.com/users/sign_in) to view your trip history during this survey. If you have only used JUMP through the Uber app, please sign up for a JUMP account to get a list of your JUMP trips to refer to during this survey.

What you get...

After completing the survey, those who have used JUMP in the greater Sacramento region will be awarded a $5 Amazon gift card for participation and be entered into a drawing for a $100 Amazon gift card. Everyone can be entered in the drawing regardless

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Questions

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Contact

Dillon Fitch
dtfitch@ucdavis.edu

I agree to participate in the JUMP survey

I do not wish to participate at all

Opening Questions

What city do you live in?

Sacramento

West Sacramento

Davis

Other city **in** the greater Sacramento region (specify city)

Other city **outside** the greater Sacramento region (specify city and state)

Have you ever used the JUMP bike or scooter share in Sacramento, West Sacramento, or Davis?

Yes, I've used both JUMP bikes and scooters

Yes, I've only used JUMP bikes

Yes, I've only used JUMP scooters

No

Sac-area Visitors

When you last visited the Sacramento region **and** used JUMP, what was the purpose of your visit to the Sacramento region?

Work/school-related visitor

Leisure-related visitor

Other

When you last visited the Sacramento region and used JUMP, for what purposes did you use JUMP?

For exercise or recreation

To explore the city

To go to meetings or appointments

To go to restaurants, bars, or other entertainment

Other (please describe)

How many days in the past **4 weeks (28 days)** did you spend in the Sacramento region? Mark "0" if you have not visited the region in the past month.

days in the past 28 days

Employment and School questions

What is your work status?

Working, and commute to at least one workplace

Working, and don't commute (e.g. from home or without fixed workplace locations)

Retired but still commute to at least one workplace

Retired and don't commute to a workplace

Not currently working

Permanently unable to work

Are you currently a student?

Full-time student

Part-time student

Not a student

Do you travel to at least one school campus?

Yes, I travel to at least one school campus (even if infrequently)

No, I only take courses online

JUMP Travel Behavior by Purpose

How often do you use JUMP to connect to or from a transit stop using...

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
JUMP bikes	○	○	○	○	○	○
JUMP scooters	○	○	○	○	○	○

How often do you take **JUMP bike** trips for the following purposes? (A trip is defined as going from one location to another (one-way))

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
Commute to/from **school**	○	○	○	○	○	○

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
Commute to/from **primary workplace**	○	○	○	○	○	○
Work related (meetings)	○	○	○	○	○	○
Grocery shopping	○	○	○	○	○	○
Other shopping	○	○	○	○	○	○
To run errands	○	○	○	○	○	○
To/from a restaurant, bar, or other entertainment	○	○	○	○	○	○
Visit friends/family	○	○	○	○	○	○
For recreation/exercise	○	○	○	○	○	○
Other	○	○	○	○	○	○

How often do you take **JUMP scooter** trips for the following purposes? (A trip is defined as going from one location to another (one-way))

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
Commute to/from **school**	○	○	○	○	○	○
Commute to/from **primary workplace**	○	○	○	○	○	○
Work related (meetings)	○	○	○	○	○	○
Grocery shopping	○	○	○	○	○	○
Other shopping	○	○	○	○	○	○
To run errands	○	○	○	○	○	○
To/from a restaurant, bar, or other entertainment	○	○	○	○	○	○
Visit friends/family	○	○	○	○	○	○

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
For recreation/exercise	○	○	○	○	○	○
Other _____	○	○	○	○	○	○

Why do you choose to use JUMP scooters but not JUMP bikes? (select all that apply)

I feel safer on a bike

I have more fun on a bike

Scooters are more available than bikes

I can more easily carry things with me

I can go faster

_____ Other: (please list)

Why do you choose to use JUMP bikes but not JUMP scooters? (select all that apply)

I feel safer on a bike

I have more fun on a bike

Bikes are more available than scooters

Scooters aren't an option where I travel (for example in Davis)

I can more easily carry things with me

I can go faster

_____ Other: (please list)

Would you prefer to ride a JUMP bike or JUMP scooter?

I always prefer a JUMP bike

I always prefer a JUMP scooter

_____ It depends: (please describe)

JUMP specific

Please tell us how you pay for JUMP.

Pay as I go

General monthly membership

Student monthly membership

Other discounted monthly membership

What is your most common form of payment?

PayNearMe cash Boost Account

Credit card

Gift credit (applied credit)

How many times have you used a bike share system when visiting another city?

Never used another bike share system

Only once

2-5 times

6-10 times

more than 10 times

Have you ever used a dock-less bike or scooter share (JUMP, Lime, Spin, Ofo, etc.) when visiting another city ? (check all that apply)

Yes, I've used a dock-less bike share

Yes, I've used a dock-less scooter share

No

Please indicate how accurately the statement describes your perceptions of the **JUMP bike share** system. There are no right or wrong answers.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
JUMP bikes are convenient	○	○	○	○	○
Riding a JUMP bike is fun	○	○	○	○	○
JUMP bikes allow me to get where I need to go quickly	○	○	○	○	○
JUMP bikes allow me to arrive less sweaty	○	○	○	○	○
JUMP bikes are inexpensive	○	○	○	○	○
JUMP bikes are comfortable	○	○	○	○	○
JUMP bikes are heavy	○	○	○	○	○
It is hard to find a place to park JUMP bikes	○	○	○	○	○
A JUMP bike is usually available when and where I need one	○	○	○	○	○

Please indicate how accurately the statement describes your perceptions of the **JUMP scooter share** system. There are no right or wrong answers.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
JUMP scooter are convenient	○	○	○	○	○
Riding a JUMP scooter is fun	○	○	○	○	○
JUMP scooters allow me to get where I need to go quickly	○	○	○	○	○
JUMP scooters allow me to arrive less sweaty	○	○	○	○	○
JUMP scooters are inexpensive	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
JUMP scooters are comfortable	○	○	○	○	○
JUMP scooters are heavy	○	○	○	○	○
It is hard to find a place to park JUMP scooters	○	○	○	○	○
A JUMP scooter is usually available when and where I need one	○	○	○	○	○

We'd like to know how you think JUMP bikes **compare with conventional bicycles**.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel safer on a JUMP bike	○	○	○	○	○
I can more easily avoid obstacles on a JUMP bike	○	○	○	○	○
I can accelerate away from cars more easily with a JUMP bike	○	○	○	○	○
I ride faster on a JUMP bike	○	○	○	○	○
I take more risks on a JUMP bike	○	○	○	○	○

If you wanted to use JUMP for a 15 minute ride, how long would you be willing to walk to get a bike?

