

Will Ride-Hailing Enhance Mobility for Older Adults? A California Survey

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REPORT 20-30

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EXECUTIVE SUMMARY

Ride-hailing services such as Lyft and Uber offer a potential mobility option for the growing numbers of aging Californians who risk social and economic isolation if they cannot drive for health or financial reasons. They could also serve older adults who already have mobility options but would prefer a ride-hailing alternative for at least some trips. However, popular wisdom holds—and some early research findings suggest—that ride-hailing will not prove attractive to many older adults.¹

This study explores in detail the potential of ride-hailing to meet the travel needs of California adults currently 65 and older, as well as the potential of this mode to meet the travel needs of *future* older adults. More specifically, we explored four questions:

1. To what extent do older adults use ride-hailing?
2. What barriers do older adults perceive to using ride-hailing?
3. Would new service features make ride-hailing more attractive to older adults?
4. What personal characteristics (socio-demographic factors, attitudes towards technology, and community type) are correlated with ride-hailing?

STUDY METHODS

An online survey was completed by 2,917 California adults aged 55 and older. This age range was chosen to include current adults 65 years of age and older, plus individuals who will move into this age group in the coming decade.

We selected an online survey methodology for several reasons. First, the comparatively low cost of online surveys permitted us to obtain a large enough respondent pool to test for significant differences associated with sociodemographic characteristics, attitudes, and other variables. Second, an online survey was deemed reasonable given that ride-hailing is much more feasible for people with internet access. Third, and very importantly, a large majority of adults 55 and older are online.² The study findings can be considered representative of older Californians who have internet access (estimated at 86%).³

Respondents for this study were recruited by Qualtrics using the company's online panel sampling method and quota sampling. This methodology ensured a sample that was representative of the California population of adults 55 years and older in terms of basic socio-demographic characteristics (age, gender, race, ethnicity, employment status, and annual household income).

The survey questionnaire explored if and how respondents 55 and older use ride-hailing, their comfort with current ride-hailing service features, the reasons they might want to use ride-hailing, and the value they would place on potential new ride-hailing service features designed to improve accessibility, safety, and ease of payment. In addition, we gathered data that allowed us to assess how respondents' ride-hailing experiences and views differed

according to factors that the literature led us to suspect might affect ride-hailing. These factors included age, gender, residential location, and comfort with technology.

SUMMARY OF FINDINGS

Key findings from the study are as follows.⁴ As a reminder, the survey results can be generalized to the 86% of Californians over 55 who have access to the internet. Generalizing the results in this way is possible because all findings presented in this report rely on weighted data.

Older online adults are currently ride-hailing—and will likely do so in greater numbers in coming years.

Close to half of survey respondents had experienced ride-hailing (46%) and almost a third had booked a ride themselves (30%). Even among the oldest age group, those 75 and older, 42% had experienced ride-hailing, 25% had booked a ride, and 37% had a ride-hailing app.

The youngest respondents (55 to 64 years old) had modestly more ride-hailing experience than the two older groups of respondents. For example, among these soon-to-be seniors, 48% had experienced ride-hailing, 34% had booked a ride themselves, and 51% had a ride-hailing app.

A diverse group of older online adults ride-hail, although certain subgroups are notably more likely to ride-hail.

The study found that a widely diverse group of online older adults had tried ride-hailing. Although ride-hailing is most common among older adults who have higher-incomes, are more educated, are comfortable with online financial technology, ride public transit, and live in urban or suburban communities, respondents who did not share those characteristics also ride-hail. For example, 20% of respondents living in small towns had booked a ride themselves, compared to 36% of respondents living in urban communities. A travel option shown to be used by one-fifth of a population deserves consideration, even if the majority of the population studied have not used that option.

The majority of older online adults are comfortable with current ride-hailing service features.

The survey found that 63% of respondents were somewhat or very comfortable riding with a driver they did not know, 51% were somewhat or very comfortable with riding after dark, and 51% were somewhat or very comfortable with sharing credit-card information with the ride-hail company. Somewhat fewer respondents were somewhat or very comfortable taking a shared ride-hailing trip with a stranger, though close to half (45%) were comfortable with this feature.

There were only a few major differences by age group with respect to comfort with current service characteristics. For example, the youngest respondents (55 to 64 years old) were 12 percentage points more likely to be comfortable riding with an unknown driver than were the oldest respondents (75 and older).

Older online adults would value new service features like getting more help with booking and taking ride-hailing trips, accessible vehicles, and new payment options.

With respect to the process of booking and taking ride-hailing trips, 70% of respondents would value having a company helpline to call if that option were made available, and 63% would value the option to book the trip over the phone with a live agent.

The accessibility service features tested were also popular with respondents, especially the option of trained drivers. Specifically, 60% of respondents said that they would value having a driver trained to help older passengers. Fewer respondents (43%) indicated that they would value the option of having an accessible vehicle.

With respect to payment options, the idea of a ride-hailing card unlinked to a bank account or credit card was quite popular, with 61% of respondents indicating support. Far fewer respondents (35%) said that they value the concept of receiving a paper bill from the driver, which the passenger could pay at a local store in cash. The youngest group was more likely to value these alternative payment options. The difference was biggest for the option of paying with a pre-loaded ride-hailing card: 68% of those 55 to 64 years old said they would value this feature, as compared to 49% of respondents 75 and older.

Older online adults particularly value ride-hailing as a way to avoid asking for rides and driving at night.

Approximately two-thirds of respondents valued not having to ask for rides (65%) or drive at night (66%), and almost as many respondents valued ride-hailing as way to avoid the worry of getting lost (61%). Somewhat fewer respondents, but still a majority, valued help with bags (56%). The youngest respondents were more likely to value these benefits than the older respondents.

IMPLICATIONS FOR POLICYMAKERS AND RIDE-HAIL PROVIDERS

The study findings have implications for policymakers as well as ride-hailing providers working to expand travel options for older adults. To the extent that public agencies or nonprofits want to support ride-hailing for older adults, the following recommendations may be helpful. Similarly, the findings suggest ways that ride-hailing providers could make their services more desirable to seniors.

1. **Ride-hailing can help many older adults maintain active and socially connected lives.** Ride-hailing is promising as a travel option for older adults even though fewer than half of respondents (46%) had experience with ride-hailing. Although older adults ride-hail at much lower rates than young adults, many seniors and soon-to-be-seniors are ride-hailing, at least occasionally. Generalizing the survey results to the California population, roughly 4.1 million Californians 55 and older have experienced ride-hailing at least once, and 2.6 million have booked ride themselves either online or by phone.⁵ It is also important to note that one key reason older adults make fewer ride-hailing trips than younger adults is that older adults make fewer trips overall.

Further, the survey shows that people of all sociodemographic characteristics and from every part of the state have used ride-hailing, although ride-hailing is more common among higher income, educated, and urban older adults.

2. **Ride-hailing may be particularly helpful to older adults who travel at night.** The literature shows that older adults begin to limit their driving before they cease driving entirely, and one common adaptation is to stop driving at night. The findings from this study suggest that ride-hailing is an option that might help many seniors travel after dark. The majority of respondents reported both that they would “value” ride-hailing as a travel option at night and that they were at least somewhat comfortable using ride-hailing after dark.
3. **More older adults may use ride-hailing if providers offer more personalized help, trained drivers, accessible vehicles, and new payment options.** Of the potential new service features explored in this study, several were popular with approximately two-thirds of all respondents: being able to call a live operator for help, the option to book trips with a live agent, drivers trained to help seniors, and the option to pay with a ride-hailing card unlinked to a bank account or credit card. An accessible vehicle was valued by 43%, and 35% valued the option of receiving a paper bill from the driver to pay in cash at a local store.
4. **Currently, the older adults most likely to ride-hail are college-educated, ride transit, live in households with incomes over \$100,000 a year, and live in urban settings.** While older adults having these characteristics were noticeably more likely to be current ride-hailers, it is important to stress that they were not the only ones who use ride-hailing. For example, while 61% of people in the highest income group had a ride-hailing account compared to 42% in the lowest income group, a travel mode used by 42% of lower-income older adults is still important.

I. INTRODUCTION

Ride-hailing services such as Lyft and Uber offer a potential mobility option for the growing numbers of aging Californians who risk social and economic isolation if they cannot drive for health or financial reasons. Ride-hailing could also serve older adults who already have mobility options but would prefer a ride-hailing alternative for at least some trips. However, popular wisdom holds—and some early research findings suggest—that ride-hailing will not prove attractive to many older adults.⁶

This study explores in detail whether and how older adults in California use ride-hailing, as well as the potential of this mode to meet the travel needs of both current and future adults 65 and older. More specifically, we explored four questions:

1. To what extent do older adults use ride-hailing?
2. What barriers do older adults perceive to using ride-hailing?
3. Would new service features make ride-hailing more attractive to older adults?
4. What personal characteristics (socio-demographic factors, attitudes towards technology, and community type) are correlated with ride-hailing?

OVERVIEW OF STUDY METHODS

The study explored these four questions using an online survey completed by 2,917 California adults aged 55 and older. We chose this age range in order to survey both current older adults (65 years of age and older) and individuals who will move into this age group in the coming decade.

We selected an online survey methodology for several reasons. First, the comparatively low cost of online surveys permitted us to obtain a large enough respondent pool to test for significant differences associated with sociodemographic characteristics, attitudes, and other variables. Second, an online survey was deemed reasonable given that ride-hailing is much more feasible for people with internet access. Third, and very importantly, a large majority of adults 55 and older are online.⁷ The study findings can be considered representative of the 85% or so of older Californians who have internet access.

Respondents for this study were recruited by Qualtrics using the company's online panel sampling method and quota sampling. This methodology ensured a sample that was representative of the California population of adults 55 years and older in terms of basic socio-demographic characteristics (age, gender, race, ethnicity, employment status, and annual household income).

The survey questionnaire explored whether and how respondents 55 and older use ride-hailing, their comfort with current ride-hailing service features, the reasons they might want to use ride-hailing, and the value they would place on potential new ride-hailing service features designed to improve accessibility, safety, and ease of payment. In addition, we

gathered data that allowed us to assess how respondents' ride-hailing experiences and views differed according to factors that the literature led us to suspect might affect ride-hailing. These factors included age, gender, residential location, and comfort with technology.

STUDY MOTIVATION: UNMET TRAVEL NEEDS OF OLDER ADULTS

We designed the study to explore a hypothesis that ride-hailing could help to meet the need for better transportation options for today's older adults, as well as those who will soon move into that age bracket. Transportation for older adults is a significant policy concern due to three intertwined factors: the growing numbers of older adults, the fact that many of them live in communities with few viable travel options other than driving, and evidence that the inability to travel within one's community can lead to social isolation, poor health, and depression.⁸ Further, ride-hailing may benefit many older adults who have some ability to access to other modes but nevertheless might find ride-hailing preferable for some trips. For example, some older adults have the physical ability to ride public transit but nevertheless feel uncomfortable and/or unsafe on transit.

The coming decades will see large growth in the number of adults aged 65 and older, both in numbers and as a proportion of the population. The US Census projects that this older age group will increase from 56 million in 2020 to 81 million by 2040.⁹ During that same period, adults aged 65 and older will grow from 17% to 22% of the total population. Looking just at California, the population of adults 65 and older is projected to increase from 6.4 million in 2020 to a little over 11 million in 2040.¹⁰

Many members of this growing cohort will remain active in their communities—assuming they can access services and amenities. Many older adults hold jobs, take care of family members, volunteer, and socialize, in addition to making trips for essential needs such as shopping, healthcare, and banking.¹¹ However, remaining active requires the ability to access community resources. Many older adults have limited mobility for a variety of reasons, whether due to health impairments that make driving difficult or impossible, poverty, and/or lack of access to high-quality public transit or safe walking and bicycling facilities.

When driving is not possible, older adults must look for other mobility options, such as getting rides from family or friends, walking, bicycling, or using public transit, paratransit, or taxis.¹² For many older adults, these options may meet few or none of their mobility needs.¹³ Some older people do not have friends or family to ask for rides, while others fear overburdening their social networks with requests for rides. Also, some older adults are physically unable to walk or bicycle for any distance, and many of those who do have the ability to walk and bicycle face the problem that few destinations are close enough to access by these mobility modes. As for public transit services, these provide some older adults with needed mobility, but a variety of factors limit use of public transit for many others. These barriers range from infrequent or even nonexistent service, to cognitive and physical limitations that make transit too difficult to use.¹⁴ While paratransit services are sometimes available to older adults who are unable to access fixed-route transit due to cognitive or physical impairments, many paratransit services are only available to adults with *documented* disabilities, the services are not available in all communities, and the services may be relatively inconvenient (e.g., requiring reservations made days in advance or inconvenient pick-up times). As for traditional

taxi services, these are often too expensive to be a regular and feasible option, and many communities have sparse or nonexistent taxi service anyway. Finally, there are older adults who have the capacity to travel with existing modes but nevertheless find ride-hailing more convenient or otherwise preferable.

Some ride-hailing advocates have claimed that the mode shows promise as a mobility option for older adults because these services overcome many of the limitations to other transportation modes. For example, ride-hailing does not require having the resources and physical ability to drive oneself for all trips. Even some older adults who drive limit themselves to less challenging driving conditions. For example, they may avoid driving at night, in unfamiliar areas, or in heavy traffic. Ride-hailing also may be desirable in cases where parking is far from one's destination or very expensive. Unlike public transit, ride-hailing provides the comfort of a private vehicle and door-to-door access. In addition, unlike paratransit, ride-hailing is usually available in a much wider geographic area with little wait time. Further, in many instances, ride-hailing has been less expensive than taxi services, with the costs savings especially true for shared rides. Finally, ride-hailing offers some convenience and safety features missing from most traditional taxis: riders do not have to carry cash, can approve the price before the trip begins (no risk of a driver adding extra mileage to raise the price), and can share their real-time location in the vehicle with friends and family.

