Travel Behavior Inventory

2021 – 2022 Wave 2 Household Travel Survey

Workshop Sessions 1 & 2

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Workshop Agenda

TUESDAY, JUNE 28

Session 1: Survey Results Presentation

11:00 AM – 12:00 PM CT, 1 hour

- Summarize survey objectives
- Provide a high-level overview of the results and sample composition
- Review key differences in the 2021-2022 survey in comparison to the 2018-2019 survey

15-minute Break

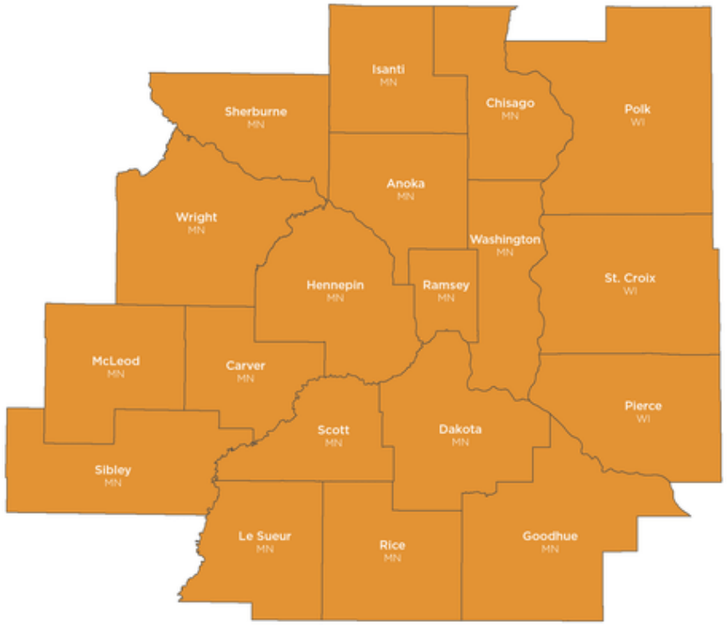
Session 2: Methodology, Lessons Learned and Planning for Wave 3

12:15 – 1:15 PM CT, 1 hour

- Discuss lessons learned and potential methodology improvements
- Review Wave 3 data collection timeline and scope

Travel Behavior Inventory (TBI)
Household Survey

The TBI's **household travel survey** of the greater Twin Cities region has been conducted every 10 years since 1949.



Two significant changes in 2018:

1. **Recurrent** survey program every other year
2. Began using a **smartphone GPS application** for data collection

Transition to a biennial recurrent travel survey program

Planners can keep pace with changes in the transportation industry and regional development (e.g., new modes, changing neighborhoods).

Recurrent programs **1) provide opportunity for rapid improvement cycles based on recent results** and **2) create cost efficiencies** as the program evolves incrementally year over year.

TBI recurrent program schedule targets 12 months of data collection every other year.

Methodology

2021-2022 Survey Overview

SURVEY RESULTS

7,952	15,805	11,792	50,057	182,446	3,363,764
HOUSEHOLDS	**PERSONS**	**VEHICLES**	**TRAVEL DAYS**	**TRIPS**	**LOCATIONS**
Unweighted Records	*Unweighted Records*	*Unweighted Records*	*Unweighted Records*	*Unweighted Records*	*Unweighted Records*

- Survey fielded from **June 22, 2021, through February 5, 2022**.
- **Smartphone participants completed up to a 7-day travel diary**.
- **Online and call center participants completed a 1-day travel diary**.
- All children (under age 18) have a complete 1-day travel diary regardless of participation mode that was reported by an adult member of the household.
- Same questionnaire was used for smartphone, online, and call center participants.
- Survey was available in English, Hmong, Karen, Oromo, Somali, and Spanish.

Survey Region

Target Completes = 7,500

Actual Completes = 7,952

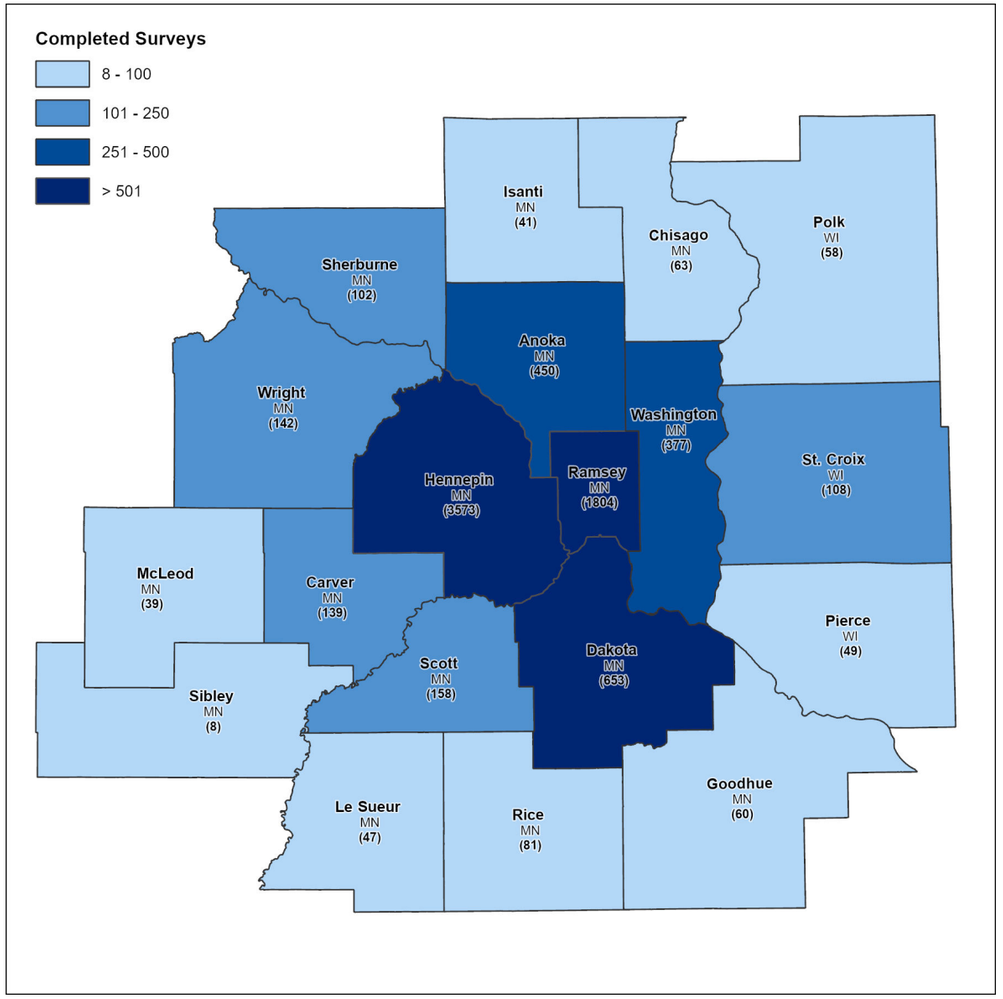
- The overall survey target was exceeded by 452 completes.
- Response rates varied by county and sample segment.