Up to 2 minutes

Up to 5 minutes

Up to 10 minutes

Up to 15 minutes

More than 15 minutes

We want to know how much you know about JUMP. Tell us what you think is **true of JUMP**.

	True	False
JUMP bikes are electric assisted	○	○
JUMP bikes are supposed to be parked at bike racks	○	○
JUMP scooters **do not** have to be parked at bike racks	○	○
JUMP scooters **are not** supposed to be ridden on sidewalks	○	○

Prior to using JUMP, how familiar with electric assisted bicycles were you?

I had never heard of them

I had heard of them but hadn't used them

I had ridden one before

I own one

How familiar with electric assisted bicycles are you?

I have never heard of them

I have heard of them but havn't used them

I have ridden one before

How likely are you to buy a **personal electric assisted bicycle** within a year from now?

Very likely to buy one

Somewhat likely to buy one

Unlikely to buy one

Not going to buy one

I already own one and will not buy another

Did your experience on JUMP influence your decision to buy an **electric assisted bicycle**?

Yes

No, I bought my e-bike before I used JUMP

No, I bought my e-bike after I used JUMP, but it didn't influence my decision

How likely are you to buy a **personal stand-up electric scooter** within a year from now?

Very likely to buy one

Somewhat likely to buy one

Unlikely to buy one

Not going to buy one

I already own one and will not buy another

Did your experience on JUMP influence your decision to buy a **personal stand-up electric scooter**?

Yes

No, I bought my e-scooter before I used JUMP

No, I bought my e-scooter after I used JUMP, but it didn't influence my decision

Please indicate your level of agreement with the following statements about other JUMP users. There are no right or wrong answers.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I am annoyed by people on JUMP bikes	○	○	○	○	○
I am annoyed by people on JUMP scooters	○	○	○	○	○
JUMP scooters look fun	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I worry about getting hit by a JUMP bike rider when I walk	○	○	○	○	○
I worry about hitting a JUMP bike rider when I drive	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I worry about getting hit by a JUMP scooter rider when I walk	○	○	○	○	○
I worry about hitting a JUMP scooter rider when I drive	○	○	○	○	○
Most people park JUMP bikes responsibly	○	○	○	○	○
Most people park JUMP scooters responsibly	○	○	○	○	○

Travel Behavior Change

In general, **since using JUMP**, how have you changed how you...

	I **have changed** how I use it because of JUMP	I **have changed** how I use it but **not** because of JUMP	I **have not changed** how I use it	I did not use it before, and I do not use it now
Drive a car alone	○	○	○	○
Carpool	○	○	○	○
Ride my personally owned bike	○	○	○	○
Walk	○	○	○	○
Take public transit (train or bus)	○	○	○	○

	I **have changed** how I use it because of JUMP	I **have changed** how I use it but **not** because of JUMP	I **have not changed** how I use it	I did not use it before, and I do not use it now
Use ridehailing services (e.g. taxi, Uber, Lyft)	○	○	○	○

As a result of using JUMP, how much have you changed how often you...

	Much less often	Somewhat less often	Somewhat more often	Much more often
drive a car alone	○	○	○	○
carpool	○	○	○	○
ride my personally owned bike	○	○	○	○
walk	○	○	○	○
Public transit (train or bus)	○	○	○	○
Ridehailing service (e.g. taxi, Uber, Lyft)	○	○	○	○

How do you think your use of other travel modes would be affected if JUMP service **suddenly stopped**?

	Much less often	Somewhat less often	The same amount	Somewhat more often	Much more often
I would drive...	○	○	○	○	○
I would use public transit...	○	○	○	○	○
I would ride my personally owned bike...	○	○	○	○	○
I would walk...	○	○	○	○	○
I would use Uber/Lyft...	○	○	○	○	○
I would carpool...	○	○	○	○	○

How likely is it that your travel would be affected if JUMP service **suddenly stopped?**

Not at all likely	Somewhat likely	Very likely

	Not at all likely	Somewhat likely	Very likely
I would need to change the time of my activities	○	○	○
I would need to cancel some of my trips	○	○	○
I would need to buy a car	○	○	○

Travel characteristics

In this section we will ask a few questions about how you travel in general.

How many motor vehicles does your household have? (For example, cars, trucks, or motorcycles.)

▼

What are the types and annual miles driven (please provide your best estimate) for each vehicle (up to 5) in your household?

	Type	Miles driven during the Past 12 Months
Vehicle #1	▼	
Vehicle #2	▼	
Vehicle #3	▼	
Vehicle #4	▼	
Vehicle #5	▼	

During a typical week (7 days), about how many miles do you drive? Please do not include any driving while "on the clock" for your job.

Total during weekdays	miles
Total on weekends	miles

In general, how often do you ride a bicycle (personally owned and JUMP combined)?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

During a typical week (7 days), about how much time do you spend riding a bike (JUMP and personal)?

For travel to destinations (e.g. commuting, errands)		hours		minutes per day
For exercise or fun (e.g. mountain biking, cycling round trips)		hours		minutes per day

How many **days** in the **last 7 days** did you exercise hard enough to breathe somewhat harder than normal for **more than 10 minutes**?

_____ days in the last 7 days

How often do you use a car-sharing service like Zipcar, GIG, etc.?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

How often do you use a ride-hailing service like Lyft, Uber, etc.?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

During the last 7 days (up to yesterday), on how many days did you:

Drive or ride in a car?	▼
Ride on a bus or train?	▼
Walk outdoors for more than 10 minutes at a time?	▼
Bicycle for any purpose?	▼
Bicycle to or from public transit?	▼
Bicycle to or from work or school?	▼
Bicycle to get somewhere OTHER than work, school, or public transit (e.g., to go shopping, see a friend, or eat a meal)?	▼
Ride a bicycle for exercise or recreation, without having a destination for the trip?	▼

Were you out of town during the last 7 days?

No

Yes - if yes, how many days?