Despite the promising side of ride-hailing, there are also many claims that ride-hailing is an unrealistic option for many older adults. One identified concern is whether the ride-hailing companies effectively screen drivers, an important procedure that provides safety-related assurance to older adults. Also, even when rides are less expensive than taxi trips, cost is another possible barrier for the many older adults who live on modest incomes. Other questions to answer include the following: Are older adults comfortable with the technologies used for booking and managing trips? Are they able and willing to use a transportation service that requires online payment? Do older adults fear riding with an unknown driver and/or passengers?

Few studies to date assess which of the potential barriers and benefits to ride-hailing currently influence older adults' decisions if and when to ride-hail. However, a small number of recent studies offer clues, such as trust issues with online payment or an inability to use smartphone applications.¹⁵ The current study builds on prior survey research by combining the attributes of a mix of both attitudinal and behavioral questions, exploration of some new attitudinal factors in the older adults population not explored before, and a large sample that permits analyses not only about adults already 65 or older, but also about individuals aged 55 to 64, or soon-to-be seniors.

The literature to date has pinpointed both cost and safety concerns as barriers to ride-hailing for older adults. For example, through focus groups with Canadians 65 and older, Shirgaokar found that some older adults would consider ride-hailing for trips at night, during inclement weather, or if they were physically unable to drive.¹⁶ Results from the same study indicated that older Canadians hesitated to use ride-hailing for reasons such as lack of familiarity with ride-hailing, not owning a smart phone, and concerns over safety, regulation of drivers, transparency of fare metering, visual identification of the vehicle, paying for the

service in advance, and possible financial fraud. Other researchers have also found that cost and safety concerns were disincentives for seniors considering ride-hailing.¹⁷

Survey studies have also explored what proportion of older adults ride-hail. Both a 2014 and 2016 online survey of adults in major metropolitan regions found that only 4% of seniors had used ride-hailing.¹⁸ Another survey of a small sample of seniors in southeastern Michigan, found that only 3% of respondents had used ride-hailing.¹⁹ The 2017 National Household Travel Survey found that 2.3% of U.S. adults 65 and older used ride-hailing at least occasionally.²⁰ Even in the few years since the publication of these studies, it is likely that more older adults are ride-hailing because supply and popularity of ride-hailing services have changed rapidly.

A few of the studies on use of ride-hailing by older adults compared the characteristics of older adults who use versus those who do not use ride-hailing. Mitra, Bae, and Ritchie looked at data from the 2017 National Household Travel Survey to identify socio-demographic factors correlated with seniors' use of ride-hailing. They found that more frequent riders were more educated, affluent, more likely to be male, younger, and living in an urban area.²¹ (This study did not consider attitudes related to ride-hailing.) The survey of older adults in southeastern Michigan found that prior knowledge of ride-hailing was correlated with whether respondents anticipated using ride-hailing in the future.²²

OVERVIEW OF THE REPORT

The remaining chapters are organized as follows. Chapter 2 describes the survey methodology, including the sampling method, questionnaire design, implementation procedures, and analytic approach. Chapters 3 and 4 look at findings across the full set of respondents, while Chapter 5 explores differences among population subgroups defined by factors such as age, travel behavior, and use of technology. Chapter 6 summarizes the key findings and suggests policy implications and future research needs. Appendix A presents the full survey questionnaire and basic frequencies.

II. SURVEY DESIGN AND ADMINISTRATION

The online survey was completed by 2,917 California adults aged 55 and older. Respondents were recruited through Qualtrics using the company's online panel sampling method. This chapter describes the questionnaire design, survey sampling and administration, and characteristics of the respondents.

QUESTIONNAIRE DESIGN

We designed the survey instrument to identify whether and how respondents used ride-hailing, how comfortable they were with current ride-hailing service features, what value they would place on new ride-hailing service features designed to improve safety, accessibility, and payment options, and what reasons they saw to use ride-hailing.

In addition, we collected data on numerous factors that we hypothesized might correlate with ride-hailing use and behaviors. Those factors were:

- **Age:** We included adults 55 years old and older, an age range that encompass both current and soon-to-be older adults.²³
- **Gender:** Previous research has indicated that, in general, men and women have different travel patterns, including making different types of trips and using different modes.²⁴ The earlier ride-hailing literature also has found differences in travel patterns by gender.²⁵
- **Location:** We explored how responses differ according to the community type in which respondents lived (urban, suburban, small town, or rural), because a large body of literature documents that travel behavior varies by built environment factors including land-use density and mix.²⁶
- **Attitudes:** We explored attitudes related to service features inherent in current ride-hailing, including trust in online financial tools and comfort riding with a stranger.²⁷

The survey questionnaire, along with the basic results, can be found in Appendix A.

SURVEY SAMPLE AND ADMINISTRATION

Respondents completed the survey online. Online surveys are increasingly popular among researchers due to their low cost, the speed at which they can be administered, convenience for respondents, and the ability to include question design options that are difficult or impossible to implement via telephone or mail.²⁸

The proportion of older adults who are online has grown rapidly over the past decade both nationally and within California. Nationally, a 2019 Pew study found that 90% of U.S. adults are now online, including 85% of baby boomers (ages 55 to 73) and 62% of members of the silent generation (ages 74 to 91).²⁹ The Pew study also found that although baby boomers had not adopted new technologies as quickly as the younger generations, adoption

rates had grown fast since. For example, 68% of baby boomers owned a smartphone in 2019, compared to 25% in 2011. The Pew researchers found that comparatively less well-represented groups included not only adults 65 and older but also low-income adults, adults with less formal education, and those living in rural communities.³⁰

Turning to California, the American Community Survey (ACS) 5-year estimates from 2014 to 2018 found that 73% of Californians 55 and over had smartphone access. However, smartphone access declined by age group, ranging from 83% for those aged 55 to 64, to 43% for those 85 and older.³¹ Slightly higher percentages in each age group had access to the internet through either a cell phone or internet-service provider than had smartphone access. The ACS findings are slightly lower than results from a more recent 2019 survey by the Berkeley IGS Poll, which found that 76% of California adults age 65 and older are online.³²

Table 1. Percent of California Older Adults with Internet Access, per American Community Survey (2014-2018) 5-Year Estimates

Age group (years)	Smartphone access (%)	Any internet access (%)
55 – 64	83	91
65 – 74	74	88
75 – 84	57	79
85+	43	65
All (55+)	73	86

Source: U.S. Census Bureau, “American Community Survey (2014–2018) 5-Year California Housing and Person PUMS Data.”

The researchers engaged Qualtrics to collect the survey data.³³ Qualtrics is a so-called “panel aggregator” that recruits most survey respondents through partner organizations that maintain market research panels. In some cases, Qualtrics also recruits respondents through targeted email lists, social media, and member referrals. Qualtrics uses third parties to verify the identity of panel members (e.g., name, address, and age) and works with sample partners to ensure they meet Qualtrics’ quality control standards. Respondents are invited to participate in various ways, including email invitations, in-app notifications, and upon signing into a panel portal. The invitation to participate describes the length of the survey and incentive amount offered, but not the specific subject matter. The nature and amount of the incentive varies, but can be cash, gift cards, or points for a customer loyalty program such as an airline frequent flyer program. Finally, Qualtrics scrubs the final dataset to remove respondents who exhibit suspicious behaviors such as finishing the survey in less than half the median survey completion time or providing gibberish answers to open-ended questions.

Sampling Approach

We used quota sampling to ensure a sample that closely represents the California population of adults 55 years of age and older in terms of basic socio-demographic characteristics. Qualtrics agreed to recruit a sample that represented California adults aged 55 and older in terms of gender, race, ethnicity, employment status, annual household income, and age, as reported in U.S. American Community Survey (ACS) data. Table 1 provides the ACS values used to build the quotas.

Table 2. Quotas Used for Sampling

Characteristic	% of California population 55+ years ^a
Gender	
Male	46
Female	54
Of Hispanic/Latino origin/descent	22
Race	
White only	69
Black/African-American only	6
Asian/Asian-American only	15
Other, including multiracial	10
Employment status	
Working for pay	38
Unemployed, but looking for work	2
Not working by choice (retired, etc.)	60
Income (annual household)	
\$0–\$24,999	17
\$25,000–\$49,999	20
\$50,000–\$74,999	16
\$75,000–\$99,999	12
\$100,000–\$149,999	15
\$150,000–\$199,999	8
\$200,000+	12
Age (years)	
55–64	47
65–74	30
75+	23

^a All data are for adults 55 years and older, except for household income, which is for all U.S. households.

Source: Statistics are American Community Survey (ACS) 2017 5-year estimates for Californians aged 55 and older.

We administered the survey in 2019, from June 19 through September 9. Respondents took a mean time of 11 minutes to complete the survey, with a median time of 8 minutes. A total of 2,917 adults responded with usable data. Qualtrics does not recommend calculating response or frequency rates because their sampling method does not track how many people received the survey invitation.

SURVEY RESPONDENTS

The 2,917 survey respondents who provided usable data are representative of the California population in terms of most sociodemographic characteristics reviewed. As Table 3 shows, the difference between the survey respondents and the state's population of adults 55 and older is no more than ten percentage points for many characteristics, and often much smaller. However, the difference is very large for educational attainment, a factor not included in the quota screens. Fifty-three percent of respondents had at least a four-year college degree, compared to 27% of Californians in the same age group. In addition, only 13% of respondents had completed no more than a high school degree, as compared to 52% of Californians.

For the survey findings and analyses presented in this report, we weighted the data to match the Census Bureau's 2017 American Community Survey (ACS) five-year estimates with respect to age, Hispanic ethnicity, race, household income, education level, employment status, and Caltrans District (based on respondents' reported ZIP Code).³⁴ The weights were constructed using straightforward proportions to match the sampling of our survey and the actual population estimates from ACS. For example, the female to male proportion for 55+ adults in California is 0.54 to 0.46, while our sample proportion for the same was 0.56 to 0.44. To correct for gender, we generated a weight of $0.54/0.56 = 0.96$ for females and $0.46/0.44=1.05$ for males. Each survey taker's response on these multiple factors was assigned the associated weight, and a final weight was calculated for each respondent by multiplying the individual applicable weights. Note that the final gender weight mean was 1.09 with a standard deviation of 1.60 and a range of 0.02 to 1.79.

Table 3. Comparison of Survey Respondents to California Adults 55+ Years Old

Subgroup	Sample (unweighted) (%)	California adults 55 and older ^a (%)
Caltrans district ^b		
District 1: North Coast	1	1
District 2: Redding and NorCal	1	1
District 3: Sacramento (and north of Sac.)	8	8
District 4: Bay Area	21	21
District 5: Central Coast (San Luis Obispo)	3	4
District 6: Fresno/Central Valley (South)	5	6
District 7: Los Angeles	25	27
District 8: San Bernardino	9	11
District 9: Bishop	1	<1
District 10: Stockton (north Central Valley)	5	4
District 11: San Diego	10	9
District 12: Orange County	9	8
Gender		
Male	44	46
Female	55	54
Other	<1	n/a
Of Hispanic/Latino origin/descent	16	22
Race		
White only	59	69
Black/African-American only	8	6
Asian/Asian-American only	16	15
Other, including multiracial	17	10
Highest education completed		
Grade school, high-school, or GED ^b	13	52
Some college	34	20
College grad or more	53	27
Employment status		
Working for pay	35	37
Unemployed, but looking for work	4	2
Not working by choice (retired, etc.)	61	60
Income (annual household)		
\$0–\$49,999	30	36
\$50,000–\$99,999	30	27
\$100,000–\$199,999	27	22
\$200,000+	13	12
Age (years)		
55–64	45	47
65–74	38	30
75+	17	23

^a All data are for adults 55 years and older, with the exception of household income, which are for all U.S. households. Statistics are American Community Survey (ACS) 2017 5-year estimates for California adults 55 and older.

^b General Educational Diploma.

Note: Some percentages do not sum to 100% due to rounding.

III. ABOUT THE RESPONDENTS: TRAVEL BEHAVIOR AND ONLINE TECHNOLOGY USE

This chapter presents findings from the survey questions that asked about respondents' travel behavior and opportunities, as well as their use of online technologies. Results from the full set of respondents are discussed here, with an evaluation of how results differed among population subgroups presented in Chapter 5.

TRAVEL CHARACTERISTICS

The survey asked a number of questions to explore which motorized travel modes respondents used in the past month, whether they got rides from friends or paid services, and whether they had disabilities that limited their travel options. As Figure 1 shows, only 16% of respondents indicated that they did not drive at all in the past 30 days. Three-quarters (76%) of respondents had driven in the past seven days, and another 7% had driven within the past 30 days. In addition, two-thirds of respondents indicated that they had taken a ride as a passenger in a personal vehicle. Public transit and ride-hailing services had both been used by almost 30% of respondents within the last 30 days. Taxis (9%) and paratransit (4%) were the least commonly used travel modes.

Figure 2 provides information on the type of driver from whom the respondents had gotten rides in the prior month. About two-thirds of respondents (65%) reported that they had gotten a ride from family members, and slightly more than one-third (38%) had obtained a ride from friends or neighbors. Only 6% of respondents had been given rides by paid caregivers or volunteer drivers.

Although the survey did not aim to determine overall levels of tripmaking, the questionnaire did ask about the frequency with which people commuted to paid or volunteer work. Fifty-nine percent of respondents commuted at least one day a week for either paid or volunteer work. Among commuters, 30% commuted at least two days a week for paid work and 17% commuted at least two days a week for volunteering.