Address-based sampling efforts:

- 90% of the sample

Supplemental sampling efforts:

- 10% of the sample



Survey Design

Wave 2 departed from the Wave 1 design in two primary ways:

- **Used an opt-in approach** where households could select their participation method rather than being assigned based on smartphone ownership**.**
- **Employed supplemental sampling methods** in addition to address-based sampling (ABS).

ADDRESS-BASED SAMPLE

invited via mailed invitations

SUPPLEMENTAL SAMPLE

invited via email, text, or outreach

41% — **3,287 SMARTPHONE PARTICIPANTS**

53% — **4,191 ONLINE PARTICIPANTS**

6% — **474 CALL CENTER PARTICIPANTS**

7,952 COMPLETE HOUSEHOLDS

Recruitment and Engagement

RECRUITMENT

Survey Invitation

- Address-based sampling was used to invite 90% of the final sample.
- Households were invited via mailed invitation materials.

Supplemental Recruitment

Hard-to-reach households were invited to participate via outreach, text message, and email.

ENGAGEMENT

Informational Website

- Participate in the survey
- Answers frequently asked questions

Call Center

- Participate in the survey
- Answer questions
- Reminder calls

Survey Email Address

- Answer participant questions
- Send reminder emails

Survey Participation Options

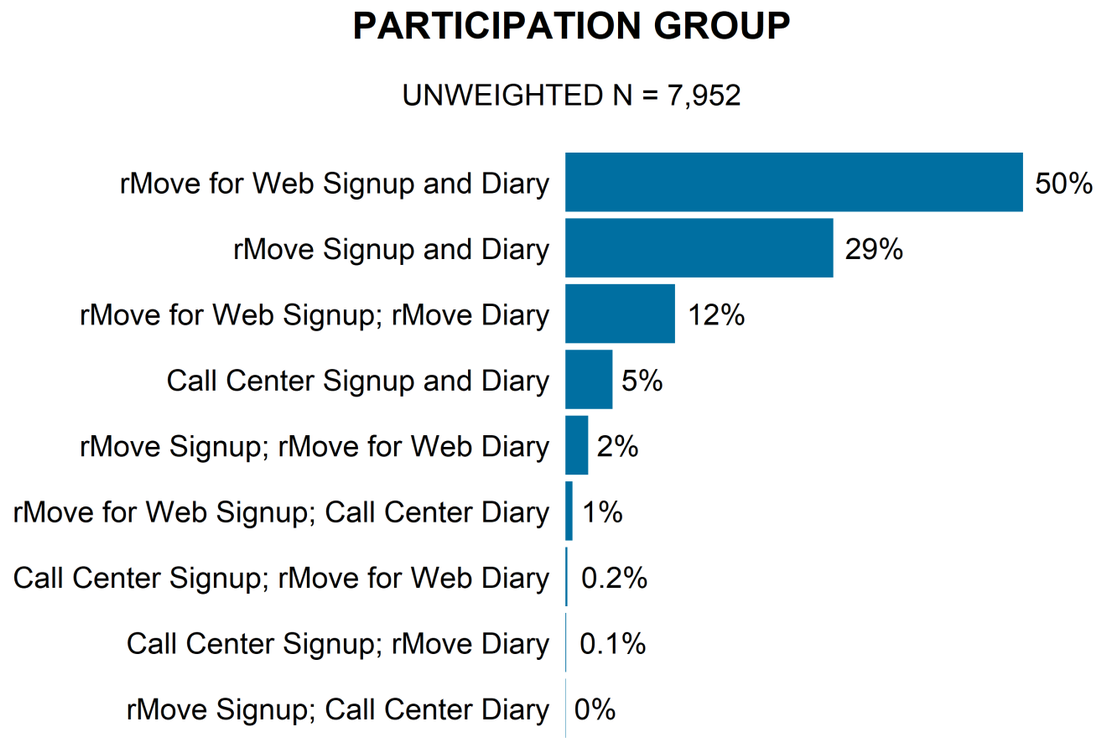
Trip Diary Participation:

- **52% completed online (rMove for Web)**
- **41% completed via smartphone app (rMove)**
- **6% completed via call center**

Call center participants are more likely to be over age 65 compared to other participation modes.

63% of call center participants make under $50,000 per year.

Call center and online participants are more likely to decline reporting household income in comparison to smartphone participants.



Survey Results Overview

- Sample Profile
- Work and School Travel
- Trip Behavior
- Vehicle Use and Behavior
- Transit Use and Behavior
- Pedestrian and Micromobility Behavior
- New Mobility Services
- Equity Analysis

7,952	15,805	23,857	84,254
HOUSEHOLDS	**PERSONS**	**TRAVEL DAYS**	**TRIPS**
Weighted Records	*Weighted Records*	*Weighted Records*	*Weighted Records*

- ***All figures and charts in this presentation are weighted to represent the population of the study region unless noted otherwise.***
- ***Data at the trip and day levels are weighted to represent an average weekday (Mon, Tues, Weds, or Thurs).***
- ***Trip and day records from incomplete days or weekend days (Fri, Sat, Sun) were not weighted.***