Travel attitudes

For the following statements about bicycling, please indicate how accurately each describes how you feel.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Many people I know think bicycling is safe	○	○	○	○	○
There are good bicycle lanes and paths in the areas I need to go	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Bicycling is a normal mode of transportation for adults in my community	○	○	○	○	○
Many bicyclists I see look like they are too poor to own a car	○	○	○	○	○
I feel safe from cars when bicycling in town	○	○	○	○	○
Riding a bike is boring	○	○	○	○	○
If I really wanted to, I could bicycle more frequently	○	○	○	○	○
I feel comfortable around cars when bicycling in town	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Riding a bike is fun	○	○	○	○	○
Many people I know bicycle regularly	○	○	○	○	○
I like riding a bicycle	○	○	○	○	○
Riding a bike is enjoyable	○	○	○	○	○
Many bicyclists I see appear to have little regard for their personal safety	○	○	○	○	○
Many people I know think bicycling is healthy	○	○	○	○	○
I try to travel by bike as much as possible	○	○	○	○	○
I have the time to bicycle for day-to-day travel	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I need my car to carry shopping or children	O	O	O	O	O
Riding a bike is pleasant	O	O	O	O	O
I try to limit my driving as much as possible	O	O	O	O	O
Many people I know think I should bicycle	O	O	O	O	O
Many people I know think bicycling is fun	O	O	O	O	O
Many bicyclists I see appear to spend a lot of money on their bicycle and accessories	O	O	O	O	O
I can bicycle to many places I need to go	O	O	O	O	O
I need my car to do many of the things I like to do	O	O	O	O	O

Strongly disagree Somewhat disagree Neither agree nor disagree Somewhat agree Strongly agree

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel anxious around cars when bicycling in town	O	O	O	O	O
I get stressed by cars when bicycling in town	O	O	O	O	O

How important are the following factors to the choices you make about your daily travel?

	Not at all important	Slightly important	Moderately important	Very important	Extremely important

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Concern for the environment	○	○	○	○	○
Concern for cost	○	○	○	○	○
Desire to get exercise	○	○	○	○	○
Concern for safety from crime	○	○	○	○	○
Concern for safety from traffic	○	○	○	○	○
Desire for enjoyment	○	○	○	○	○
Concern for time	○	○	○	○	○
Desire for convenience	○	○	○	○	○

How would you rate your ability to ride a bike?

I cannot ride a bike at all because I do not know how

I can ride a bike, but I am not very confident doing so

I am somewhat confident riding a bike

I am very confident riding a bike

In general, how comfortable would you be riding a bicycle on a **four-lane street (two lanes in either direction) without a bicycle lane**, in daylight and good weather?

Uncomfortable and I wouldn't ride on it

Uncomfortable but I would ride on it

Comfortable

Have you ever ridden a stand-up electric scooter (like the kind in the JUMP system)?

Yes

No

How would you rate your confidence to ride a stand-up electric scooter?

I am not very confident riding a stand-up electric scooter

I am somewhat confident riding a stand-up electric scooter

I am very confident riding a stand-up electric scooter

How would you rate your confidence to try out a stand-up electric scooter?

I would not be very confident

I would be somewhat confident

I would be very confident

In general, how comfortable would you be riding a stand-up electric scooter on a **four-lane street (two lanes in either direction)** without a bicycle lane, in daylight and good weather?

Uncomfortable and I wouldn't ride on it

Uncomfortable but I would ride on it

Comfortable

Socio-demographics

A Few things about you

Thank you so much for your input! In this section, we would like to learn a little more about you. Remember, this information will remain anonymous and is for research only.

What is your age?

_____ years

To which gender do you most identify?

Woman

Man

Not listed:

Prefer not to say

Please tell us which race and ethnicity categories best describe you (select all that apply):

Black/African American

Hispanic/Latino

White

Asian

Pacific Islander/Native Hawaiian

American Indian/Alaskan Native

Other (please specify)

How many people live in your household, including you?

Number of people under 16

Number of people 16 years and older

What is your highest completed level of education?

No formal education

Grade school or Jr. High

High school diploma or GED

Associate or technical certificate

Bachelor's degree(s)

Graduate degree(s)

Do you have a credit card or debit card?

Yes

In the past but not currently

Have never had one

Do you live with family members or others with whom you share an income?

Yes

No

Last year, what was your approximate **personal** income before taxes?

Less than $10,000

$10,000-$25,000

$25,001 - $50,000

$50,001 - $75,000

$75,001 - $100,000

$100,001 - $125,000

$125,001 - $150,000

$150,001 - $175,000

$175,001 - $200,000

More than $200,000

Last year, what was your approximate **household** income before taxes?

Less than $10,000

$10,000-$25,000

$25,001 - $50,000

$50,001 - $75,000

$75,001 - $100,000

$100,001 - $125,000

$125,001 - $150,000

$150,001 - $175,000

$175,001 - $200,000

More than $200,000

JUMP Frequency by looking at APP

For the following questions, please log in to your JUMP account on a separate browser page (https://app.jumpbikes.com/users/sign_in). To find your recent JUMP trips go to Usage->My Trips. Note: your account page will only show you JUMP bike trips. We will not ask you about specific scooter trips.

Look at your JUMP account and tell us when you made your **most recent** JUMP bike trip.

Date (mm/dd/yyyy) _____

Look at your JUMP account and tell us when you made your **first** JUMP bike trip.

Date (mm/dd/yyyy) _____

Look at your JUMP account and count all of your JUMP trips in the past **4 weeks (28 days)**. How many times did you use JUMP bikes?

_____ trips in the past 28 days

Why haven't you used JUMP in the past **4 weeks (28 days)**? Select all that apply.

- Too costly
- Inconvenient
- Concern for traffic safety
- No bikes available
- Nearby bikes were not sufficiently charged
- No need
- Other (please describe) _____

Travel Behavior (Home location)

In the following map questions, we will ask about how you commute to work and/or school (even if you don't use JUMP for it). You can type an address or cross street to

quickly identify a location and/or drag the marker manually. (Remember that all information you provide is strictly confidential and for research purposes only).

Type an address, cross street, or drag the marker to your **home** or nearest intersection to your **home**.

Work Travel

Type an address, cross street, or drag the marker to your **primary workplace** (workplace you travel to most frequently) or nearest intersection to your **primary workplace**.

From where do you usually start your commute to your **primary workplace**?

Home

School

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you start your commute to your **primary workplace**.

During a typical week, how many days does your commute **to** your **primary workplace** include any of the following forms of transportation?