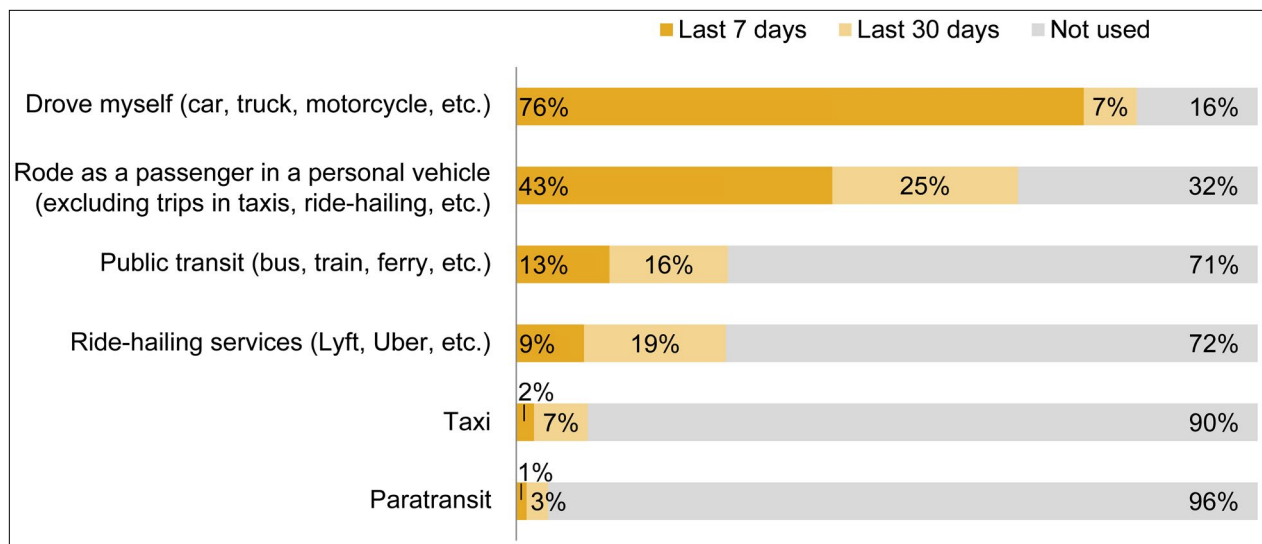


Figure 1. Most Recent Use of Travel Modes in the Past 30 Days

Note: Rows do not all sum to 100% because numbers have been rounded.

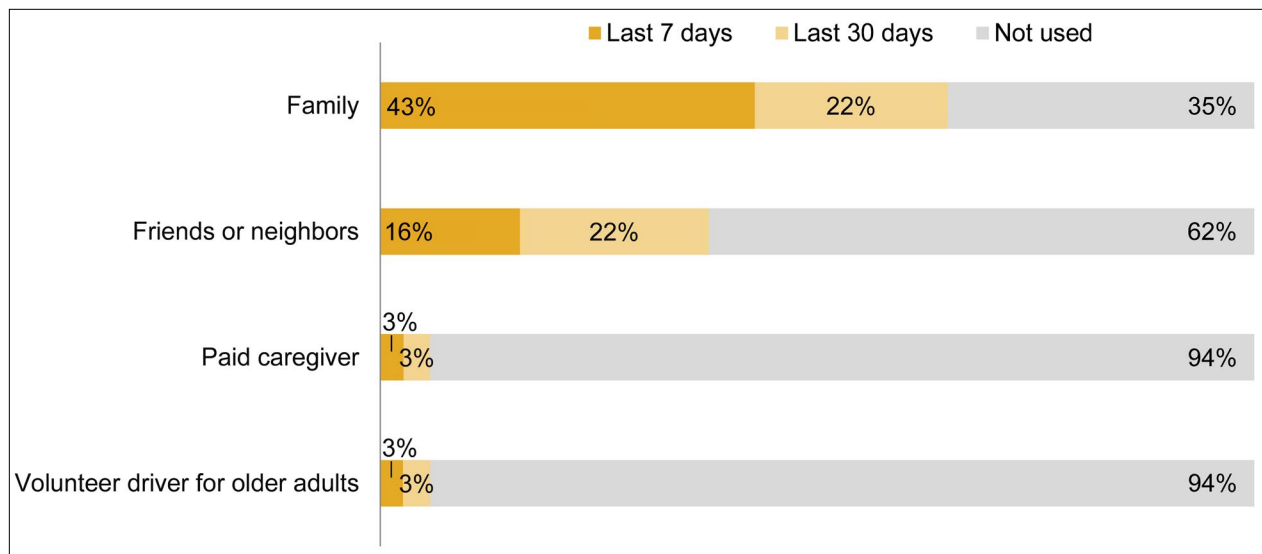


Figure 2. Type of Driver from Whom Respondents Got Rides in the Past 30 Days

TECHNOLOGY USE

Since ride-hailing services are most easily accessed through online apps, respondents were asked questions designed to assess whether they could easily and conveniently access the internet. Specifically, respondents were asked what type of devices they used to access the internet, whether they had people to help them as needed when online, and their comfort with different online activities (e.g., looking for bus schedules or checking a bank statement).

Overall, 97% of respondents said they had regular internet access through a smartphone, computer, and/or tablet. This high percentage was expected since the survey was administered online. Figure 3 shows the device type by which respondents commonly access the internet. The darker bars indicate devices with internet access, and the pale bars indicate phones without internet connections. The great majority (84%) of respondents indicated that they had online access through a smartphone, the device easiest to use for booking a ride-hailing trip and for managing the trip process (e.g., contacting the driver to confirm the exact pick-up location). The second most common device used to access the internet was a computer with internet access (69%). Almost one-half of respondents (49%) indicated that they used a tablet with internet access.

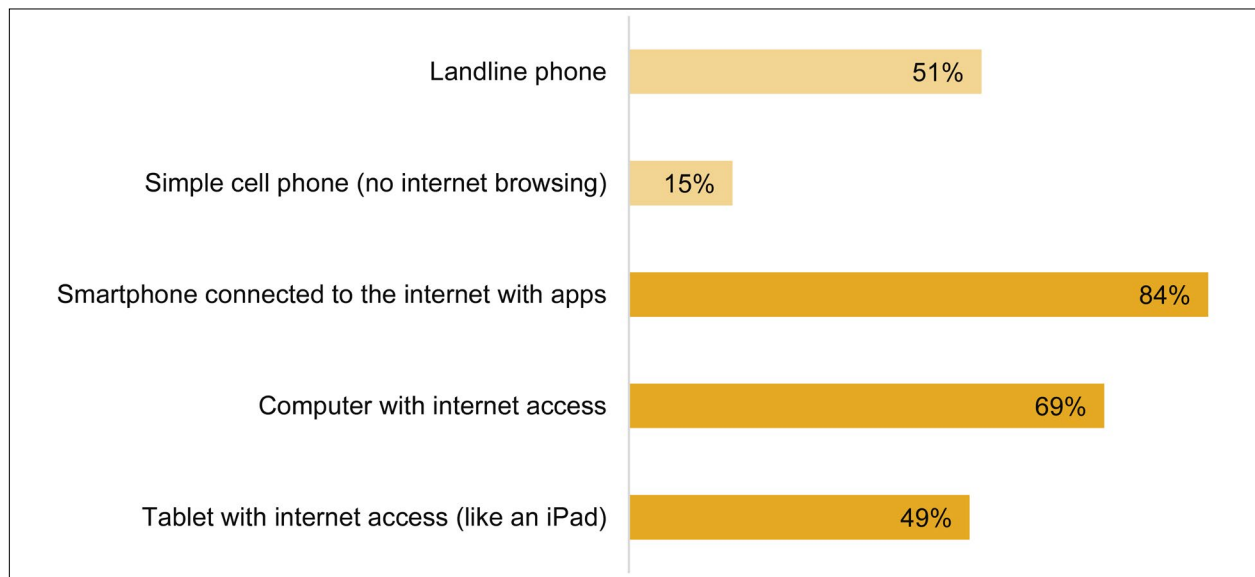


Figure 3. Percent of Respondents with Internet Access and Phone Service, by Device Type

With respect to comfort with different online activities, just over one-quarter (28%) of respondents reported that they had trouble using smartphones or the internet and could not always get help when needed (Figure 4). The remaining three-quarters either needed no help or could get help as needed.

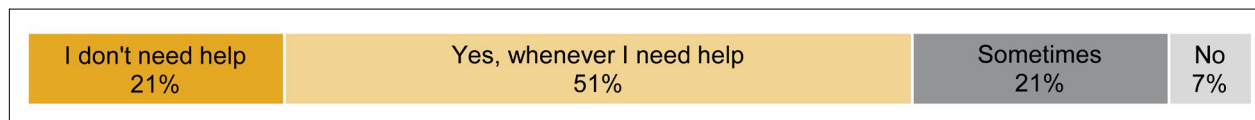


Figure 4. Percent of Respondents Who Can Get Help Using a Smartphone

To explore whether respondents were likely to be comfortable with the technology and financial aspects of ride-hailing, regardless of whether they currently used the service, respondents were asked about their comfort completing online tasks and using financial tools. As shown in Figure 5, the great majority of respondents were somewhat or very comfortable with the processes that relate to using ride-hailing apps: sending text messages (93%), searching for information online (93%), and using apps on smartphones or tablets (86%). Somewhat

fewer respondents were comfortable making video calls, though even here two-thirds (69%) said they were somewhat or very comfortable doing so.

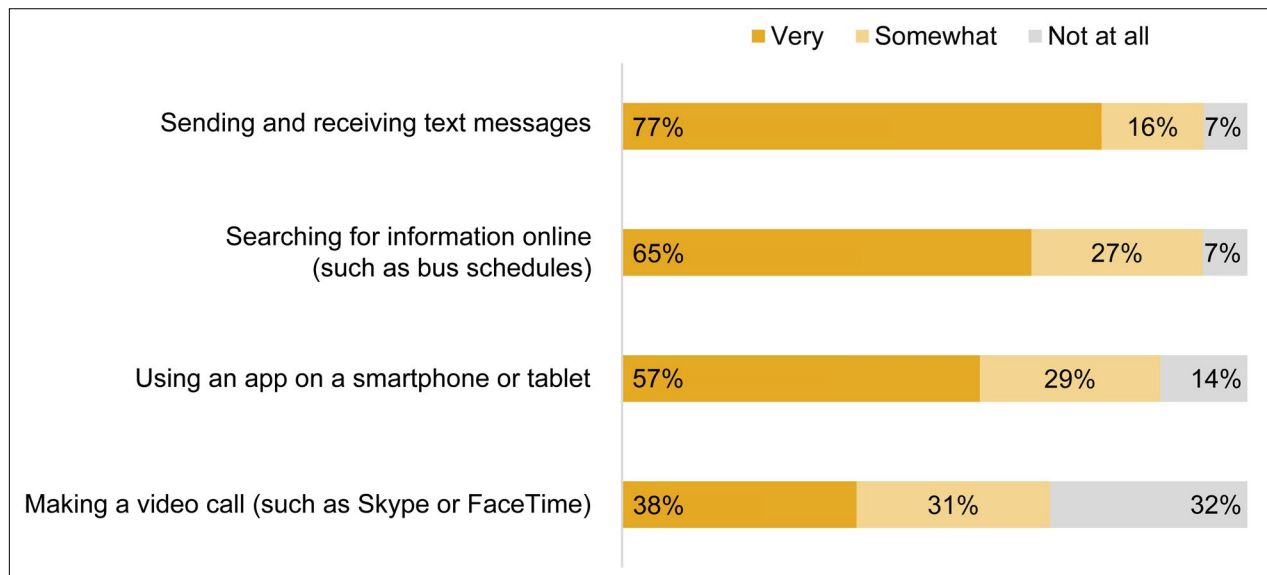


Figure 5. Level of Comfort in Completing Online Tasks

With respect to level of comfort with online financial tools, the great majority of respondents were also comfortable using these tools. Specifically, 88% were very or somewhat comfortable making an online purchase with a credit card, an action comparable to paying for ride-hailing online with a credit card. This was only six percentage points fewer than the overall comfort level using a credit card in person at a store. In addition, 86% of respondents were very or somewhat comfortable checking a bank balance online, and 84% of respondents were very or somewhat comfortable paying bills online.