Sample Profile

Sample Profile Overview

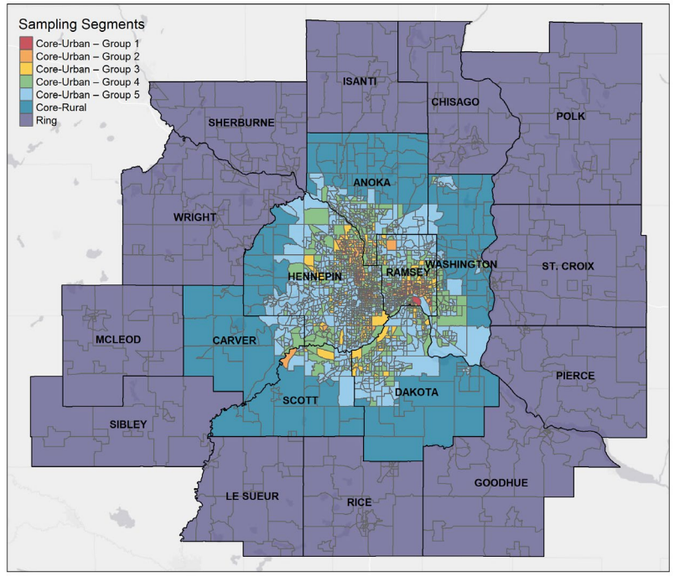
Demographic Breakdown		Unweighted Sample	Weighted Sample	ACS 5-Year Average (2015–2019)
Age	Under 18	16%	24%	24%
	18 – 34	24%	21%	23%
	35 – 64	41%	40%	40%
	65 and older	19%	15%	14%
Gender	Female	53%	49%	50%
	Male	47%	51%	50%
Race	American Indian or Alaska Native	1%	1%	1%
	Asian	5%	7%	6%
	Black or African American	5%	6%	8%
	Native Hawaiian or other Pacific Islander	0%	0%	0%
	White	85%	80%	77%
	Other	1%	2%	5%
	Two Races or More	3%	4%	3%
Ethnicity	Hispanic, Latino, or Spanish Origin	3%	5%	6%
	Not of Hispanic, Latino, or Spanish Origin	97%	95%	94%
Income	Under $25,000	17%	12%	13%
	$25,000-$49,999	19%	16%	18%
	$50,000-$99,999	33%	31%	31%
	$100,000 or more	30%	41%	39%
Employment Status	Employed	72%	77%	88%
	Not employed	28%	23%	12%

Note: If "Prefer not to answer" was an answer option, respondents who selected that answer were excluded from these calculations.

Survey Response by County

Survey response exceeded target across the region.

– Response was slightly higher in core counties and slightly lower in the surrounding ring counties.

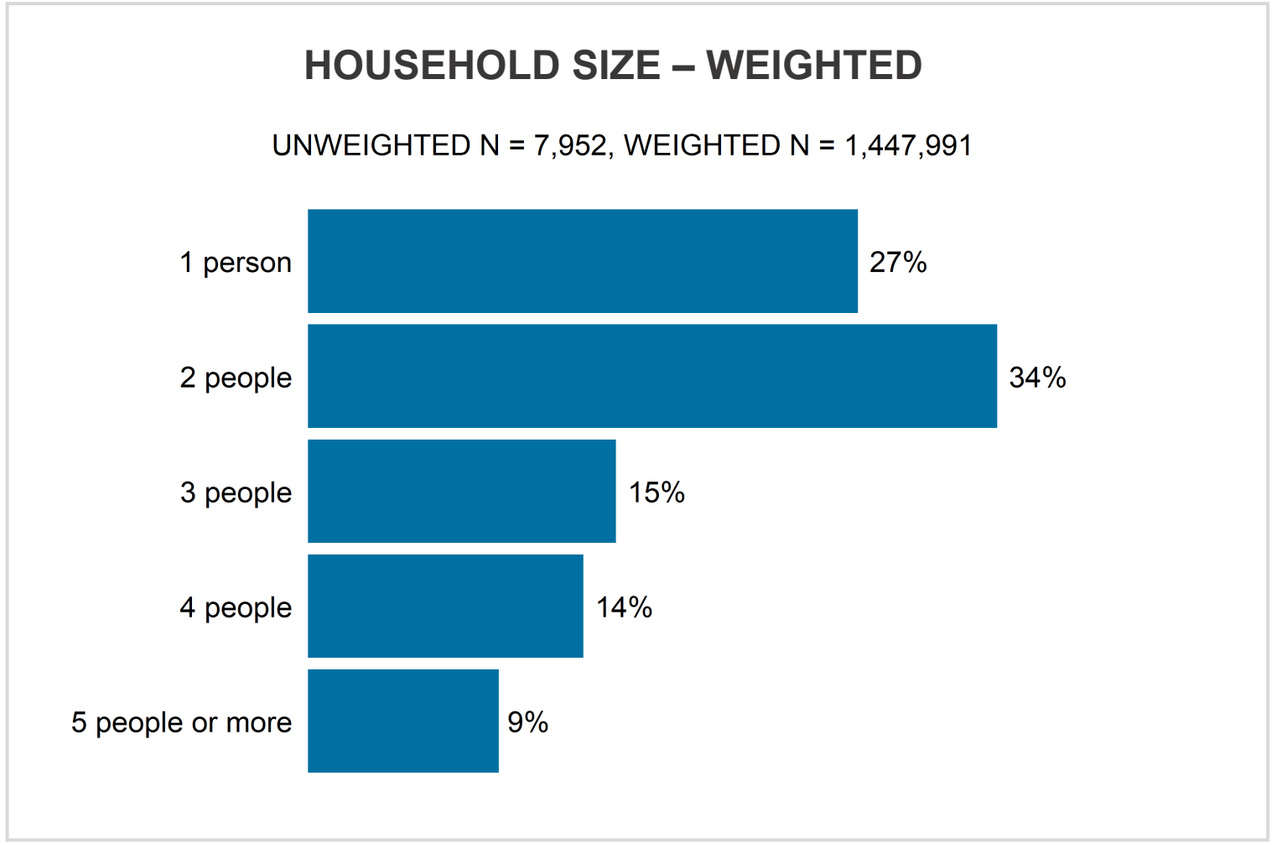


County	Unweighted Sample	Weighted Sample	Unweighted Share	Weighted Share
Anoka, MN (core)	**450**	**128,563**	**6%**	**9%**
Carver, MN (core)	**139**	**38,317**	**2%**	**3%**
Chisago, MN	63	17,757	1%	1%
Dakota, MN (core)	653	161,692	8%	11%
Goodhue, MN	60	13,732	1%	1%
Hennepin, MN (core)	**3,573**	**508,723**	**45%**	**35%**
Isanti, MN	41	17,440	1%	1%
Le Sueur, MN	47	14,824	1%	1%
McLeod, MN	39	10,948	0%	1%
Ramsey, MN (core)	**1,804**	**209,891**	**23%**	**14%**
Rice, MN	81	24,834	1%	2%
Scott, MN (core)	158	47,952	2%	3%
Sherburne, MN	102	40,734	1%	3%
Sibley, MN	8	3,309	0%	0%
Washington, MN (core)	**377**	**94,447**	**5%**	**7%**
Wright, MN	142	46,490	2%	3%
Pierce, WI	49	18,443	1%	1%
Polk, WI	58	18,217	1%	1%
St Croix, WI	108	31,676	1%	2%
Total	**7,952**	**1,447,991**	**100%**	**100%**

Household Size

The survey had a higher share of one-person and two-person households participate*.