Walking for more than 10 minutes at a time? ▼

Bicycling (personal and JUMP)

	▼
Taking public transit (for example, a bus or train)	▼
Driving yourself	▼
Riding as a passenger with someone else	▼

Think of your last **JUMP bike** trip as a part of your commute to or from your **primary workplace** and tell us how you used JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

JUMP was my secondary vehicle - I used it to connect to another primary travel mode

During your last **JUMP bike** trip as a part of your commute to or from your **primary workplace**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP

Personally owned bike

Personally owned e-bike

Personally owned e-scooter

JUMP scooter

Walk

Transit (Train or Bus)

Car, alone

Car, with others (e.g. carpooling)

Ridehailing service (e.g. Taxi, Uber, Lyft)

Other

Think of your last **JUMP scooter** trip as a part of your commute to or from your **primary workplace** and tell us how you used JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your last **JUMP scooter** trip as a part of your commute to or from your **primary workplace**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP

Personally owned bike

Personally owned e-bike

Transit (Train or Bus)

Car, alone

Car, with others (e.g. carpooling)

Personally owned e-scooter

JUMP bike

Walk

Ridehailing service (e.g. Taxi, Uber, Lyft)

Other

School Travel

Type an address, cross street, or drag the marker to your **school** or nearest intersection to your **school**.

From where do you start your commute to **school**?

Home

Work

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you start your commute to **school**.

During a typical week, how many days does your commute **to school** include any of the following forms of transportation?

Walking for more than 10 minutes at a time?	▼
Bicycling (personal and JUMP)	▼
Taking public transit (for example, a bus or train)	▼
Driving yourself	▼
Riding as a passenger with someone else	▼

Think of your last **JUMP bike** trip as a part of your commute to or from your **school** and tell us how you used JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your last **JUMP bike** trip as a part of your commute to or from your **school**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP	Transit (Train or Bus)
Personally owned bike	Car, alone
Personally owned e-bike	Car, with others (e.g. carpooling)

Personally owned e-scooter
JUMP scooter
Walk
Ridehailing service (e.g. Taxi, Uber, Lyft)
Other

Think of your last **JUMP scooter** trip as a part of your commute to or from your **school** and tell us how you used JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip
Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your last **JUMP scooter** trip as a part of your commute to or from your **school**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP
Personally owned bike
Personally owned e-bike
Personally owned e-scooter
JUMP bike
Walk
Transit (Train or Bus)
Car, alone
Car, with others (e.g. carpooling)
Ridehailing service (e.g. Taxi, Uber, Lyft)
Other

Other Travel Setup questions

Now we want to know about JUMP trips **not related to commuting to work/school**.

Please use your online JUMP account (https://app.jumpbikes.com/users/sign_in) to find your JUMP trip history.

We want to know about your **three most recent** JUMP trips with **different starting or ending locations**. Please exclude regular commute trips to and from work/school, but you can include trips that start or end at work/school if they have another purpose besides commuting (e.g. out to lunch from work). We'll call these your "**most recent**

trip", "**second most recent trip**", and "**third most recent trip**" in the next section. If you haven't taken JUMP on three distinct trips not related to commuting, select how many distinct JUMP trips you have made below.

3

2

1

0

Other Travel

Provide some basic information about your **${lm://Field/2}** (that isn't a commute to/from work/school) by looking at the trip in your JUMP account.

Date	(mm/dd/yyyy)
Start hour	hour and AM or PM (do not report minutes)
Distance	miles
Travel time	minutes (do not report seconds)

Was your **${lm://Field/2}** on a JUMP bike or scooter?

JUMP bike

JUMP scooter

Where did you **start** your **${lm://Field/2}**?

Home

Work

School

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you **started** your **${lm://Field/2}**.

Where did you **end** your **${lm://Field/2}**?

Home

Work

School

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you **ended** your **${lm://Field/2}**.

Select the most appropriate reason for traveling to the destination in your **${lm://Field/2}**.

Work related (meetings)
Grocery shopping
Other shopping
Errands
Restaurant/Bar/Entertainment
Visit friends/family
To/from a transit stop
Recreation/Exercise
Other (please specify):

During your **${lm://Field/2}**, how did you use JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip
Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your **${lm://Field/2}**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP
Walk
Personally owned bike
Personally owned e-bike
Personally owned e-scooter
Transit (Train or Bus)
Car, alone
Car, with others (e.g. carpooling)
Ridehailing service (e.g. Taxi, Uber, Lyft)
Other

In the past **4 weeks (28 days)**, how many times did you **travel by any means** to make this trip (same start and end locations)? Mark "0" if you haven't made the trip in the

past **4 weeks (28 days)**.

_____ times in the past 28 days

Look at your JUMP app and count how many of those times you made the trip you were just telling us about **with JUMP** in the past **4 weeks (28 days)**. Mark "0" if you haven't made the trip in the past **4 weeks (28 days)**.

_____ times in the past 28 days

If JUMP was **not** available for your **${lm://Field/2}**, what means would you use to make the trip? Select your **one primary method** (the one you would use for the longest portion of the trip or the entire trip).

- None, I wouldn't make the trip
- Personally owned bike
- Personally owned e-bike
- Personally owned e-scooter
- Walk
- Transit (Train or Bus)
- Car, alone
- Car, with others (e.g. carpooling)
- Ridehailing service (e.g. Taxi, Uber, Lyft)
- Other

Would you use any **secondary methods** when making that trip without JUMP? Select all that apply.

- No, I would only travel by the primary method above
- Personally owned bike
- Personally owned e-bike
- Personally owned e-scooter
- Walk
- Transit (Train or Bus)
- Car, alone
- Car, with others (e.g. carpooling)
- Ridehailing service (e.g. Taxi, Uber, Lyft)
- Other

Collisions Setup

Last thing...

How many walk, bike, e-bike or e-scooter collisions have you had in the last **3 years?**

Collisions

You have indicated you have been in **${q://QID362/ChoiceTextEntryValue}** collisions in the past 3 years.

You have indicated you have been in more than 3 collisions in the past 3 years. Please only tell us about the 3 most recent collisions.

Starting from your **${lm://Field/2}** collision, how were you traveling immediately before your collision?

- Walking
- Personally owned bike
- Personally owned e-bike
- Personally owned e-scooter
- JUMP bike
- JUMP e-scooter

What was your **${lm://Field/2}** collision with?