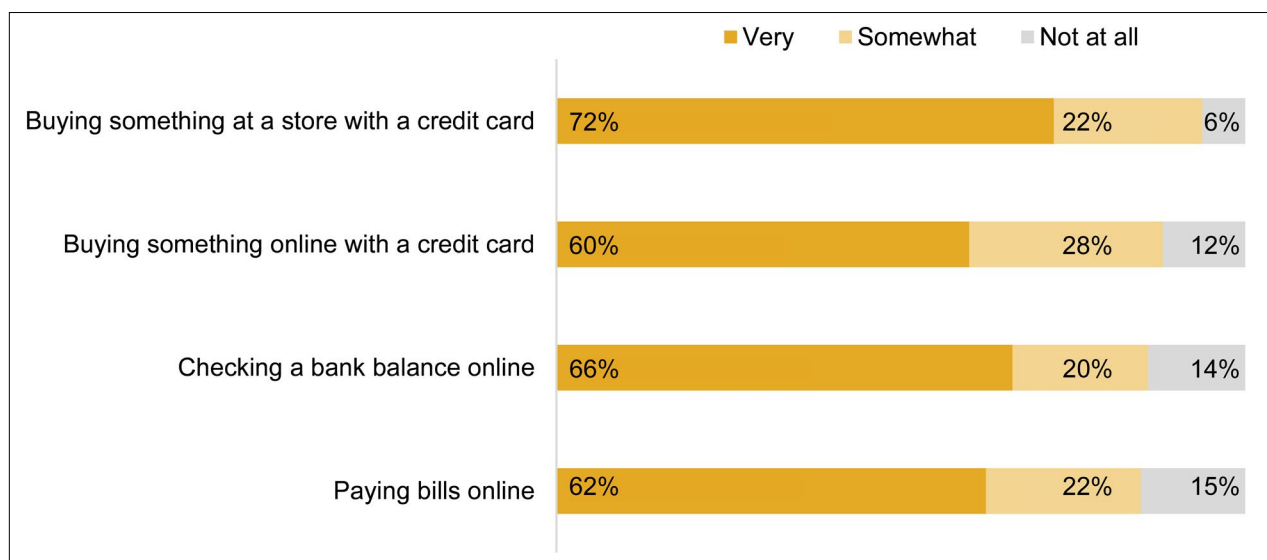


Figure 6. Level of Comfort with Online Financial Tools

IV. FINDINGS RELATED TO RIDE-HAILING EXPERIENCE AND ATTITUDES

This chapter presents the survey findings directly related to ride-hailing: whether and how respondents had used ride-hailing, and their opinions and preferences related to ride-hailing. Results from the full set of respondents are discussed here, while Chapter 5 evaluates how results differed among subgroups of the respondents by characteristics such as age, use of different travel modes, and use of online financial tools.

EXPERIENCE USING RIDE-HAILING

With respect to respondents' experience in use of ride-hailing services (Figure 7), 81% had both heard of ride-hailing and thought it was available in their community. Just under half (47%) said that they had experienced ride-hailing at least once, in some form. Breaking down the specific ways they had experienced it, 31% had ridden along with someone else who booked the trip, 29% had booked the trip themselves using an app, and 24% had taken a trip alone that someone else booked for them. Only 9% had booked a trip themselves using a phone service such as Lyft Concierge or GoGoGrandparent.

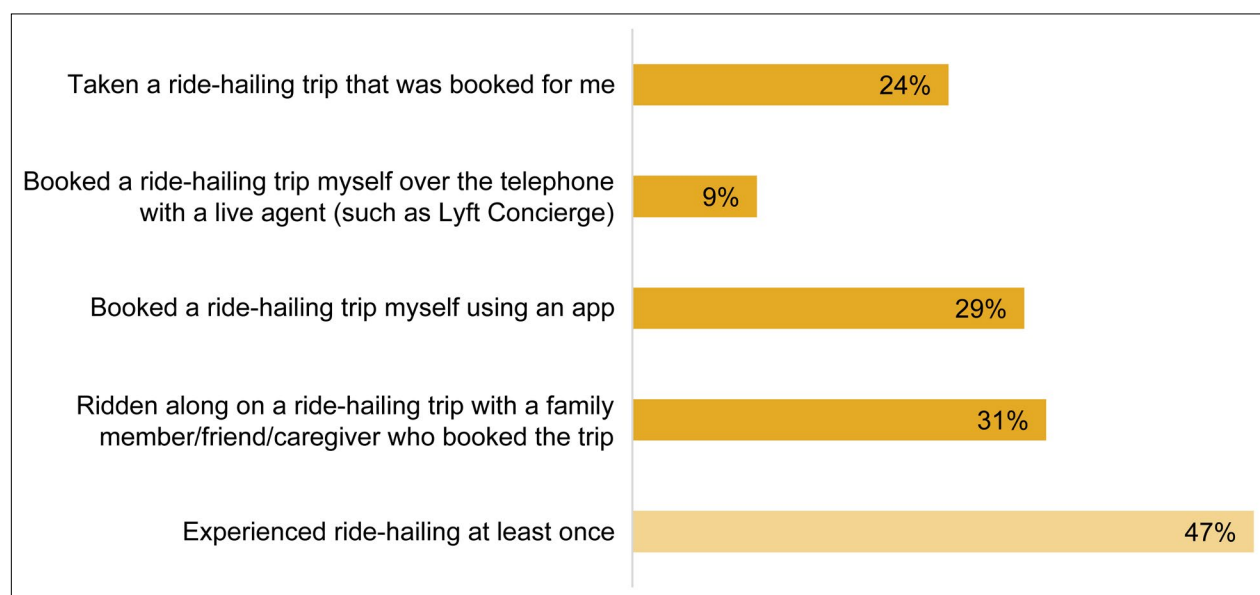


Figure 7. Percentage with Different Ride-Hailing Experiences

Figure 8 shows the different ride-hailing companies with which respondents had an account. Almost half (46%) of respondents had an account with at least one ride-hailing provider. Uber (33%) and Lyft (23%) were the two most common ride-hailing providers. Very few respondents had an account with GoGoGrandparent (1%) or some other provider (5%).

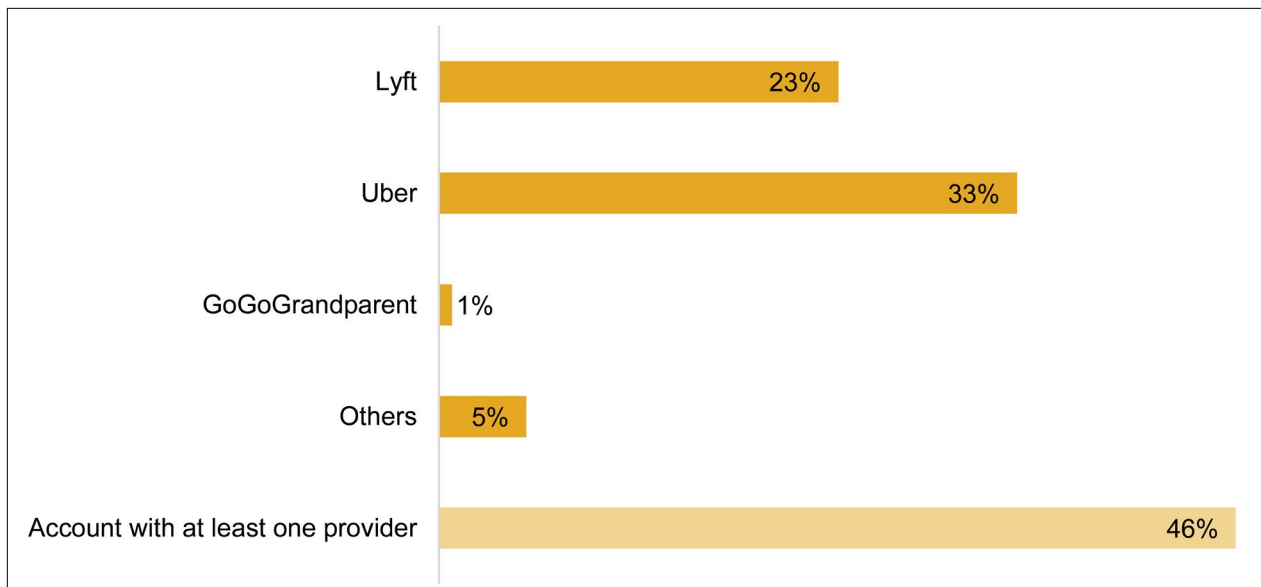


Figure 8. Ride-Hailing Companies with Which Respondent Has an Account

Respondents also were asked about how often they used ride-hailing both at home and when traveling. When they were at home, 40% of respondents used ride-hailing one to three days a month, and 13% used ride-hailing four to ten days per month (Figure 9). Only 2% indicated that they were regular users, taking trips more than ten days a month. When traveling away from home, slightly more than one-half (53%) of respondents indicated that they used ride-hailing at least “sometimes,” and 14% used ride-hailing frequently (Figure 10).

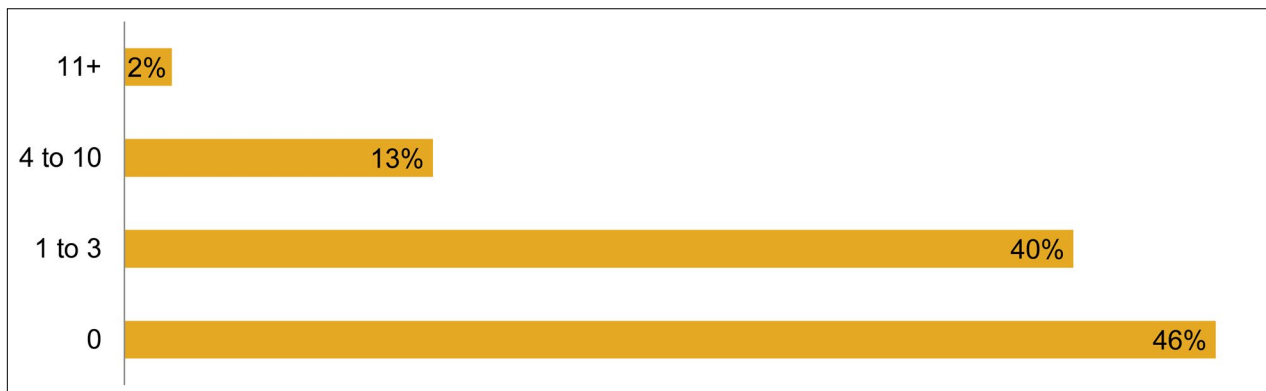


Figure 9. Days per Month Using Ride-Hailing When at Home (Not Traveling Out of Town)

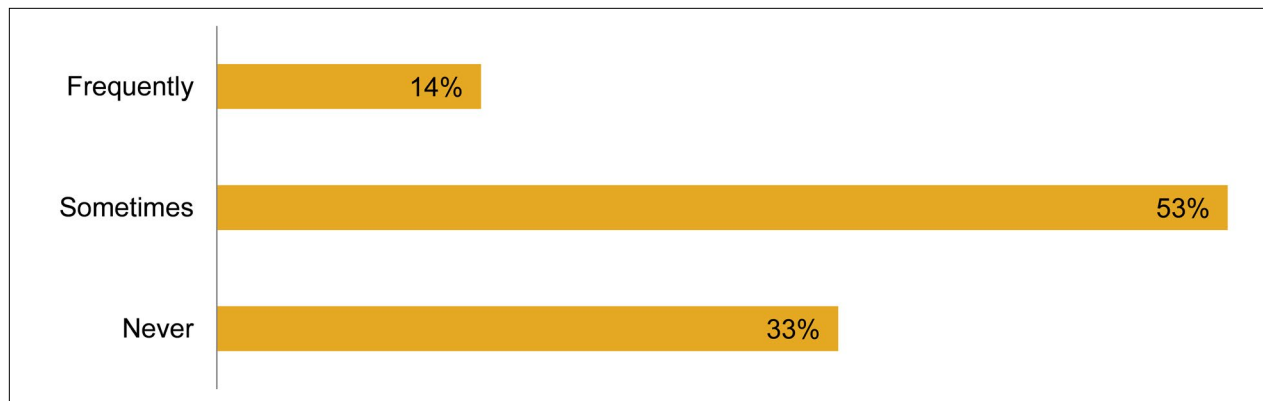


Figure 10. Frequency of Ride-Hailing When Traveling Out of Town

OPINIONS AND PREFERENCES RELATED TO RIDE-HAILING

The survey asked a series of questions to determine respondents' opinions related to ride-hailing, with the goal of identifying barriers to using ride-hailing and the factors that could make ride-hailing useful to a greater number of older adults.

One question asked how comfortable respondents were with four different current features of ride-hailing: riding with a driver that they did not know, sharing their credit card with the company, using ride-hailing after dark, and taking a shared ride-hailing trip with unknown other passengers. As shown in Figure 11, almost two-thirds of respondents (64%) were somewhat or very comfortable riding with a driver that they did not know. However, almost half (48%) were "not at all comfortable" with sharing their credit card with the ride-hailing company or using ride-hailing after dark. The feature with which the fewest respondents were comfortable was sharing a ride with an unknown passenger, although close to half (45%) indicated that they were somewhat or very comfortable with this feature.

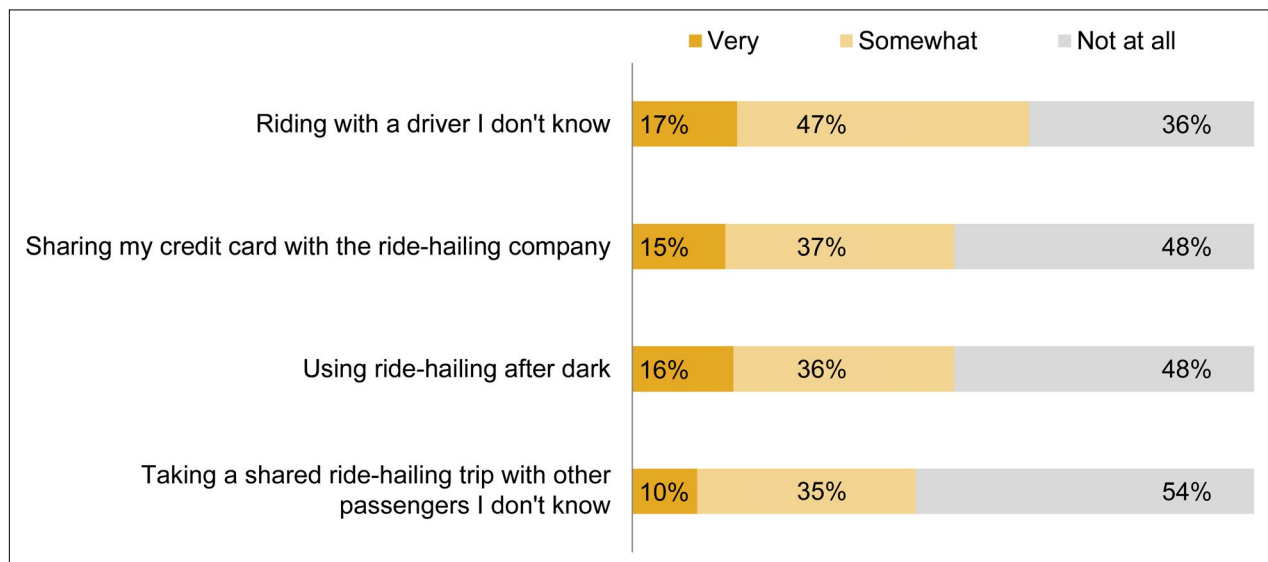


Figure 11. Level of Comfort with Current Ride-Hailing Service Features

Next, respondents were asked how much they would value six features designed to make ride-hailing more accessible by addressing concerns related to booking trips, security, and payment. Four of the features presented currently exist in some niches of the industry but are not widely available and/or well known, such as a helpline to call or a way to request an accessible vehicle. The other two features presented in the survey do not, to the best of our knowledge, currently exist, but are features that we hypothesized might alleviate concerns related to payment for ride-hailing, especially for people who are “unbanked” (no credit card or bank account) or who are very concerned about online financial fraud. These other two features are the option to receive a paper bill from the driver that could be paid in cash at a local store and paying with a pre-loaded ride-hailing card that is not linked to a bank account or credit card.