The weighting process adjusted for this discrepancy which is commonly seen in household travel surveys.

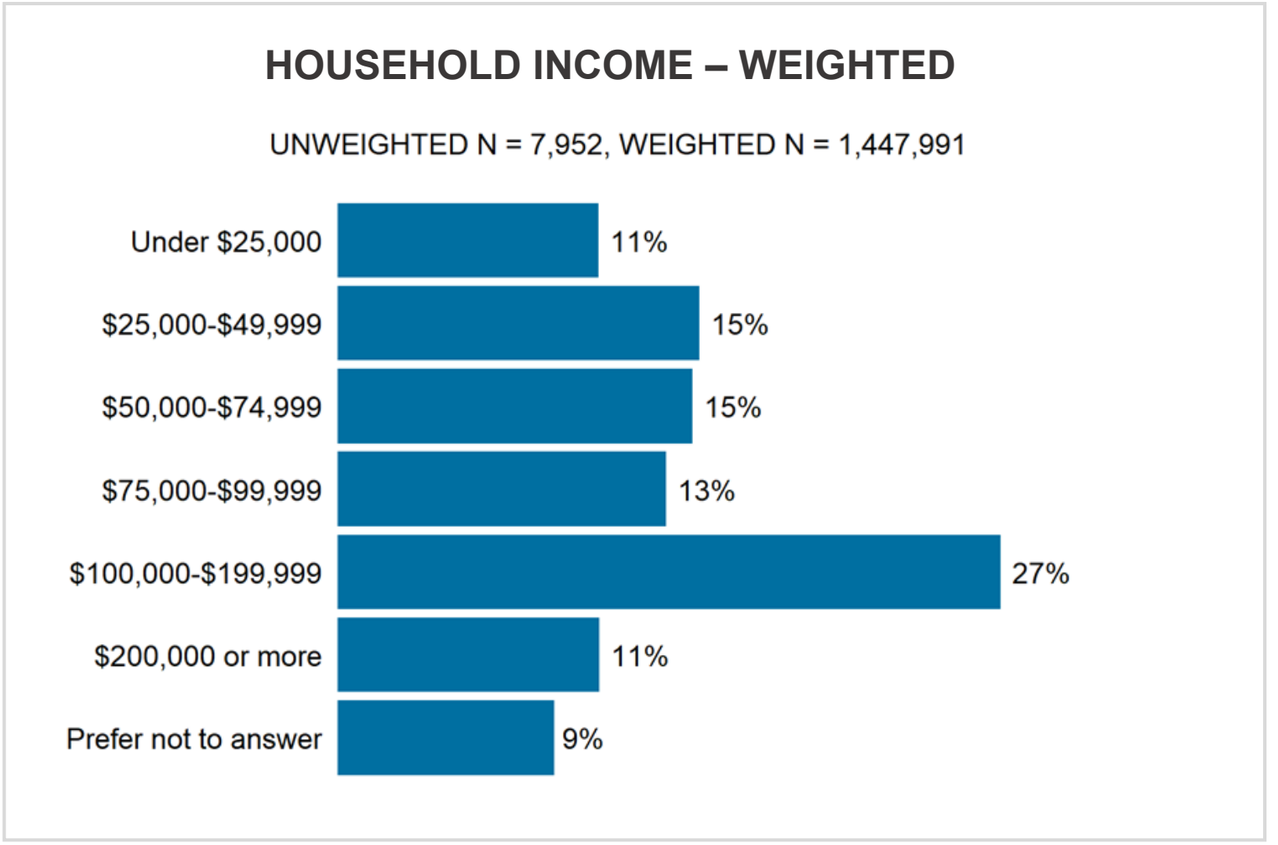


Unweighted Response: 1 person = 41% and 2 person = 27%

Household Income

The survey had a higher share of lower-income (i.e., 50K or under) households participate in the survey than are found in the region*.

This indicates that differential incentives and supplemental sampling efforts were successful.