- Car, Moving
- Car, Parked
- Truck
- Bus
- Bicycle
- E-scooter
- Pedestrian
- Animal
- Debris or other temporary obstacles
- Other (please specify)

Where were you during your **${lm://Field/2}** collision?

- Street (no bike lane)

Bike lane

Protected bike lane

Off-street bike/pedestrian path

Sidewalk

Other (please specify)

Were you injured during your **${lm://Field/2}** collision?

No

Yes, but didn't receive treatment

Yes, received treatment but was not hospitalized

Yes, was hospitalized

Were you wearing a helmet during your **${lm://Field/2}** collision?

Yes

No

What were the light conditions for **${lm://Field/2}** collision?

Darkness

Twilight

Light

Was your **${lm://Field/2}** collision reported to the police?

Yes

No

Contact and End

If you wish to be included in the drawing or you are willing to be contacted further, please indicate the purposes which we may contact you and provide an email below.

Can we contact you ...

	Yes	No
to provide your $5 gift card and if you win the $100 gift card prize?	○	○
if we have any questions about your survey?	○	○
for future JUMP related surveys by UC Davis?	○	○
for a UC Davis survey on housing priorities and accessory dwelling units?	○	○
for a UC Davis survey on ridehailing and transit?	○	○

Please provide your email. We will only use your email for the purposes you authorize above.

JUMP Intro

Welcome to the second round of the JUMP survey!

The Institute of Transportation Studies at the University of California, Davis in partnership with the Sacramento Area Council of Governments (SACOG) and JUMP is conducting a study to learn more about how people use JUMP.

How long...
This second survey is shorter than the one you took in the Fall of 2018. It should only take **15-20 minutes**. Given feedback from our last survey, we also recommend that you take the survey on a normal web browser, not your smartphone. We ask that you log in to your JUMP account (https://app.jumpbikes.com/users/sign_in) to view your trip history (The current JUMP app does not show your entire trip history since the recent app update). If you have only used JUMP through the Uber app, please sign up for a JUMP account to get a list of your JUMP trips to refer to during this survey.

What you get...
After completing the survey, you will be awarded another $5 Amazon gift card for participation and be entered into a new drawing for a $100 Amazon gift card. Everyone can be entered in the drawing regardless of participation: if you prefer not to participate in the survey but want to be included in the drawing, please email me at dtfitch@ucdavis.edu.

Participation in research is completely voluntary. You are free to decline to take part in the project. You can decline to answer any questions and you can stop taking part in the project at any time. Whether or not you choose to participate, or answer any question, or stop participating in the project, there will be no penalty to you or loss of benefits to which you are otherwise entitled.

Questions

If you have any questions about this research, please feel free to contact me.

Contact

Dillon Fitch
dtfitch@ucdavis.edu

I agree to participate in round two of the JUMP survey

I do not wish to participate

Opening Questions

Since the first JUMP survey in October/November of 2018, please indicate if any of the following things have changed. (**Select all that apply**)

I've moved residences

I've changed my work status or primary workplace

I've changed my school status or primary school location

My household bought, sold, leased, or gave up a lease on one or more personal vehicles

My number of household members, education status, or income has changed

None of the above

What city do you live in?

Sacramento

West Sacramento

Davis

Other city **in** the greater Sacramento region (specify city)

Other city **outside** the greater Sacramento region (specify city and state)

Employment and School questions

What is your work status?

Working, and commute to at least one workplace

Working, and don't commute (e.g. from home or without fixed workplace locations)

Retired but still commute to at least one workplace

Retired and don't commute to a workplace

Not currently working

Permanently unable to work

Are you currently a student?

Full-time student

Part-time student

Not a student

Do you travel to at least one school campus?

Yes, I travel to at least one school campus (even if infrequently)

No, I only take courses online

JUMP Travel Behavior by Purpose

Have you ever used the JUMP scooter share in Sacramento, West Sacramento, or Davis?

Yes, I've used a JUMP scooter

No, I've only used JUMP bikes

How often do you use JUMP to connect to or from a transit stop using...

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
JUMP bikes	○	○	○	○	○	○

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
JUMP scooters	○	○	○	○	○	○

How often do you take **JUMP bike** trips for the following purposes? (A trip is defined as going from one location to another (one-way))

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
Commute to/from **school**	○	○	○	○	○	○
Commute to/from **primary workplace**	○	○	○	○	○	○
Work related (meetings)	○	○	○	○	○	○
Grocery shopping	○	○	○	○	○	○
Other shopping	○	○	○	○	○	○
To run errands	○	○	○	○	○	○
To/from a restaurant, bar, or other entertainment	○	○	○	○	○	○
Visit friends/family	○	○	○	○	○	○
For recreation/exercise	○	○	○	○	○	○
Other	○	○	○	○	○	○

How often do you take **JUMP scooter** trips for the following purposes? (A trip is defined as going from one location to another (one-way))

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
Commute to/from **school**	○	○	○	○	○	○
Commute to/from **primary workplace**	○	○	○	○	○	○

	5 + trips a week	3-4 trips a week	1-2 trips a week	1-3 trips a month	Less than one trip a month	Never
Work related (meetings)	○	○	○	○	○	○
Grocery shopping	○	○	○	○	○	○
Other shopping	○	○	○	○	○	○
To run errands	○	○	○	○	○	○
To/from a restaurant, bar, or other entertainment	○	○	○	○	○	○
Visit friends/family	○	○	○	○	○	○
For recreation/exercise	○	○	○	○	○	○
Other	○	○	○	○	○	○

Why do you choose to use JUMP bikes but not JUMP scooters? (select all that apply)

I feel safer on a bike

I have more fun on a bike

Bikes are more available than scooters

Scooters aren't an option where I travel (for example in Davis)

I can more easily carry things with me

I can go faster

Other: (please list)

Would you prefer to ride a JUMP bike or JUMP scooter?