With respect to the process of booking and managing trips, 70% valued somewhat or a lot having a company helpline to call, and almost as many (63%) valued the option to book the trip over the phone with a live agent (Figure 12). The accessibility service features were also popular, especially having trained drivers to help older passengers (60%). Finally, 44% of respondents placed some or a lot of value on having accessible vehicles.

Finally, with respect to the payment options, the ride-hailing card unlinked to a bank account or credit card was quite popular, valued somewhat or a lot by 62% of respondents (Figure 12). Fewer, but still a third (35%), valued the concept of receiving a paper bill from the driver, which the passenger could pay at a local store with a cash option.

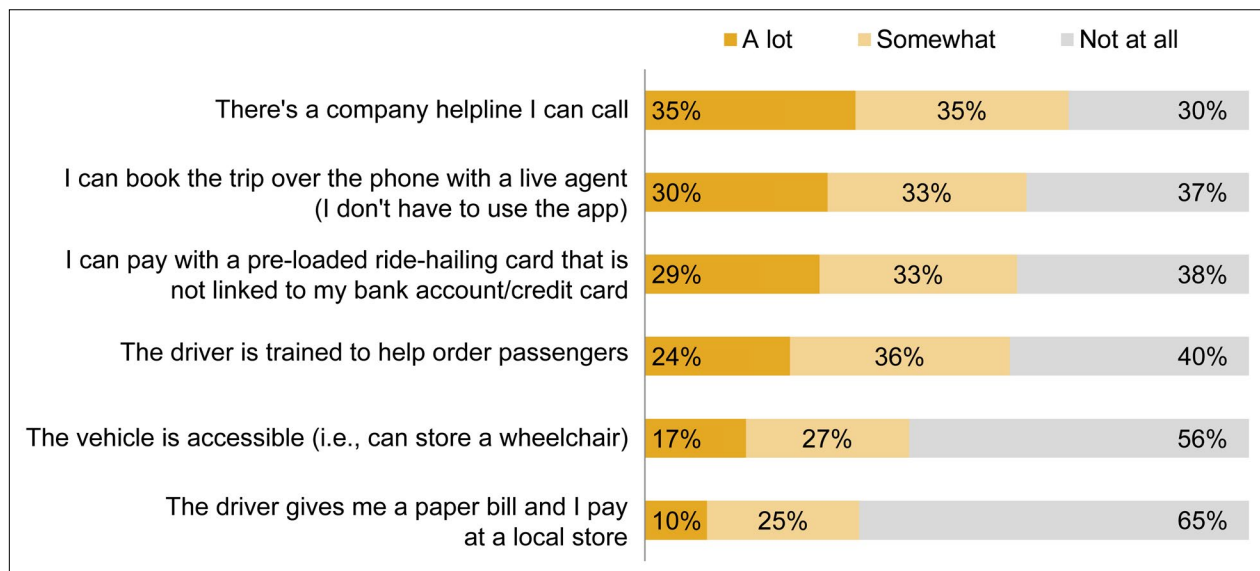


Figure 12. Value Placed on Potential New Ride-Hailing Service Features

Finally, the survey also examined reasons that respondents might want to use ride-hailing. As shown in Figure 13, around two-thirds responded “yes” or “maybe” when asked if they might use ride-hailing to go out at night without having to drive (67%), to go somewhere without having to ask friends/family for rides (66%), or to avoid the worry of getting lost when driving (62%). Slightly fewer, but still a majority (56%) responded “yes” or “maybe” when asked if they might want to use ride-hailing as a way to get help carrying heavy bags to their door.

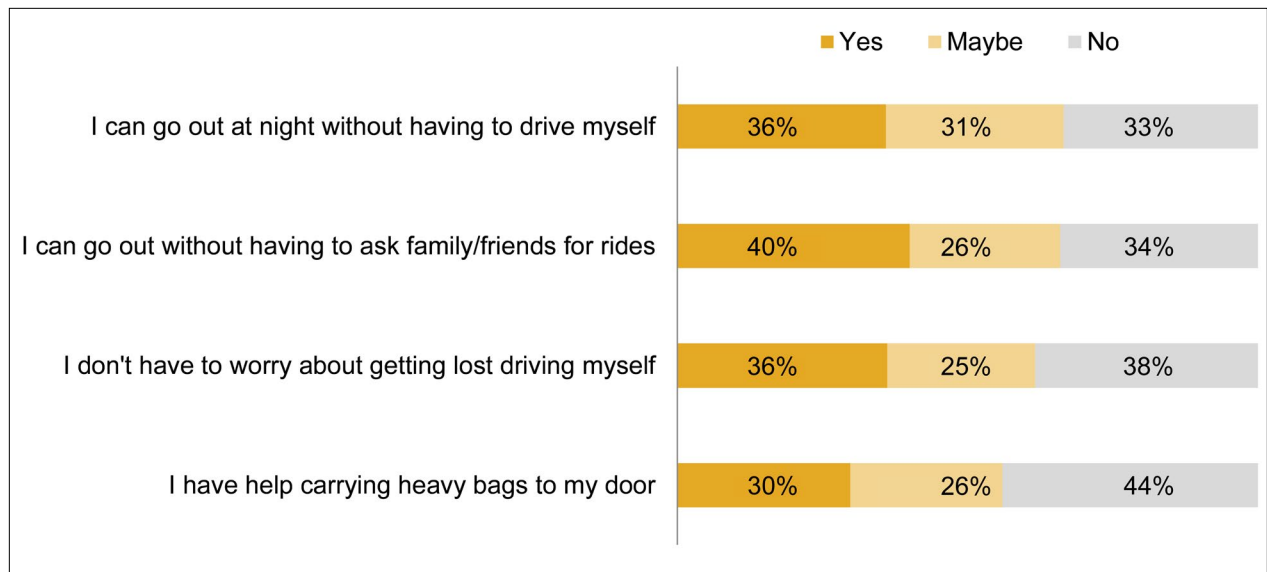


Figure 13. Reasons to Use Ride-Hailing

Note: Rows do not all sum to 100% because numbers have been rounded.

V. VARIATIONS IN RIDE-HAILING USE AND ATTITUDES BY POPULATION SUBGROUPS

This chapter explores how different subgroups of the population responded to the survey questions about ride-hailing: use of ride-hailing, comfort with different existing and potentially new service features, and reasons why respondents might use ride hailing. The discussion is first presented by question topic: how did people with different characteristics respond to each question topic? The concluding section is organized by population subgroup, pointing out where different characteristics were associated with ride-hailing use and opinions.

For each topic, we looked at differences by socio-demographic factors, characteristics of the place the respondent lives, and use of different technology and travel options. The statistical test of two proportions was used to check whether differences between subgroups (e.g., men versus women) are statistically significant at 99% and 95% confidence levels. Tables 3 through 14 present the results of statistical testing.

The statistically significant differences among subgroups identified in the tables are not necessarily the only important differences that exist. Rather, the differences are those that were statistically significant according to the particular tests used. It is also important to keep in mind that statistical significance is not an automatic indicator of scientific or policy importance, as discussed in a 2016 statement from the American Statistical Association.³⁵

The following discussion highlights those variations by subgroups that were both (1) statistically significant and (2) ten percentage points or more. These larger differences point to variations among subgroups that might warrant special consideration by planners and policymakers.

VARIATIONS IN USE OF RIDE-HAILING

This section examines variations in ride-hailing use: whether respondents had experienced it at all, whether they have booked a ride themselves or had one booked for them, and whether or not they had a ride-hailing account. Tables 4, 5, and 6 present the results of the analyses.

The subgroups that stand out with notably higher ride-hailing experience across four or five of the metrics are respondents with a college degree, working for pay, in the highest income group, living in urban communities, comfortable paying bills online, comfortable checking a bank balance online, and had used public transit in the last month. Some of these differences were large. For example, with respect to having booked a ride themselves, there was a 21 percentage-point difference between people who had no more than a high-school education (24%) and people with a college degree (45%). Further, 52% of respondents in urban settings had experienced ride-hailing at least once, as compared to 26% of rural respondents (a 26 percentage-point difference).

The complete sets of subgroups linked with meaningfully higher support for each aspect of ride-hailing activity are as follows:

- **Had used ride-hailing at least once:** Respondents who were Asian/Asian-American (as compared to White), had at least some college education, were employed, were in the highest income group, lived in an urban community, were comfortable paying bills online, were comfortable checking a bank balance online, and had used public transit in the past month.
- **Had booked a ride themselves, either with an app or over the phone:** Respondents who had a college degree, were employed, were in the highest income group, lived in an urban community, were comfortable paying bills online, were comfortable checking a bank balance online, and had used public transit in the past month.
- **Taken a ride booked by someone else:** Respondents who were Black/African-American (as compared to White), lived in an urban community, and had used public transit in the past month.
- **Went along with someone else who booked the ride:** Respondents who were 55 to 64 years old, Asian/Asian-American (as compared to White), had a college degree, employed, in the highest income group, lived in an urban community, were comfortable paying bills online, were comfortable checking a bank balance online, and had used public transit in the past month.
- **Have ride-hailing account:** Respondents who were 55 to 64 years old, Asian/Asian-American (as compared to White), had a college degree, employed, in the highest income group, lived in an urban community, were comfortable paying bills online, were comfortable checking a bank balance online, and had used public transit in the past month.

Across the different measures of ride-hailing use, there were no meaningful differences related to gender, Latino/Hispanic ethnicity, disability status, health status, use of mobility aids, living with other people or in a community for older adults, comfort paying for online purchases with a credit card, or having driven in the past month.

Table 4. Percent of Respondents Using Ride-Hailing, by Sociodemographics

Subgroup	Have experienced ride-hailing at least once	Have booked a ride using an app or by phone	Have taken a ride booked for them	Went along with someone else who booked the ride	Have at least one ride-hailing account
<i>All respondents</i>	46	30	23	30	45
Age (years)					
55–64	48	34	26	34	51
65–74	46	26**	21**	31	40**
75+	42**	25**	19**	22**	37**
Gender					
Male	44	31	21	27	45
Female	48*	29	26**	34**	46
Race					
White	45	30	22	30	44
Black/African-American	55*	37	35**	37	50
Asian/Asian-American	60**	35	25	41**	62**
Other	41	27	21	24*	35**
Latino/Hispanic descent					
Yes	47	31	24	30	49
No	46	30	24	31	44*
Highest education completed					
Grade school, high-school, or GED	39	24	22	27	41
Some college	49**	31**	23	31*	45
College degree	64**	45**	28**	42**	57**
Employment status					
Working for pay	58	40	28	40	55
Unemployed, but looking for work	32**	25**	18*	23**	43*
Not working by choice (retired, etc.)	42**	25**	22**	27**	41**
Income (annual household)					
0–\$50,000	38	23	23	24	42
\$50,001–\$100,000	47**	30**	22	33**	42
\$100,001+	68**	48**	27	46**	61**

Table 4, continued

Subgroup	Have experienced ride-hailing at least once	Have booked a ride using an app or by phone	Have taken a ride booked for them	Went along with someone else who booked the ride	Have at least one ride-hailing account
Disability					
Yes	44	32	28	29	50
No	47**	30*	23	31**	45
Physical health issues					
Yes	42	33	25	25	47
No	47	30	24	32*	46
Uses a mobility aid (any kind)					
Yes	45	32	29	31	48
No	47	30	22**	31	45

** Statistically significant at $p < 0.01$. * Statistically significant at $p < 0.05$.

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

Table 5. Percent of Respondents Using Ride-Hailing, by Living Situation

Subgroup	Have experienced ride-hailing at least once	Have booked a ride using an app or by phone	Have taken a ride booked for them	Went along with someone else who booked the ride	Have at least one ride-hailing account
<i>All respondents</i>	46	30	23	30	45
Lives in a community for older adults					
Yes	45	33	24	33	47
No	47	30	24	31	46
Living with other people					
Spouse, partner, other family	48	31	24	33	46
Other people	43	26*	25	26*	47
No one (living alone)	45	29	23	28*	46
Community type (self-identified)					
Urban part of city/region	52	36	29	35	52
Suburban part of city/region	50	33	24*	34	47*
Small town	35**	20**	20**	25**	41**
Rural area	26**	13**	11**	14**	29**

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

Table 6. Percent of Respondents Using Ride-Hailing, by Technology Use and Travel Behavior

Subgroup	Have experienced ride-hailing at least once	Have booked a ride using an app or by phone	Have taken a ride booked for them	Went along with someone else who booked the ride	Have at least one ride-hailing account
<i>All respondents</i>	46	30	23	30	45
Comfortable ^a paying bills online					
Yes	49	33	25	33	47
No	32**	16**	16**	22**	36**
Comfortable ^a buying things online w/ credit card					
Yes	47	31	24	31	46
No	39*	22*	22	32	38*
Comfortable ^a checking a bank balance online					
Yes	49	32	25	32	47
No	34**	17**	18**	22**	36**
Used public transit in past month					
Yes	57	42	32	41	59
No	43**	26**	20**	27**	40**
Drove themselves in past month					
Yes	47	31	23	32	45
No	46	25**	24	27	46

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

^a Sum of those who said they were “somewhat” or “very” comfortable with the activity.