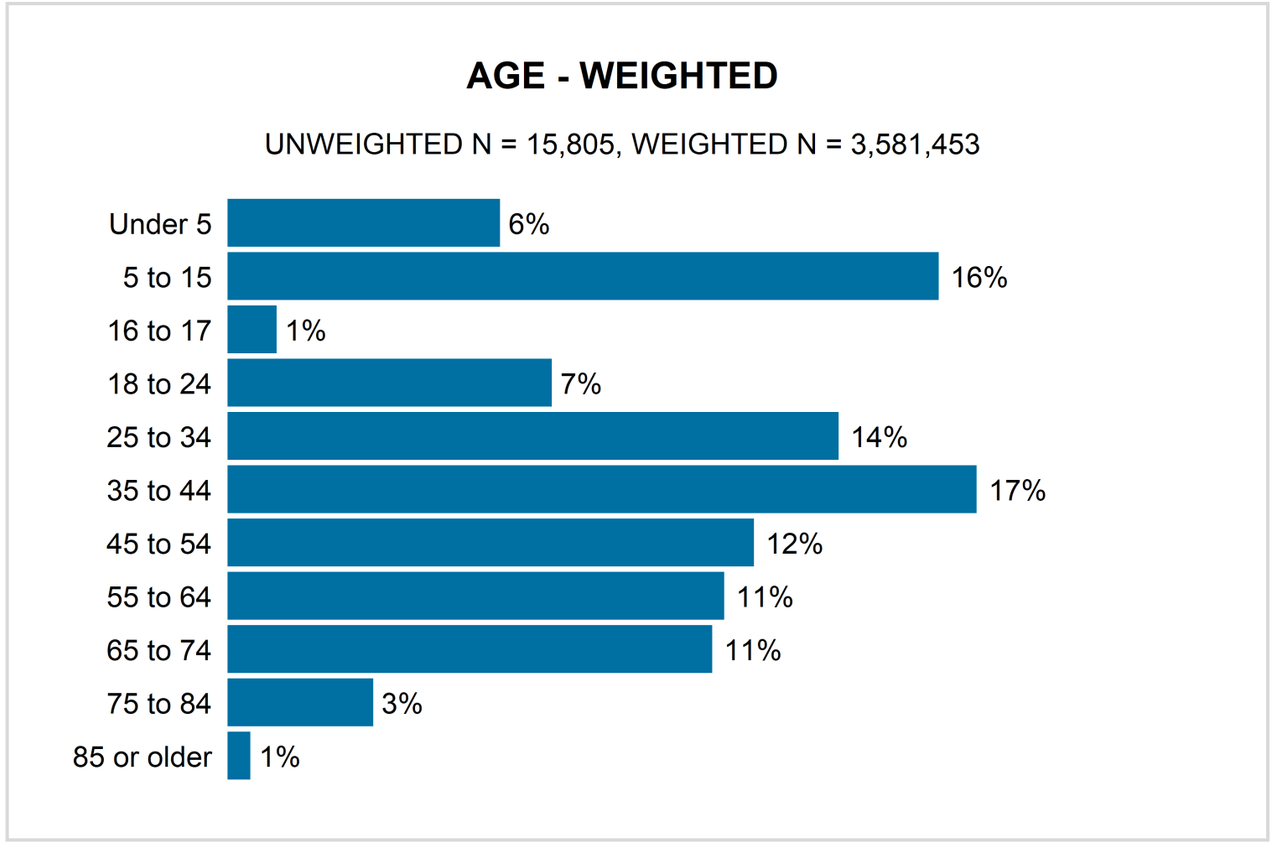


Unweighted Response: Under $25,000 = 16% and $25,000-$49,999 = 18%

Age

The survey had a lower share of persons under 24 years old and a higher share of persons over 55 years old represented in the survey*.

The weighting process adjusted for this discrepancy which is commonly seen in household travel surveys.



**Unweighted Response: Under 24 = 22% (compared to 30% weighted) and over 55 = 33% (compared to 26% weighted)*

Race and Ethnicity

The 2021-2022 TBI implemented measures to improve upon representation in terms of race and ethnicity over Wave 1.

18% of respondents in the unweighted 2021-2022 sample identify as People of Color in comparison to 27% of the weighted sample. Notable improvements were made in through supplemental sampling efforts.

Approximately 5% of respondents refused to respond to the combined race/ethnicity question.*

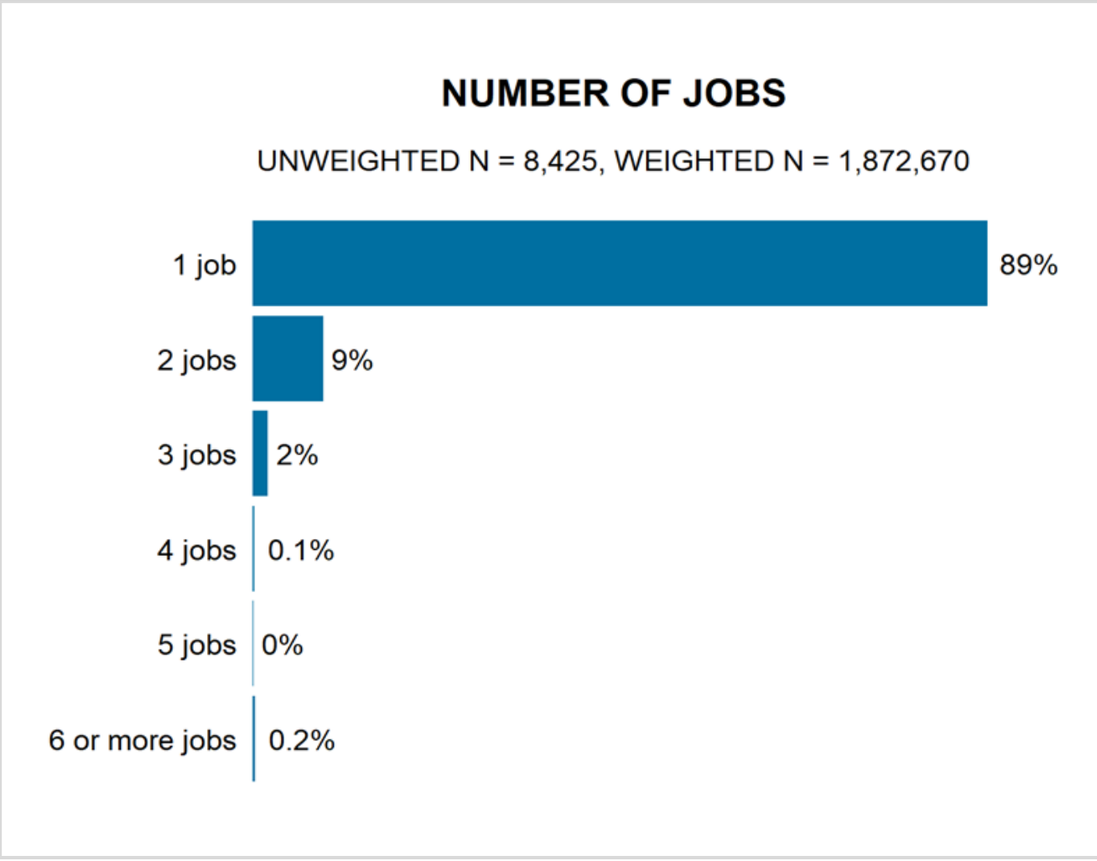
	Unweighted Share	Weighted Share
Black or African American	5.9%	6.1%
American Indian or Alaska Native	1.7%	2.2%
Asian	5.5%	7.7%
Native Hawaiian or other Pacific Islander	0.2%	0.4%
Hispanic, Latino, or Spanish origin	3.0%	5.3%
Middle Eastern or North African	0.4%	0.6%
White	81.5%	73.4%
Don't know	0.2%	0.3%
Prefer not to answer	5.0%	8.2%
Other race, ethnicity, or origin	1.1%	1.8%

**Race/Ethnicity were imputed during the weighting process, for children and for adults who preferred not to answer these questions.*

Employment Status

- **Overall, 73% of residents aged 16 or older are employed.**
- 23% are not employed and not looking for work (e.g., retired, student, stay-at-home parent).
- 3% are unemployed and looking for work.
- 1% hold unpaid volunteer or intern positions.