I always prefer a JUMP bike

I always prefer a JUMP scooter

It depends: (please describe)

JUMP specific

Please indicate how accurately the statement describes your perceptions of the **JUMP scooter share** system. There are no right or wrong answers.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
JUMP scooters are convenient	○	○	○	○	○
Riding a JUMP scooter is fun	○	○	○	○	○
JUMP scooters allow me to get where I need to go quickly	○	○	○	○	○
JUMP scooters allow me to arrive less sweaty	○	○	○	○	○
JUMP scooters are inexpensive	○	○	○	○	○
JUMP scooters are comfortable	○	○	○	○	○
JUMP scooters are heavy	○	○	○	○	○
It is hard to find a place to park JUMP scooters	○	○	○	○	○
A JUMP scooter is usually available when and where I need one	○	○	○	○	○
Nearby JUMP scooters are usually sufficiently charged	○	○	○	○	○

We want to know how much you know about JUMP. Tell us what you think is **true of JUMP**.

	True	False
JUMP bikes are electric assisted	○	○
JUMP bikes are supposed to be parked at bike racks	○	○

	True	False
JUMP scooters **do not** have to be parked at bike racks	○	○
JUMP scooters **are not** supposed to be ridden on sidewalks	○	○

Do you own an electric assisted bicycle (e-bike) or electric stand up scooter (e-scooter) (like the kinds in the JUMP system)? (select all that apply)

Yes, I own an e-bike

Yes, I own an e-scooter

No, I don't own either

Did your experience on JUMP influence your decision to buy an e-bike?

Yes

No, I bought my e-bike before I used JUMP

No, I bought my e-bike after I used JUMP, but it didn't influence my decision

Did your experience on JUMP influence your decision to buy an e-scooter?

Yes

No, I bought my e-scooter before I used JUMP

No, I bought my e-scooter after I used JUMP, but it didn't influence my decision

How likely are you to buy a **personal electric assisted bicycle** within a year from now?

Very likely to buy one

Somewhat likely to buy one

Unlikely to buy one

Not going to buy one

How likely are you to buy a **personal stand-up electric scooter** within a year from now?

Very likely to buy one

Somewhat likely to buy one

Unlikely to buy one

Not going to buy one

Please indicate your level of agreement with the following statements about other JUMP users. There are no right or wrong answers.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I am annoyed by people on JUMP bikes	O	O	O	O	O
I am annoyed by people on JUMP scooters	O	O	O	O	O
JUMP scooters look fun	O	O	O	O	O
I worry about getting hit by a JUMP bike rider when I walk	O	O	O	O	O
I worry about hitting a JUMP bike rider when I drive	O	O	O	O	O

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I worry about getting hit by a JUMP scooter rider when I walk	O	O	O	O	O
I worry about hitting a JUMP scooter rider when I drive	O	O	O	O	O
Most people park JUMP bikes responsibly	O	O	O	O	O
Most people park JUMP scooters responsibly	O	O	O	O	O

Travel Behavior Change

In general, **since using JUMP**, how have you changed how you...

	I **have changed** how I use it because of JUMP	I **have changed** how I use it but **not** because of JUMP	I **have not changed** how I use it	I did not use it before, and I do not use it now
Drive a car alone	○	○	○	○
Carpool	○	○	○	○
Ride my personally owned bike	○	○	○	○
Walk	○	○	○	○
Take public transit (train or bus)	○	○	○	○
Use ridehailing services (e.g. taxi, Uber, Lyft)	○	○	○	○

As a result of using JUMP, how much have you changed how often you...

	Much less often	Somewhat less often	Somewhat more often	Much more often
drive a car alone	○	○	○	○
carpool	○	○	○	○
ride my personally owned bike	○	○	○	○
walk	○	○	○	○
Public transit (train or bus)	○	○	○	○
Ridehailing service (e.g. taxi, Uber, Lyft)	○	○	○	○

How do you think your use of other travel modes would be affected if JUMP service **suddenly stopped**?

	Much less often	Somewhat less often	The same amount	Somewhat more often	Much more often
I would drive...	○	○	○	○	○
I would use public transit...	○	○	○	○	○
I would ride my personally owned bike...	○	○	○	○	○

	Much less often	Somewhat less often	The same amount	Somewhat more often	Much more often
I would walk...	○	○	○	○	○
I would use Uber/Lyft...	○	○	○	○	○
I would carpool...	○	○	○	○	○

How likely is it that your travel would be affected if JUMP service **suddenly stopped?**

	Not at all likely	Somewhat likely	Very likely
I would need to change the time of my activities	○	○	○
I would need to cancel some of my trips	○	○	○
I would need to buy a car	○	○	○

Travel characteristics

In this section we will ask a few questions about how you travel in general.

How many motor vehicles does your household have? (For example, cars, trucks, or motorcycles.)

▼

What are the types and annual miles driven (please provide your best estimate) for each vehicle (up to 5) in your household?

	Type	Miles driven during the Past 12 Months
Vehicle #1	▼	
Vehicle #2	▼	
Vehicle #3	▼	
Vehicle #4	▼	
Vehicle #5	▼	

During a typical week (7 days), about how many miles do you drive? Please do not include any driving while "on the clock" for your job.

Total during weekdays		miles
Total on weekends		miles

In general, how often do you ride a bicycle (personally owned and JUMP combined)?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

During a typical week (7 days), about how much time do you spend riding a bike (JUMP and personal)?

For travel to destinations (e.g. commuting, errands)		hours		minutes per day
For exercise or fun (e.g. mountain biking, cycling round trips)		hours		minutes per day

How many **days** in the **last 7 days** did you exercise hard enough to breathe somewhat harder than normal for **more than 10 minutes**?

	days in the last 7 days

How often do you use a car-sharing service like Zipcar, GIG, etc.?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

How often do you use a ride-hailing service like Lyft, Uber, etc.?

Every day or almost every day

A few times per week

A few times per month

A few times per year

Not used in the last year

Never

During the last 7 days (up to yesterday), on how many days did you:

Drive or ride in a car?	▼
Ride on a bus or train?	▼
Walk outdoors for more than 10 minutes at a time?	▼
Bicycle for any purpose?	▼
Bicycle to or from public transit?	▼
Bicycle to or from work or school?	▼
Bicycle to get somewhere OTHER than work, school, or public transit (e.g., to go shopping, see a friend, or eat a meal)?	▼
Ride a bicycle for exercise or recreation, without having a destination for the trip?	▼

Were you out of town during the last 7 days?

No

Yes - if yes, how many days?