Note: For each survey question, the authors used the test of two proportions to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

VARIATIONS IN COMFORT WITH EXISTING RIDE-HAILING FEATURES

This section examines variations in comfort with existing features of ride-hailing among different population groups. The results of the analyses are presented in Tables 7, 8, and 9.

The following subgroups have a notably higher comfort with three or four existing features of the ride-hailing experience: had a college degree, were employed, were in the highest income group, were comfortable paying bills online, were comfortable making online credit card purchases, were comfortable checking a bank balance online, and had used public transit in the previous month. For example, transit riders were 22 percentage points more likely than others to be comfortable taking shared ride-hailing trips with a stranger (61% versus 39%). Also, men were 17 percentage points more likely than women (62% versus 45%) to be comfortable using ride-hailing after dark.

Respondents comfortable with online financial tools were markedly more likely to be comfortable with all aspects of ride-hailing service, even those that are unrelated to payments. For example, respondents comfortable paying bills online were 32 percentage points more likely than the others to be comfortable riding with an unknown driver (69% and 37%, respectively). More expectedly, there was a stark difference in comfort sharing a credit-card with ride-hailing companies: 54% of respondents comfortable making online purchases with a credit-card were comfortable paying for ride-hailing with a credit card, compared to 16% of respondents not comfortable using a credit-card for online shopping.

The complete set of subgroups linked with meaningfully higher comfort with each existing ride-hailing service feature is as follows:

- **Riding with an unknown driver:** Respondents who were 55 to 64, had a college degree, were in the highest income group, did not live a community for older adults, comfortable paying bills online, comfortable making online credit card purchases, comfortable checking a bank balance online, and had used transit in the previous month.
- **Using ride-hailing after dark:** Respondents who were male, White, had a college degree, were employed, were in the highest income group, comfortable paying bills online, comfortable making online credit card purchases, comfortable checking a bank balance online, and had used transit in the previous month.
- **Sharing credit card information with ride-hailing company:** Respondents who had a college degree, were employed, were in highest income group, were living with family, were living in an urban community, comfortable paying bills online, comfortable making online credit card purchases, comfortable checking a bank balance online, and had used transit within the previous month.
- **Sharing a ride-hailing trip with a stranger:** Respondents who were Latino/Hispanic, had physical health issues, comfortable paying bills online, comfortable

making online credit card purchases, comfortable checking a bank balance online, and had used transit within the previous month.

The results indicate that, across the different service features tested, there were no meaningful differences by disability, use of a mobility aid, and having driven in the previous month.

Table 7. Percent of Respondents Comfortable^a with Existing Ride-Hailing Features, by Sociodemographics

Subgroup	Riding with driver I don't know	Using ride-hailing after dark	Sharing credit card with ride-hailing company	Taking shared ride-hailing trip with a stranger
<i>All respondents</i>	63	51	51	45
Age (years)				
55–64	67	55	54	47
65–74	63	48**	49*	46
75+	55**	48**	48**	41*
Gender				
Male	70	62	56	50
Female	60**	45**	49**	43**
Race				
White	65	56	55	44
Black/African-American	63	48*	51	49
Asian/Asian-American	61	46**	53	41
Other	57**	39**	46**	39
Latino/Hispanic descent				
Yes	66	52	51	52
No	63*	52	52	42**
Highest education completed				
Grade school, high school, or GED	59	46	47	44
Some college	65**	52*	50	42
College degree	75**	66**	66**	52**
Employment status				
Working for pay	70	61	61	51
Unemployed, but looking for work	65	57	30**	49
Not working by choice (retired, etc.)	61**	47**	49**	43**
Income (annual household)				
0–\$50,000	60	46	45	47
\$50,001–\$100,000	64*	48	52**	43
\$100,001+	74**	70**	68**	46
Disability				
Yes	63	58	55	51
No	64*	50	51	45
Physical health issues				
Yes	61	56	52	58
No	64	51	52	44**
Uses a mobility aid (any kind)				
Yes	67	55	51	47
No	63	51*	52	45

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

^a Sum of those who were somewhat or very comfortable with the service features.

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

Table 8. Percent of Respondents Comfortable^a with Ride-Hailing Features, by Living Arrangements

Subgroup	Riding with driver I don't know	Using ride-hailing after dark	Sharing credit card with ride-hailing company	Taking shared ride-hailing trip with a stranger
<i>All respondents</i>	63	51	51	45
Lives in a community for older adults				
Yes	53	47	47	51
No	66**	52	53*	45*
Living with other people				
Spouse, partner, other family	65	53	55	45
Other people	65	57	43**	47
No one (living alone)	59**	47*	47**	48
Community type (self-identified)				
Urban part of city/region	66	54	54	48
Suburban part of city/region	64	50*	53	44*
Small town	57**	53	52	46
Rural area	63	57	41**	46

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

^a Sum of those who were somewhat or very comfortable with the service features.

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

Table 9. Percent of Respondents Comfortable^a with Ride-Hailing Features, by Technology and Transportation Use

Subgroup	Riding with driver I don't know	Using ride-hailing after dark	Sharing credit card with ride-hailing company	Taking shared ride-hailing trip with a stranger
<i>All respondents</i>	63	51	51	45
Comfortable ^b paying bills online				
Yes	69	56	56	48
No	37**	29**	27**	30**
Comfortable ^b buying things online w/ credit card				
Yes	66	53	54	47
No	36**	27**	16**	28**
Comfortable ^b checking a bank balance online				
Yes	68	55	56	48
No	39**	29**	30**	29**
Used public transit in past month				
Yes	75	66	60	61
No	59**	47**	49**	39**
Drove themselves in past month				
Yes	64	53	53	45
No	62	47**	44**	47

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

^a Sum of those who were somewhat or very comfortable with the service features.

^b Sum of those who said they were "somewhat" or "very" comfortable with the activity.

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

VARIATIONS IN VALUE PLACED ON POTENTIAL NEW RIDE-HAILING FEATURES

This section examines variations among different population groups in terms of the value placed on potential new ride-hailing service features. Tables 10, 11, and 12 present the results of the analysis.

The subgroups that stand out with notably higher support for at least four of the service features were respondents who had completed high school as their highest level of education, were in the lowest income group, had a disability, had a physical health issue, used a mobility aid, and were comfortable making online credit card purchases. The variation among sub-groups was particularly large for two of the new service features: accessible vehicles and trained drivers. For example, respondents with a disability were 31 percentage points more likely than those without a disability to value an accessible vehicle (70% versus 39%). There was also a particularly large difference by income group for the option to pay a paper bill at a store. This new option was valued by 43% of respondents in the lowest income group compared to 19% in the highest income group, a 24-percentage point difference.

The characteristics linked with meaningfully higher value placed on each potentially new ride-hailing service feature are as follows:

- **Accessible vehicle:** Respondents who were 55 to 64, Black/African-American or “Other” race (as compared to White), Latino/Hispanic, without education beyond high-school, unemployed but looking for work, in the lowest income group, had a disability, had a physical health issue, used a mobility aid, living in a community for older adults, and had used public transit in the previous month.
- **Driver trained to help older adults:** Respondents who were Black/African-American (compared to White), without education beyond high school, in the lowest income group, had a disability, had a physical health issue, used a mobility aid, were comfortable making online purchases with a credit card, and had used public transit in the previous month (see Tables 10 and 12).
- **Company telephone hotline:** Respondents who had a disability, had a health issue, lived in an urban area, and were comfortable making online purchases with a credit card.
- **Can book trips with a live agent:** Respondents who had no education beyond high school, were in the lowest income group, used a mobility aid, and were comfortable making online purchases with a credit card.
- **Can pay with a preloaded ride-hailing card:** Respondents who were 55 to 64 years old, in the lowest income group, had a disability, had a physical health issue, used a mobility aid, and were comfortable making online purchases with a credit card.

- **Driver gives a paper bill to be paid at a local store:** Respondents who were 55 to 64 years old, without education beyond high school, in the lowest income, had a disability, had a physical health issue, used a mobility aid, and were comfortable making online purchases with a credit card.

Across the different service features, there were no meaningful variations of any kind by gender, living with other people in the household, comfortable paying bills online, comfortable checking a bank balance online, or having driven in the previous month.

Table 10. Percent of Respondents Who Value^a Service Features, by Sociodemographics

Subgroup	Accessible vehicle	Trained driver	Company helpline available	Book trip with live agent	Pay with pre-loaded card	Paper bill to pay at store
<i>All respondents</i>	43	60	70	63	61	35
Age (years)						
55–64	49	62	73	64	68	40
65–74	39**	56**	65**	61	55**	31**
75+	33**	61	68*	65	49**	27**
Gender						
Male	43	56	66	60	57	38
Female	44	63**	73**	66**	65**	34*
Race						
White	38	59	68	63	60	33
Black/African-American	48**	70**	72	65	67	33
Asian/Asian-American	45*	62	70	58	65	34
Other	53**	59	74*	63	61	36
Latino/Hispanic descent						
Yes	50	63	75	64	65	40
No	41**	59*	68**	63	60**	33**
Highest education completed						
Grade school, high-school, or GED	49	64	71	67	63	40
Some college	42**	61	67	61**	62	33**
College degree	32**	52**	71	57**	57**	26**
Employment status						
Working for pay	41	55	71	60	63	35
Unemployed, but looking for work	59**	64	68	58	62	34
Not working by choice (retired, etc.)	44	63**	70	65*	61	36
Income (annual household)						
0–\$50,000	53	66	71	69	66	43
\$50,001–\$100,000	39**	61**	70	61**	60**	34**
\$100,001+	27**	45**	67*	50**	52**	19**

Table 10, continued

Subgroup	Accessible vehicle	Trained driver	Company helpline available	Book trip with live agent	Pay with pre-loaded card	Paper bill to pay at store
Disability						
Yes	70	81	81	71	76	45
No	39**	56**	68**	62**	59**	34**
Physical health issues						
Yes	72	80	78	65	75	47
No	41**	58**	69**	63	60**	34**
Uses a mobility aid (any kind)						
Yes	65	78	76	72	71	46
No	36**	55**	68**	60**	58**	32**

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

^a Sum of those who would value the option “somewhat” or “a lot.”

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

Table 11. Percent of Respondents Who Value^a Service Features, by Living Situation

Subgroup	Accessible vehicle	Trained driver	Company helpline available	Book trip with live agent	Pay with pre-loaded card	Paper bill to pay at store
<i>All respondents</i>	43	60	70	63	61	35
Lives in a community for older adults						
Yes	55	65	63	60	56	32
No	42**	60*	71**	63	62*	36
Lives with other people						
Spouse, partner, other family	43	60	71	62	62	34
Other people	50*	60	69	61	65	41*
No one (living alone)	42	62	68	67*	59	36
Community type (self-identified)						
Urban part of city/region	47	65	74	67	67	40
Suburban part of city/region	40**	58**	69*	60**	59**	31**
Small town	47	59	62**	67	61*	36
Rural area	51	63	75	70	64	44

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

^a Sum of those who would value the option “somewhat” or “a lot.”

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

Table 12. Percent of Respondents Who Value^a Service Features, by Technology and Transportation Use

Subgroup	Accessible vehicle	Trained driver	Company helpline available	Book trip with live agent	Pay with pre-loaded card	Paper bill to pay at store
<i>All respondents</i>	43	60	70	63	61	35
Comfortable ^b paying bills online						
Yes	44	60	72	63	62	35
No	41	60	62**	62	59	36
Comfortable ^b buying something online with a credit card						
Yes	44	61	71	64	62	36
No	42	47**	53**	53**	48**	24**
Comfortable ^b checking a bank balance online						
Yes	43	60	71	64	62	36
No	47	63	62**	60	57*	34
Used public transit in the past month						
Yes	53	68	75	67	69	41
No	40**	58**	68**	62*	59**	33**
Drove themselves in the past month						
Yes	43	60	70	62	62	36
No	49*	64	69	66	61	35

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

^a Sum of those who would value the option “somewhat” or “a lot.”

^b Sum of those who said they were “somewhat” or “very” comfortable with the activity.

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

VARIATION IN THE REASONS WHY RESPONDENTS MIGHT USE RIDE-HAILING

This section examines variations among population groups in terms of agreement with different reasons to use ride-hailing. The results of the analyses are presented in Tables, 13, 14, and 15.

Subgroups that stand out as generally more interested in ride-hailing because they placed a notably higher value on at least three aspects of the ride-hailing experience are respondents who were aged 55 to 64, females, those who had a disability, used a mobility aid, were comfortable making online purchases with a credit card, and had used public transit in the previous month. For example, 76% of people who used a mobility aid valued help carrying heavy bags, compared to 49% of people who did not use a mobility aid, a 27-percentage point difference. Also, respondents in the youngest age group (55 to 64 years) were 19 percentage points more likely than those in the oldest group to value ride-hailing because they did not have to worry about getting lost (68% versus 49%).