11% of employed residents aged 16 or older have two or more jobs.



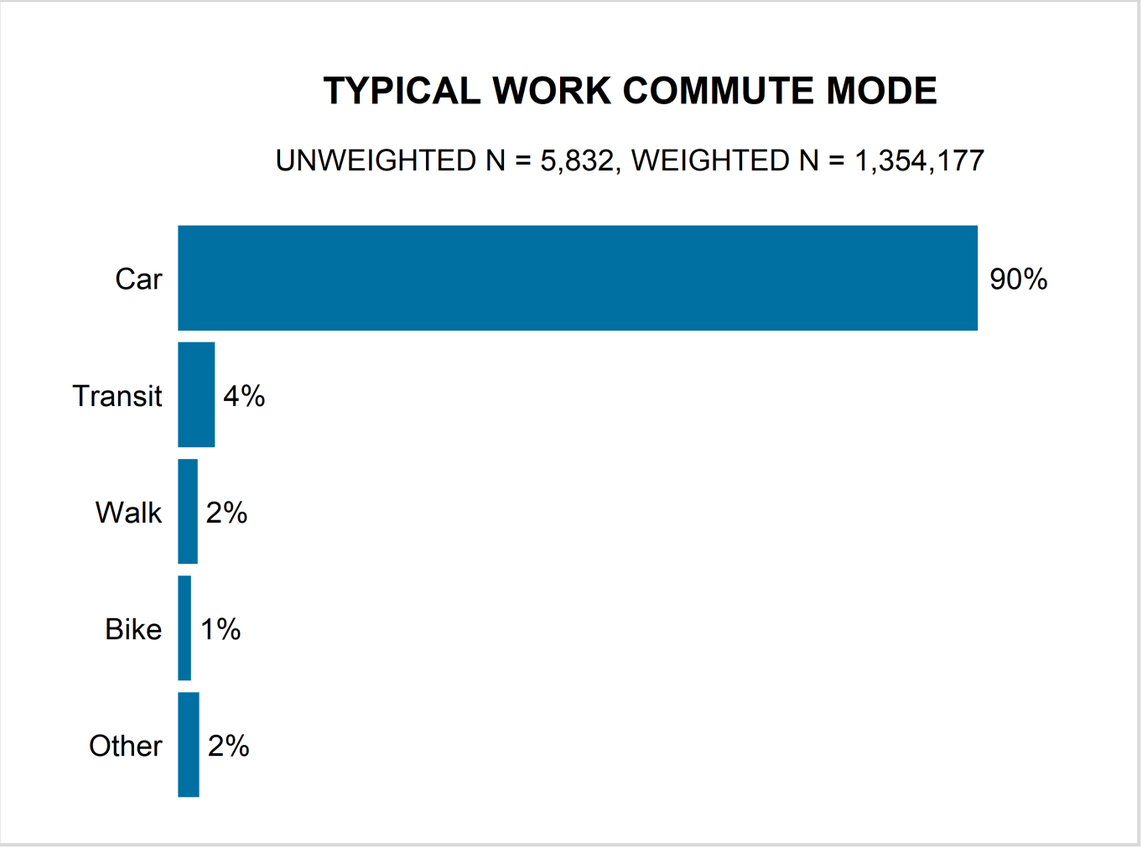
Work Travel Behavior

Work Commute Trips

Currently, most employees that travel to their workplace use a vehicle to commute.

Prior to COVID-19:

- 86% of employees who travel to work reported commuting to work via vehicle.
- 7% of employees who travel to work reported commuting to work via transit.



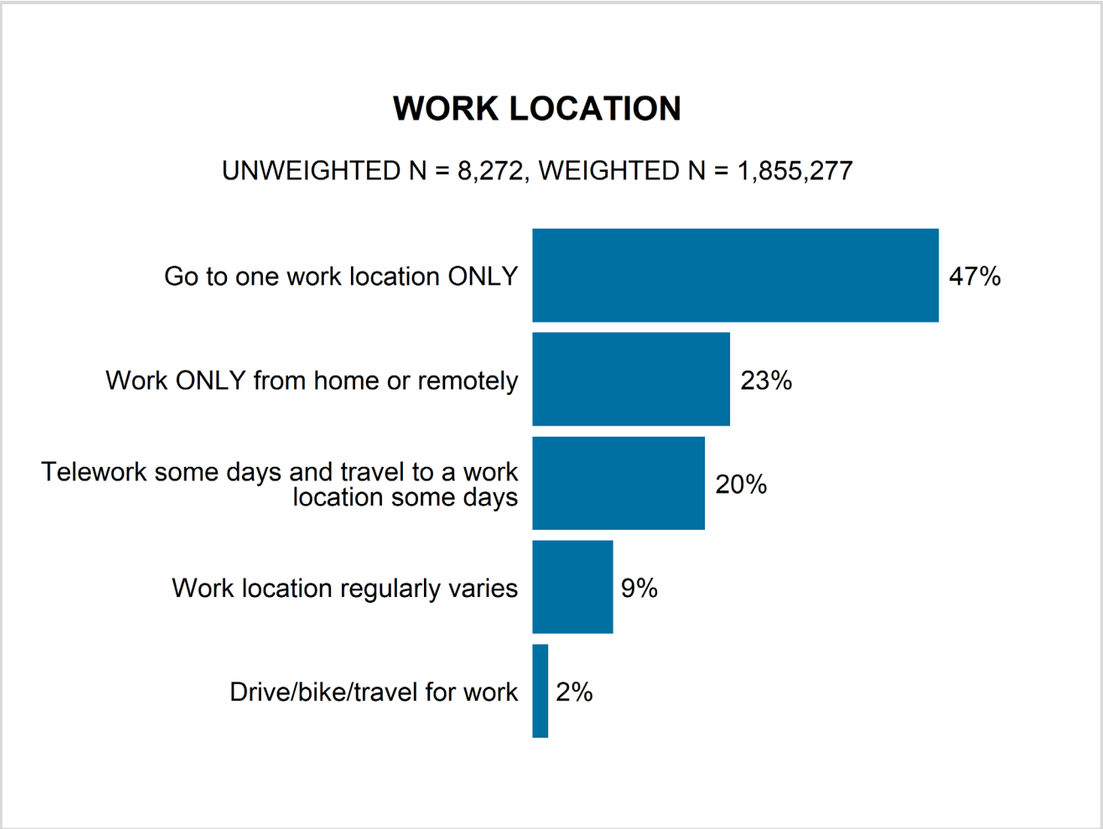
Work Location

Currently

- 47% of employees work outside their home at a single location.
- 23% work remotely all the time.
- 20% telework on some days and commute to work on some days.