Travel attitudes

For the following statements about bicycling, please indicate how accurately each describes how you feel.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel safe from cars when bicycling in town	○	○	○	○	○
Many people I know think bicycling is safe	○	○	○	○	○
Many people I know think bicycling is fun	○	○	○	○	○
Bicycling is a normal mode of transportation for adults in my community	○	○	○	○	○
Riding a bike is boring	○	○	○	○	○
I need my car to do many of the things I like to do	○	○	○	○	○
I like riding a bicycle	○	○	○	○	○
I have the time to bicycle for day-to-day travel	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Many bicyclists I see appear to have little regard for their personal safety	○	○	○	○	○
Many people I know bicycle regularly	○	○	○	○	○
There are good bicycle lanes and paths in the areas I need to go	○	○	○	○	○
I try to limit my driving as much as possible	○	○	○	○	○
I need my car to carry shopping or children	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Riding a bike is pleasant	O	O	O	O	O
I get stressed by cars when bicycling in town	O	O	O	O	O
Many people I know think bicycling is healthy	O	O	O	O	O

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I try to travel by bike as much as possible	O	O	O	O	O
I feel anxious around cars when bicycling in town	O	O	O	O	O
I feel comfortable around cars when bicycling in town	O	O	O	O	O
I can bicycle to many places I need to go	O	O	O	O	O
Riding a bike is enjoyable	O	O	O	O	O
Riding a bike is fun	O	O	O	O	O
If I really wanted to, I could bicycle more frequently	O	O	O	O	O
Many bicyclists I see appear to spend a lot of money on their bicycle and accessories	O	O	O	O	O

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Many bicyclists I see look like they are too poor to own a car	O	O	O	O	O

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Many people I know think I should bicycle	○	○	○	○	○

Have you ever ridden a stand-up electric scooter (like the kind in the JUMP system)?

Yes

No

How would you rate your confidence to ride a stand-up electric scooter?

I am not very confident riding a stand-up electric scooter

I am somewhat confident riding a stand-up electric scooter

I am very confident riding a stand-up electric scooter

How would you rate your confidence to try out a stand-up electric scooter?

I would not be very confident

I would be somewhat confident

I would be very confident

In general, how comfortable would you be riding a stand-up electric scooter on a **four-lane street (two lanes in either direction)** without a bicycle lane, in daylight and good weather?

Uncomfortable and I wouldn't ride on it

Uncomfortable but I would ride on it

Comfortable

Socio-demographics

You noted changes to your household numbers, education, or income since the last survey. Please respond to these questions so we know what specifically has changed.

How many people live in your household, including you?

Number of people under 16	
Number of people 16 years and older	

What is your highest completed level of education?

No formal education

Grade school or Jr. High

High school diploma or GED

Associate or technical certificate

Bachelor's degree(s)

Graduate degree(s)

Do you live with family members or others with whom you share an income?

Yes

No

Last year, what was your approximate **personal** income before taxes?

Less than $10,000

$10,000-$25,000

$25,001 - $50,000

$50,001 - $75,000

$75,001 - $100,000

$100,001 - $125,000

$125,001 - $150,000

$150,001 - $175,000

$175,001 - $200,000

More than $200,000

Last year, what was your approximate **household** income before taxes?

Less than $10,000
$10,000-$25,000
$25,001 - $50,000
$50,001 - $75,000
$75,001 - $100,000
$100,001 - $125,000
$125,001 - $150,000
$150,001 - $175,000
$175,001 - $200,000
More than $200,000

JUMP Frequency by looking at APP

For the following questions, please log in to your JUMP account on a separate browser page (https://app.jumpbikes.com/users/sign_in). To find your recent JUMP trips go to Usage->My Trips. Note: your account page will only show you JUMP **bike** trips. We will not ask you about specific scooter trips.

Look at your JUMP account and tell us when you made your **most recent** JUMP bike trip.

Date (mm/dd/yyyy)

Look at your JUMP account and count all of your JUMP bike trips in the past **4 weeks (28 days)**. How many times did you use JUMP?

trips in the past 28 days

Why haven't you used JUMP in the past **4 weeks (28 days)**? Select all that apply.

Too costly
Inconvenient
Nearby bikes were not sufficiently charged
No need

Concern for traffic safety

Other (please describe)

No bikes available

Travel Behavior (Home location)

In the following map questions, we will ask about how you commute to work and/or school (even if you don't use JUMP for it). You can type an address or cross street to quickly identify a location and/or drag the marker manually. (Remember that all information you provide is strictly confidential and for research purposes only).

Type an address, cross street, or drag the marker to your **home** or nearest intersection to your **home**.

Work Travel

Type an address, cross street, or drag the marker to your **primary workplace** (workplace you travel to most frequently) or nearest intersection to

your **primary workplace**.

From where do you usually start your commute to your **primary workplace**?

Home

School

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you start your commute to your **primary workplace**.

During a typical week, how many days does your commute **to** your **primary workplace** include any of the following forms of transportation?

Walking for more than 10 minutes at a time?	▼
Bicycling (personal and JUMP)	▼
Taking public transit (for example, a bus or train)	▼
Driving yourself	▼
Riding as a passenger with someone else	▼

Think of your last **JUMP bike** trip as a part of your commute to or from your **primary workplace** and tell us how you used JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

JUMP was my secondary vehicle - I used it to connect to another primary travel mode

During your last **JUMP bike** trip as a part of your commute to or from your **primary workplace**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP

Personally owned bike

Personally owned e-bike

Personally owned e-scooter

JUMP scooter

Walk

Transit (Train or Bus)

Car, alone

Car, with others (e.g. carpooling)

Ridehailing service (e.g. Taxi, Uber, Lyft)

Other

Think of your last **JUMP scooter** trip as a part of your commute to or from your **primary workplace** and tell us how you used JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your last **JUMP scooter** trip as a part of your commute to or from your **primary workplace**, what other **methods of travel** did you use? Select all that apply.

- None, I only used JUMP
- Personally owned bike
- Personally owned e-bike
- Personally owned e-scooter
- JUMP bike
- Walk
- Transit (Train or Bus)
- Car, alone
- Car, with others (e.g. carpooling)
- Ridehailing service (e.g. Taxi, Uber, Lyft)
- Other

School Travel

Type an address, cross street, or drag the marker to your **school** or nearest intersection to your **school**.

From where do you start your commute to **school**?

Home

Work

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you start your commute to **school**.

During a typical week, how many days does your commute **to school** include any of the following forms of transportation?