Other characteristics were linked with meaningfully higher percentages of respondents agreeing with different reasons to use ride-hailing services. The subgroups with higher agreement are as follows:

- **Not having to ask for rides:** Respondents who were aged 55 to 64, females, having no education beyond high-school, in the lowest income group, having a disability, having physical health issues, using a mobility aid, comfortable paying bills online, comfortable making online credit card purchases, comfortable checking a bank balance online, and had used transit in the last month.
- **Not having to drive at night:** Respondents who were aged 55 to 64, having a disability, comfortable paying bills online, comfortable making online credit card purchases, comfortable checking a bank balance online, and having used transit in the previous month.
- **Not getting lost:** Respondents who were aged 55 to 64, females, having a disability, and using a mobility aid.
- **Help carrying bags:** Respondents who were females, had at most a high-school education, unemployed but looking for work, in the lowest income, group, having a disability, had physical health issues, using a mobility aid, were comfortable buying something online with a credit card, and had used public transit in the previous month.

Across the service features, there were no meaningful variations between subgroups by race, Latino/Hispanic ethnicity, living in a community for older adults, living with other people, urban/non-urban community type, and not having driven in the previous month.

Table 13. Reasons^a to Use Ride-Hailing, By Sociodemographics

Subgroup	Can go out without asking for rides	Can go out at night without having to drive	Don't have to worry about getting lost	Help carrying heavy bags
<i>All respondents</i>	65	66	61	56
Age (years)				
55–64	71	72	68	60
65–74	63**	63**	58**	52**
75+	56**	56**	49**	50**
Gender				
Male	59	63	55	47
Female	71**	69**	65**	62**
Race				
White	66	68	60	55
Black/African-American	68	71	64	61
Asian/Asian-American	70	66	69**	57
Other	57**	60**	56	58
Latino/Hispanic descent				
Yes	67	69	62	56
No	65	66	61	56
Highest education completed				
Grade school, high-school, or GED	70	67	64	59
Some college	63**	65	59*	56
College degree or more	59**	67	57**	48**
Employment status				
Working for pay	68	71	64	54
Unemployed, but looking for work	74	76	72	66**
Not working by choice (retired, etc.)	64	64**	59**	57
Income (annual household)				
0–\$50,000	71	67	64	61
\$50,001–\$100,000	65**	66	62	54**
\$100,001+	56**	66	57**	47**
Disability				
Yes	81	75	77	74
No	63**	65**	59**	52**
Physical health issues				
Yes	75	69	69	71
No	65**	66	61**	54**
Uses a mobility aid (any kind)				
Yes	77	72	72	76
No	62**	65**	58**	49**

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

^a Sum of those who said “yes” or “maybe” when asked if the statement was a reason they might value using ride-hailing.

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

Table 14. Reasons^a to Use Ride-Hailing, By Living Situation

Subgroup	Can go out without asking for rides	Can go out at night without having to drive	Don't have to worry about getting lost	Help carrying heavy bags
<i>All respondents</i>	65	66	61	56
Lives in a community for older adults				
Yes	67	62	60	59
No	66	67*	62	56
Living with other people				
Spouse, partner, other family	66	67	62	55
Other people	71	69	64	60
No one (living alone)	63	63*	60	55
Community type (self-identified)				
Urban part of city/region	70	70	65	60
Suburban part of city/region	65*	65*	60**	53**
Small town	67	67	61	54*
Rural area	61**	68	62	65

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

^a Sum of those who said “yes” or “maybe” when asked if the statement was a reason they might value using ride-hailing.

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category.

Table 15. Reasons^a to Use Ride-Hailing, by Technology and Transportation Use

Subgroup	Can go out without asking for rides	Can go out at night without having to drive	Don't have to worry about getting lost	Help carrying heavy bags
<i>All respondents</i>	65	66	61	56
Comfortable ^b paying bills online				
Yes	67	68	63	57
No	58**	58**	54**	50**
Comfortable ^b buying something online with a credit card				
Yes	67	67	62	57
No	50**	53**	54*	44**
Comfortable ^b checking a bank balance online				
Yes	68	68	63	57
No	54**	58**	54**	52
Used public transit in the past month				
Yes	75	77	68	63
No	62**	63**	59**	53**
Drove themselves in the past month				
Yes	64	67	61	55
No	73**	66	63	60

* Statistically significant at $p < 0.05$. ** Statistically significant at $p < 0.01$.

^a Sum of those who said “yes” or “maybe” when asked if the statement was a reason they might value using ride-hailing.

^b Sum of those who said they were “somewhat” or “very” comfortable with the activity.

Note: For each survey question, the authors used the *test of two proportions* to check for a statistically significant difference between subgroup responses. Within each category (e.g., age), the first subgroup listed is the reference case for the test; its value is compared to the response among the other subgroups within that category. Values in cells highlighted in blue are different from the reference case by at least ten percentage points and the difference is statistically significant at $p < 0.05$.

ANALYSIS BY SUBGROUP

This chapter concludes with a discussion of ride-hailing experiences and opinions for each subgroups of the respondents.

Several subgroups stood out, with clear patterns across the numerous factors analyzed. We consistently found relatively large differences related to the sociodemographic characteristics of educational attainment, working status, and income, as well as to comfort with online tools and experience using public transit. However, the study found fewer meaningful differences than expected by other personal characteristics, including factors we had anticipated would strongly influence ride-hailing behavior and attitudes, including gender and home location. For other characteristics, the pattern was more mixed.

The following discussion highlights statistically significant differences among subgroups that were at least ten percentage points apart.

Age: For the most part, and as conventional wisdom currently holds, experience with and positive attitudes towards ride-hailing were highest among the youngest respondents (55 to 64 years old) and tapered off across the two older groups. However, a majority of these differences were small even between the oldest and youngest groups.

In terms of experience with ride-hailing, the youngest group had more respondents who had ridden along with someone else who had booked a ride-hailing trip, had a ride-hailing account, or were comfortable riding with an unknown driver. For example, 51% of the youngest group had a ride-hailing account versus 37% of the oldest group, a 14-percentage point difference. By contrast, differences by age were not meaningful for having experienced ride-hailing at least once, having booked a ride using an app or by phone, having taken a ride booked by someone else for the respondent, using ride-hailing after dark, sharing credit card information with the ride-hailing company, or sharing trips with a stranger.

More of the youngest respondents valued a number of possible ride-hailing service features tested, with differences of at least ten percentage points for having an accessible vehicle, paying with a pre-loaded credit card, or paying a paper bill at a store. The difference by age was less than ten percentage points for having the options of a trained driver, company telephone hotline, or the option to book a trip with a live agent.

Finally, there were more respondents in the youngest group who valued ride-hailing as a way to go out without asking others for rides, going out at night without having to drive, or not having to worry about getting lost. The only benefit tested for which there was not more than at least ten percentage point difference by age was help carrying heavy bags.

Gender: In only a very few cases did women and men respond in meaningfully different ways. One of these comfort with ride-hailing after dark: 17 percentage points fewer women than men were comfortable with this. However, larger proportions of female respondents valued ride-hailing as a way to avoid having to ask others for rides, not having to worry about getting lost, or getting help carrying heavy bags. For all other factors explored, the differences were less than ten percentage points, including for having used ride-hailing or having a ride-hailing account.

Race and Ethnicity: A larger percent of Asian/Asian-American respondents (compared to White respondents) had experienced ride-hailing at least once, gone along with someone else who booked a ride, and had a ride-hailing account. Also, a larger proportion of Black/African-American respondents (compared to Whites) had taken a ride booked for them. However, fewer respondents in both racial groups were comfortable using ride-hailing after dark. More Black/African-American respondents than Whites valued an accessible vehicle or a trained driver.

The only difference by ethnicity was that more Latino/Hispanic respondents were comfortable taking shared ride-hailing trips with a stranger and valued the potential service option of an accessible vehicle.

Income, Education, and Employment Status: Findings by household income, education

completed, and employment status roughly tracked each other. For example, ride-hailing experience of various types was higher among people with the most education, those who were working for pay, and those in the highest income bracket. Specific findings include:

- **Educational attainment:** Fewer respondents in the least educated group, those with no more than a high-school education, had experienced ride-hailing in various ways, or were comfortable with the current service features of ride-hailing after dark and sharing credit card information with a ride-hailing company. However, a higher proportion of those in the lowest education group valued every potential new service feature tested except for a company help hotline. Finally, more respondents in the least educated group valued ride-hailing as a way to avoid having to ask others for rides or getting help carrying heavy bags.
- **Employment status:** More respondents who worked for pay, compared to those unemployed or not working by choice, had used ride-hailing. Also, more in the employed group were comfortable using ride-hailing after dark and sharing a credit card with the ride-hailing company. However, fewer of them wished for an accessible vehicle option or valued ride-hailing as a way to get help carrying heavy bags.
- **Income:** More people in the highest income group, compared to those in the lower income groups, had used ride-hailing, had booked themselves a ride, or had an account. More respondents from the highest earner group were also comfortable with riding with an unknown driver, using ride-hailing after dark, or sharing credit card information with a ride-hailing company. On the other hand, more people in the lowest income group valued all the potential new service features tested, except for having a company telephone hotline. In addition, more of the lower-income respondents valued ride-hailing as a way to avoid having to ask others for rides and getting help carrying heavy bags.

Disability, Physical Health Issues, and Use of Mobility Aids: Findings by these three subgroups roughly, though not entirely, tracked each other. There were no meaningful differences by these characteristics for ride-hailing experiences of different kinds and only one difference with respect to comfort with the features of current ride-hailing services. (The exception was that thirteen percent more respondents who had physical health issues were comfortable sharing a ride-hailing trip with a stranger.) However, a greater number of respondents with disabilities, physical health issues, or needing mobility aids valued not only accessible vehicles and trained drivers, but also the options to pay with a pre-loaded credit card or with a paper bill paid at a store. Finally, more of the health-disadvantaged respondents signaled that they would adopt ride-hailing for the various different reasons tested, such as independence in traveling and help with bags.

Residential Location: Of the three questions asked about residential location, the only one that regularly corresponded to meaningful differences was self-reported community type. There were virtually no differences by whether or not respondents lived in a community for older adults or lived with other people in the same household. However, more respondents living in urban areas had used ride-hailing in various ways or had a ride-hailing account. For example, 52% of respondents in urban areas had experienced ride-hailing compared

to 26% of respondents in rural areas.

Comfort with Technology: Comfort with online financial tools was connected with most of the factors analyzed in the study. More respondents who were comfortable with online financial tools had used ride-hailing in various ways, with the largest differences being that 18 percent more tech-savvy respondents had experienced ride-hailing at least once and 16 percent more of this group had booked a ride using an app or by phone. Also, more of these technologically-adept respondents valued ride-hailing as a way to avoid having to ask for rides and to go out at night without having to drive.

As expected, people comfortable with online financial tools were much more comfortable sharing their credit card with a ride-hailing company. Less intuitively, these respondents were also quite a bit more comfortable with other features of current ride-hailing service. For example, respondents comfortable paying bills online were 32 percentage points more comfortable riding with an unknown driver (68% versus 36%). Also, respondents comfortable making online purchases with a credit card were 26 percentage points more comfortable using ride-hailing after dark (53% versus 27%).

Comfort with online financial transactions was less likely to be linked with valuing different potential new service features. The only meaningful differences were by comfort making online credit-card purchases. More respondents who were comfortable with buying things online valued each new potential ride-hailing feature tested, with the exception of accessible vehicles. Counter-intuitively, this was also true for the two payment options designed to make ride-hailing more accessible for people who do not use online financial tools much (or at all): respondents comfortable making online purchases were more likely to value the options to pay with a pre-loaded credit card and to receive a paper bill to pay at a store.

Travel Modes Used: Experience with transit use, though not with driving, was closely linked to how respondents answered the survey questions. In fact, there was a meaningful difference in response by people who had and had not used public transit in the previous month on all but four factors analyzed. More respondents who had used transit in the past month had also used ride-hailing by all metrics, were comfortable with all the current service features, or valued ride-hailing for all the reasons listed except not getting lost. With respect to the potential new service features, transit riders were more supportive of having an accessible vehicle or trained driver.

In contrast to transit use, whether or not respondents had driven themselves in the previous month was not meaningfully correlated with a single factor analyzed in this chapter.

VI. CONCLUSIONS

This chapter summarizes findings that addressed the research questions that guided the study, suggests the policy implications of the findings, acknowledges study limitations, and recommends directions for additional research.

SUMMARY OF FINDINGS

We conclude the report by highlighting a set of key study findings. As a reminder, the survey results can be generalized to the 86% of Californians over 55 who have access to the internet (see Table 1). Generalizing the results in this way is possible because all findings presented in this report use weighted data.

Older online adults are ride-hailing—and will likely do so in greater numbers in coming years.

Close to half of survey respondents had experienced ride-hailing (46%) and almost a third had booked a ride themselves (30%). Even among the oldest age group, those 75 and older, 42% had experienced ride-hailing, 25% had booked a ride, and 37% had a ride-hailing app.

The youngest respondents (those 55 to 64 years old) had modestly more ride-hailing experience than the two older groups of respondents. For example, among these soon-to-be seniors, 48% had experienced ride-hailing, 33% had booked a ride themselves, and 51% had a ride-hailing app.

A diverse group of older online adults ride-hail, although certain subgroups are notably more likely to ride-hail.

The study found that a wide diversity of online older adults have tried ride-hailing. Although ride-hailing is most common among older adults who have higher-incomes, are more educated, comfortable with online financial technology, and transit riders, respondents who did not share those characteristics also ride-share. For example, 20% of respondents living in small towns had booked a ride themselves, compared to 36% of respondents living in urban communities. A travel option shown to be used by one-fifth of a population deserves consideration, even if the majority of the population studied are not using that option.