Prior to COVID-19

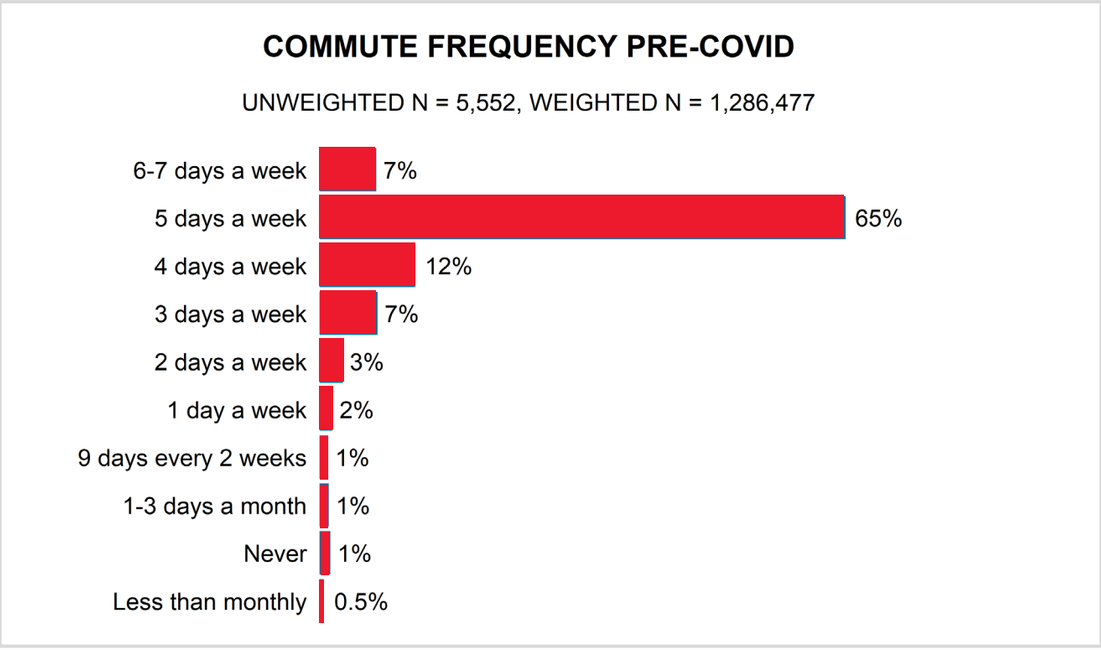
- 72% of employees worked outside their home at a single location.
- 9% worked remotely all the time.
- 10% teleworked on some days and commuted to work on some days.

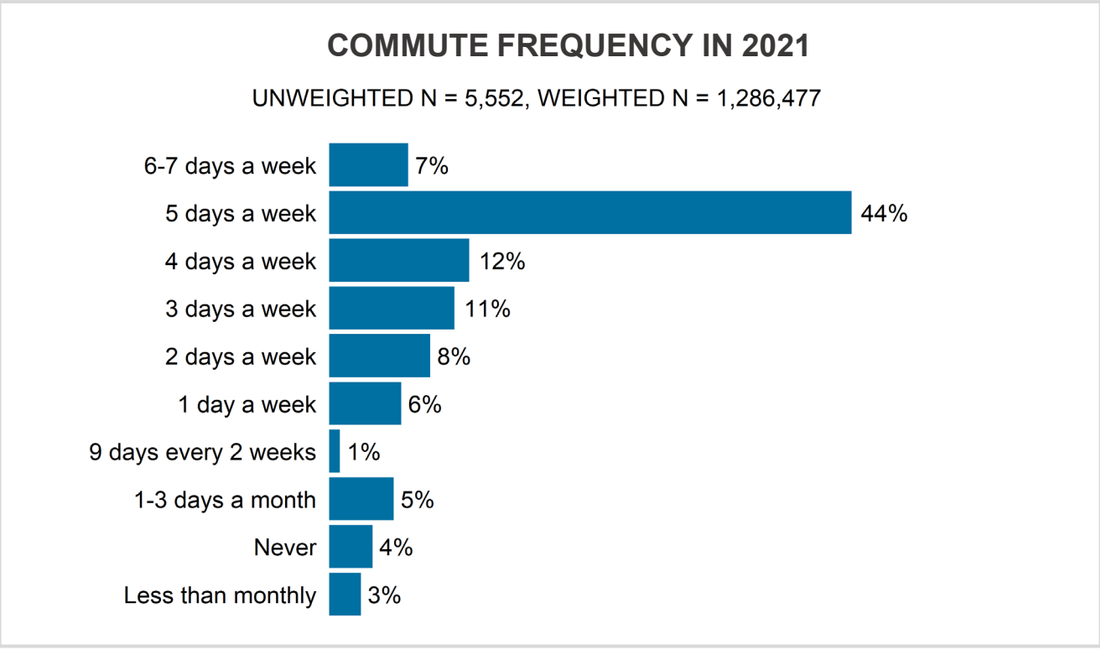


Commute Frequency

In 2021, 44% of employees that travel to work report commuting 5 days a week.

Pre-COVID, 65% of employees that travel to work reported commuting 5 days a week.