Walking for more than 10 minutes at a time?	▼
Bicycling (personal and JUMP)	▼
Taking public transit (for example, a bus or train)	▼
Driving yourself	▼
Riding as a passenger with someone else	▼

Think of your last **JUMP bike** trip as a part of your commute to or from your **school** and tell us how you used JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your last **JUMP bike** trip as a part of your commute to or from your **school**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP

Personally owned bike

Personally owned e-bike

Personally owned e-scooter

JUMP scooter

Walk

Transit (Train or Bus)

Car, alone

Car, with others (e.g. carpooling)

Ridehailing service (e.g. Taxi, Uber, Lyft)

Other

Think of your last **JUMP scooter** trip as a part of your commute to or from your **school** and tell us how you used JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your last **JUMP scooter** trip as a part of your commute to or from your **school**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP

Personally owned bike

Personally owned e-bike

Personally owned e-scooter

JUMP bike

Walk

Transit (Train or Bus)

Car, alone

Car, with others (e.g. carpooling)

Ridehailing service (e.g. Taxi, Uber, Lyft)

Other

Other Travel Setup questions

Now we want to know about JUMP trips **not related to commuting to work/school**.

Please use your online JUMP account (https://app.jumpbikes.com/users/sign_in) to find your JUMP trip history.

We want to know about your three most recent JUMP trips with different starting or ending locations. Please exclude regular commute trips to and from work/school, but you can include trips that start or end at work/school if they have another purpose besides commuting (e.g. out to lunch from work). We'll call these your "most recent trip", "second most recent trip", and "third most recent trip" in the next section. If you haven't taken JUMP on three distinct trips not related to commuting, select how many distinct JUMP trips you have made below.

3

2

1

0

Other Travel

Provide some basic information about your **${lm://Field/2}** (that isn't a commute to/from work/school) by looking at the trip in your JUMP app.

Date	(mm/dd/yyyy)
Start hour	hour and AM or PM (do not report minutes)
Distance	miles
Travel time	minutes (do not report seconds)

Where did you **start** your **${lm://Field/2}**?

Home

Work

School

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you **started** your **${lm://Field/2}**.

Where did you **end** your **${lm://Field/2}**?

Home

Work

School

Other (please specify on the map below)

Type an address, cross street, or drag the marker to the location from where you **ended** your **${lm://Field/2}**.

Select the most appropriate reason for traveling to the destination in your **${lm://Field/2}**.

Work related (meetings)

Grocery shopping

Other shopping

Errands

Restaurant/Bar/Entertainment

Visit friends/family

To/from a transit stop

Recreation/Exercise

Other (please specify):

During your **${lm://Field/2}**, how did you use JUMP?

JUMP was my primary vehicle - I used it for the longest part of the trip or the entire trip

Jump was my secondary vehicle - I used it to connect to another primary travel mode

During your **${lm://Field/2}**, what other **methods of travel** did you use? Select all that apply.

None, I only used JUMP
Walk
Personally owned bike
Personally owned e-bike
Personally owned e-scooter
Transit (Train or Bus)
Car, alone
Car, with others (e.g. carpooling)
Ridehailing service (e.g. Taxi, Uber, Lyft)
Other

In the past **4 weeks (28 days)**, how many times did you **travel by any means** to make this trip (same start and end locations)? Mark "0" if you haven't made the trip in the past **4 weeks (28 days)**.

times in the past 28 days

Look at your JUMP app and count how many of those times you made the trip you were just telling us about **with JUMP** in the past **4 weeks (28 days)**. Mark "0" if you haven't made the trip in the past **4 weeks (28 days)**.

times in the past 28 days

If JUMP was **not** available for your **${lm://Field/2}**, what means would you use to make the trip? Select your **one primary method** (the one you would use for the longest portion of the trip or the entire trip).

None, I wouldn't make the trip
Personally owned bike
Personally owned e-bike
Personally owned e-scooter
Walk
Transit (Train or Bus)
Car, alone
Car, with others (e.g. carpooling)
Ridehailing service (e.g. Taxi, Uber, Lyft)
Other

Would you use any **secondary methods** when making that trip without JUMP? Select all that apply.

- No, I would only travel by the primary method above
- Personally owned bike
- Personally owned e-bike or e-scooter
- Walk or Skateboard
- Transit (Train or Bus)
- Car, alone
- Car, with others (e.g. carpooling)
- Ridehailing service (e.g. Taxi, Uber, Lyft)
- Other

Collisions setup

Last thing...

How many walk, bike, e-bike or e-scooter collisions have you had in the last **3 years?**

Collisions

You have indicated you have been in **${q://QID366/ChoiceTextEntryValue}** collisions in the past 3 years.

You have indicated you have been in more than 3 collisions in the past 3 years. Please only tell us about the 3 most recent collisions.

Starting from your **${lm://Field/2}** collision, How were you traveling immediately before your collision?

- Walking
- Personally owned bike
- Personally owned e-scooter
- JUMP bike

Personally owned e-bike

JUMP e-scooter

What was your **${lm://Field/2}** collision with?

Car, Moving

Car, Parked

Truck

Bus

Bicycle

E-scooter

Pedestrian

Animal

Debris or other temporary obstacles

Other (please specify)

Where were you during your **${lm://Field/2}** collision?

Street (no bike lane)

Bike lane

Protected bike lane

Off-street bike/pedestrian path

Sidewalk

Other (please specify)

Were you injured during your **${lm://Field/2}** collision?

No

Yes, but didn't receive treatment

Yes, received treatment but was not hospitalized

Yes, was hospitalized

Were you wearing a helmet during your **${lm://Field/2}** collision?

Yes

No

What were the light conditions for **${lm://Field/2}** collision?

Darkness

Twilight

Light

Was your **${lm://Field/2}** collision reported to the police?

Yes

No

Contact and End

If you wish to be included in the drawing or you are willing to be contacted further, please indicate the purposes which we may contact you and provide an email below. We will only use your email for the purposes you authorize.

Can we contact you ...

	Yes	No
to provide your $5 gift card and if you win the $100 gift card prize?	○	○
if we have any questions about this survey?	○	○
for future JUMP related surveys by UC Davis?	○	○
for a UC Davis survey on housing priorities and accessory dwelling units?	○	○
for a UC Davis survey on ridehailing and transit?	○	○

Please confirm your email.

${e://Field/RecipientEmail}