The majority of older online adults are comfortable with current ride-hailing service features.

The survey found that 63% of respondents were somewhat or very comfortable riding with a driver they did not know, 51% were somewhat or very comfortable with riding after dark, and 51% were somewhat or very comfortable with sharing credit-card information with the ride-hail company. Somewhat fewer respondents were somewhat or very comfortable taking a shared ride-hailing trip with a stranger, though even here close to half (45%) were fine with this feature.

There were few major differences by age group for the comfort levels reported above. For

example, the youngest respondents (those 55 to 64 years old) were 12 percentage points more likely to be comfortable riding with an unknown driver than were the oldest respondents (75 and older).

Older online adults would value getting more help with booking and taking ride-hailing trips, accessible vehicles, and new payment options.

With respect to the process of booking and taking ride-hailing trips, 70% of respondents would value having a company helpline to call, and 63% would value the option to book the trip over the phone with a live agent.

The accessibility service features tested were also popular with respondents, especially the option of trained drivers. Specifically, 60% of respondents said that they would value having a driver trained to help older passengers. Fewer (43%) indicated that they would value the option to have an accessible vehicle.

With respect to payment options, the ride-hailing card unlinked to a bank account or credit card was quite popular, with 61% of respondents indicating support. Far fewer respondents (35%) said that they value the concept of receiving a paper bill from the driver, which the passenger could pay at a local store with a cash option. The youngest group was more likely to value these alternative payment options. The difference was biggest for the option of paying with a pre-loaded ride-hailing card: 68% of those 55 to 64 years old said they would value this feature, as compared to 49% of respondents 75 and older.

Older online adults particularly value ride-hailing as a way to avoid asking for rides and driving at night.

Approximately two-thirds of respondents valued not having to ask for rides (65%) or drive at night (66%), and almost as many respondents valued ride-hailing as way to avoid the worry of getting lost (61%). Somewhat fewer respondents, but still a majority, valued help with bags (56%). The youngest respondents were more likely to value these benefits than the older respondents.

IMPLICATIONS FOR POLICYMAKERS AND RIDE-HAIL PROVIDERS

The study findings suggest a number of implications for policymakers as well as ride-hailing providers working to expand travel options for older adults. To the extent that public agencies or nonprofits want to subsidize or otherwise support ride-hailing for seniors, the following recommendations may be particularly fruitful avenues. Similarly, the findings suggest ways that ride-hailing providers could take to make their services more desirable to seniors.

1. **Ride-hailing can help many older adults maintain active and socially connected lives.** Ride-hailing is promising as a travel option for older adults even though less than half of respondents (46%) had experience with ride-hailing. Although older adults ride-hail at much lower rates than young adults, many seniors and soon-to-be-seniors are ride-hailing, at least occasionally. Generalizing the survey results to the California population, roughly 4.1 million Californians 55 and older have experienced

ride-hailing at least once and 2.6 million have booked ride themselves either online or by phone.³⁶ It is also important to note that one key reason older adults make fewer ride-hailing trips than younger adults is that older adults make fewer trips overall.

Further, the survey shows that older adults of all sociodemographic characteristics and from every part of the state have used ride-hailing, although ride-hailing was more common among respondents who were higher income, educated, and living in urban settings.

2. Ride-hailing may be particularly helpful to older adults who travel at night.

The literature shows that seniors begin to limit their driving before they cease driving entirely, and one common adaptation is to stop driving at night. The findings from this study suggest that ride-hailing is an option that might help many seniors travel after dark. The majority of respondents reported both that they would “value” ride-hailing as a travel option at night and that they were at least somewhat comfortable using ride-hailing after dark.

3. More older adults may use ride-hailing if providers offer more personalized help, trained drivers, accessible vehicles, and new payment options. Of the potential new service features tested in this study, several were popular with approximately two-thirds of all respondents: having a phone number with live operator to call for help, the option to book trips with a live agent, drivers trained to help seniors, and the option to pay with a ride-hailing card unlinked to a bank account or credit card. An accessible vehicle was valued by 43%, and the option of receiving a paper bill from the driver to pay at a local store (with a cash option) was valued by 35%.

4. Currently, the older adults most likely to ride-hail are college-educated, ride transit, live in households with incomes over \$100,000 a year, and live in urban settings. While older adults having these characteristics were noticeably more likely to be current ride-hailers, it is important to stress that they were not the only ones who use ride-hailing in any numbers. For example, while 60% of people in the highest income group had a ride-hailing account compared to 41% in the lowest income group, a travel mode that helps 41% of lower-income older adults is still important.

STUDY LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

As with any survey, the study methodology for this research has some limitations. Most notably, the online survey mode excluded older adults who do not have internet access. Thus, the findings here can be generalized only to the 86% of Californians 55 years and over who are online (and thus presumably more likely to use ride-hailing in the near future than people of the same ages who are not online). An important area of future research is to understand the ride-hailing experiences and preferences of older adults who do not have access to the internet. Also, the authors plan in future to run multivariate regression models with the data to add complementary nuance to the statistical analyses presented here. This type of analysis better pinpoints the characteristics that predict ride-hailing behavior and attitudes.

* * * *

In the ten years since app-based ride-hailing services first appeared they have become useful to a wide diversity of people. Although ride-hailing has been identified with young people living in urban areas, today's ride-hailing population includes many California adults 55 and over. Further, older ride-hailers are located in all types of communities across the state. That said, the study findings suggest a number of service changes that can make ride-hailing available to a greater percent of older adults, thus expanding their travel options.

APPENDIX A: SURVEY QUESTIONNAIRE AND TOPLINE RESULTS

This appendix presents the survey questionnaire and results.

The data were weighted to match the Census Bureau's 2017 American Community Survey (ACS) five-year estimates with respect to age, Hispanic ethnicity, race, household income, education level, employment status, and Caltrans District (based on ZIP Code reported). The weights were constructed using straightforward proportions to match the sampling of our survey and the actual population estimates from ACS. For example, the female to male proportion for 55+ adults in California is 0.54 to 0.46, while our sample proportion for the same was 0.56 to 0.44. To correct for gender, we generated a weight of $0.54/0.56 = 0.96$ for females and $0.46/0.44=1.05$ for males. Each survey taker's response on these multiple factors was assigned the associated weight, and a final weight was calculated for each respondent by multiplying the individual applicable weights. Note that the final weight mean was 1.09 with a standard deviation of 1.60 and a range of 0.02 to 1.79. The authors removed missing and refused responses from the dataset before calculating the response rates.

* * *

Researchers at the Mineta Transportation Institute, San Jose State University, are surveying adults 55 and older in California to understand your transportation needs. Your opinions are very important, no matter how much or little you travel. Public officials can use the survey results to decide which transportation improvements are most critical throughout the state.

The survey takes about 10 - 15 minutes and is anonymous. Your participation is completely voluntary. You can refuse to participate in the entire study, skip any question, or stop the survey at any time. For more information about the study, contact Professor Asha W. Agrawal at asha.weinstein.agrawal@sjsu.edu

By agreeing to participate in the study, it is implied that you have read and understand the above information. Please do not write any identifying information in the responses to this questionnaire.

Q1. Which of the following do you have and use?

	%
Landline phone	51
Simple cell phone (no internet browsing)	15
Smartphone connected to the internet with “apps” (like Google Maps)	84
Computer with internet access	69
Tablet with internet access (like an iPad)	49
<i>Internet access through smartphone, computer, and/or tablet</i>	<i>97</i>

Q2. How comfortable are you using smart phones/computers to do the following?

	Very (%)	Somewhat (%)	Not at all (%)
Using an “app” on a smartphone or tablet	57	29	14
Sending and receiving text messages	77	16	7
Making a video call (such as Skype or FaceTime)	38	31	31
Searching for information online (such as bus schedules)	66	27	7

Q3. How comfortable are you doing the following?

	Very (%)	Somewhat (%)	Not at all (%)
Paying bills online	62	22	16
Buying something at a store with a credit card	72	22	6
Buying something online with a credit card	60	28	12
Checking a bank balance online	66	20	14

Q4. Can you get help using a smartphone, from someone you know? (For example, a friend or relative)

	%
Yes, whenever I need help	51
Sometimes	21
No	7
I don't need help using a smartphone or the internet	21

Ride-hailing services such as Lyft and Uber connect passengers with drivers who offer rides in their own vehicles for a fee.

Q5. Have you heard of ride-hailing services?

	%
Yes	81
No	19

Q6. As far as you know, are ride-hailing services available in your community?

	%
Yes	81
No	19

Q7. Do you have an online account with any ride-hailing services? (Check all that apply)

Ride-hailing services	%
Lyft	23
Uber	33
GoGo Grandparent	1
Other	5
<i>At least one account</i>	<i>51</i>

Q8. Have you used ride-hailing in any of the following ways?

Ways to use ride-hailing	Yes (%)	No (%)
Taken a ride-hailing trip that was booked for me	24	76
Booked a ride-hailing trip myself over the telephone with a live agent (such as Lyft Concierge)	9	91
Booked a ride-hailing trip myself using an app	29	71
Ridden along on a ride-hailing trip with a family member/friend/caregiver who booked the trip	31	69

Q9. When you are at home, how many days a month do you typically use ride-hailing?
(Exclude trips made when you are out-of-town)

Days per month	%
0	33
1 – 3	53
4 - 10	14
11+	

Q10. When you are out of town, how often do you use ride-hailing?

Frequency	%
Never	33
Sometimes	53
Frequently	14

Q11. Now think about all the trips you might be able to make using ride-hailing. How much would you value these service features, given your current lifestyle?

Service features	A lot (%)	Somewhat (%)	Not at all (%)
The vehicle is accessible (i.e., can store a wheelchair)	17	27	56
The driver is trained to help older passengers	24	36	40
The driver gives me a paper bill and I pay at a local store	10	25	65
I can book the trip over the phone with a live agent (I don't have to use the app)	30	33	37
I can pay with a pre-loaded ride-hailing card that is not linked to my bank account / credit card	29	33	38
There a company helpline I can call	35	35	30

Q12. How comfortable are you with the following features of ride-hailing?

Ride-hailing features	Very (%)	Somewhat (%)	Not at all (%)
Riding with a driver I don't know	17	47	36
Sharing my credit card with the ride-hailing company	15	37	48
Using ride-hailing after dark	16	36	48
Taking a shared ride-hailing trip with other passengers I don't know	11	35	54

Q13. Now think about all the trips you might be able to make using ride-hailing. Do these statements describe reasons you might want to use ride-hailing, given your current lifestyle?

Reasons	Yes (%)	Maybe (%)	No (%)
I can go out without having to ask family/friends for rides	40	26	34
I can go out at night without having to drive myself	36	31	33
I don't have to worry about getting lost driving myself	36	25	39
I have help carrying heavy bags to my door	30	26	44

Q14. During a typical week, how many days do you commute to work?

Days per week	%
Do not commute/zero days	63
1	5
2	2
3	4
4	4
5+	20

Q15. Do you volunteer outside your home?

	%
Yes	30
No	70

Q16. During a typical week, how many days do you commute for volunteering?

Days per week	%
Do not volunteer/ zero days	61
1	22
2	11
3	4
4	1

Days per week	%
5+	1

Q17. What is the most recent time you used each type of travel to get somewhere?

Type of travel	Within last 7 days (%)	Within last 30 days (%)	Not Used (%)
Drove myself (in a car, truck, motorcycle, etc.)	76	7	17
Rode as a passenger in a personal vehicle (exclude trips in taxis, ride-hailing services like Lyft or Uber, etc.)	43	25	32
Public transit (bus, train, ferry, etc.)	13	16	71
Paratransit	1	3	96
Taxi	2	7	91
Ride-hailing services like Lyft or Uber	9	19	72

Q18. What is the most recent time you have gotten a ride from...

Type of ride-giver	Within last 7 days (%)	Within last 30 days (%)	Not Used (%)
Family	43	22	35
Friends or neighbors	16	22	62
Paid caregiver	3	3	94
Volunteer driver from a program that helps older adults	3	3	94

Q19. Do you have any disabilities or illnesses that interfere with your ability to travel outside your home?

	%
Yes	16
No	84

Q20. Does your current physical health interfere with your ability to carry out everyday activities like dressing or preparing meals?

	%
Yes	9
No	91

Q21. How often do you use the following mobility aids?

Mobility aids	Regularly (%)	Occasionally (%)	Never (%)
Walking Cane	8	14	78
Walker	4	9	87
Non-motorized wheelchair	2	4	94
Motorized scooter or wheelchair	2	4	94

Q22. What is the highest level of education that you have completed?

Education level	%
Grade school	4
High-school or GED	53
Two-year college degree or vocational school	8
Completed some college (less than 4 years)	11
Graduated from college	14
Post-graduate degree (MA, MBA, PhD, MD etc.)	10

Q23. How would you describe the area where you live?

Area type	%
Urban part of a city/region	28
Suburban part of a city/region	50
Small town	13
Rural area	9

Q24. Do you live in a community for older adults? (For example, a retirement community or assisted-living facility)

	%
Yes	12
No	88

Q25. Your home is

Home type	%
A single-family house	67
A condo or apartment	25
Other	8

Q26. Are you living with anyone?

	%
Yes	
A spouse or partner	50
Extended family	18
Other	11
No one - I am living alone	21

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 36. This is a simple estimate assuming 10,314,400 million adults 55 and older in California, 86% of whom are online. That group of 8,870,384 is then multiplied by the survey findings that 46% have experienced ride-hailing and 30% have booked a trip themselves. Source: The number of seniors comes from American Community Survey (ACS) 2018 data and the percent of California seniors online comes from the ACS 5-year estimates for 2014-18.

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