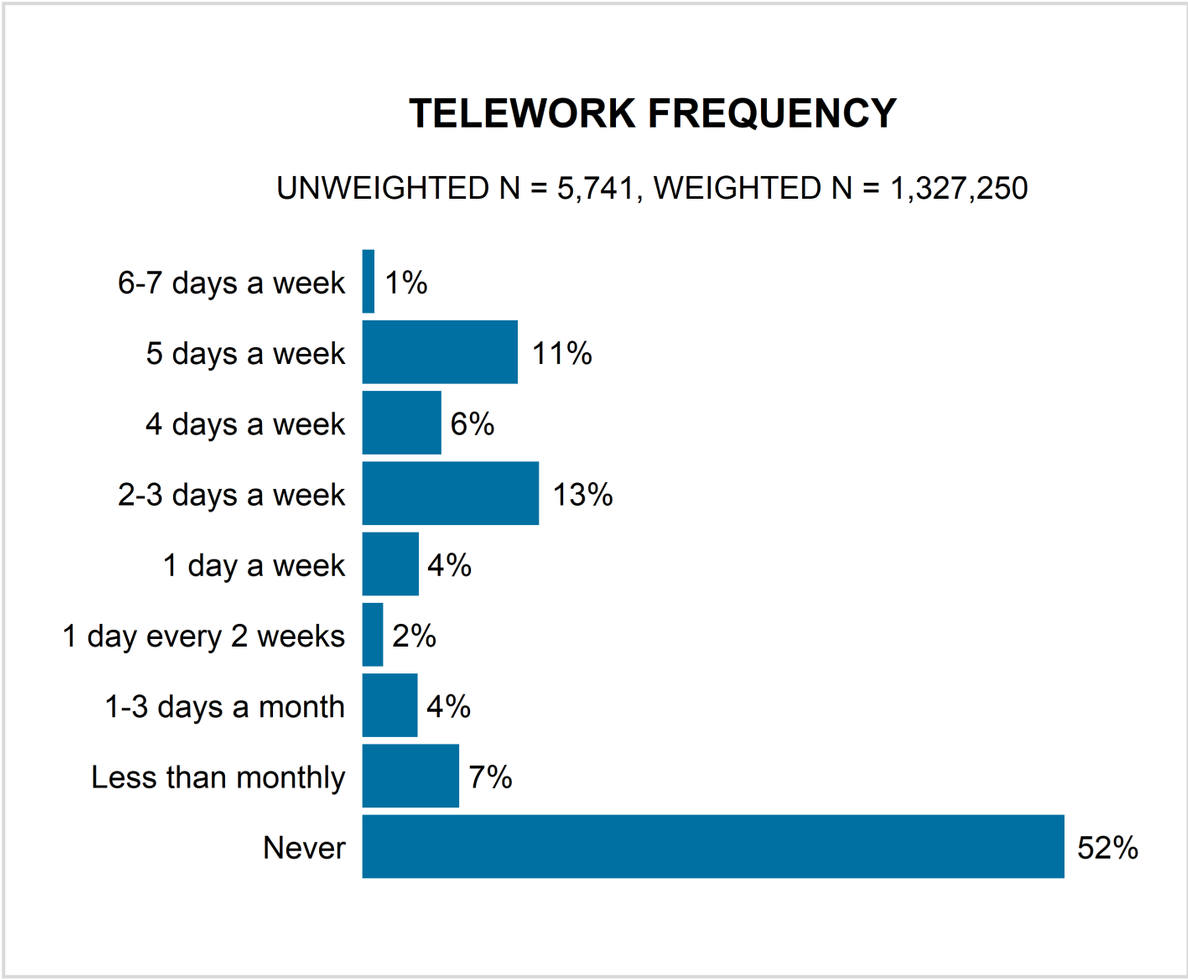




Teleworking

Currently, 41% of employees telework one or more times a month.

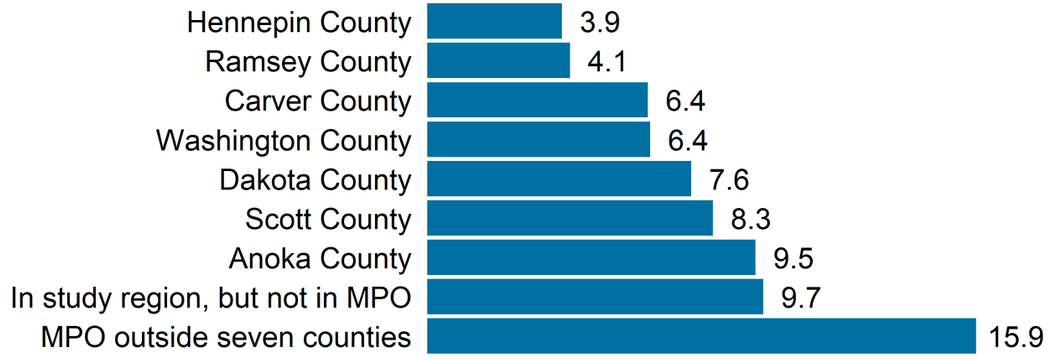
Pre-COVID, 27% of employees teleworked one or more times a month.

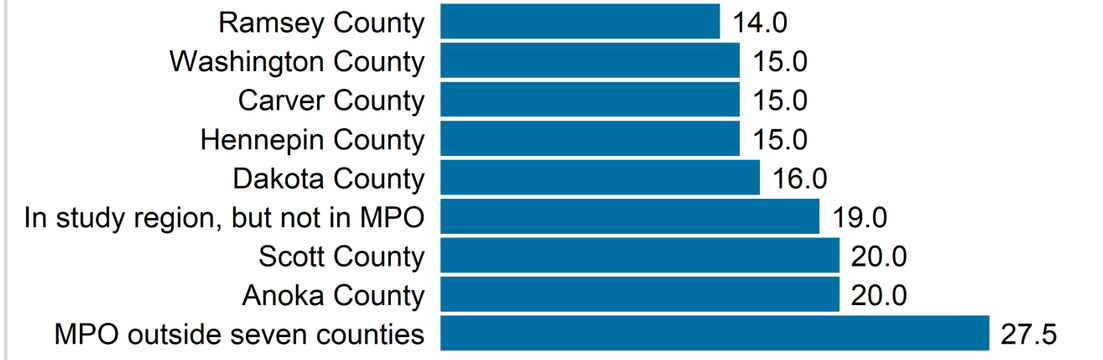


Work Commute Distance and Duration

Residents of Hennepin County have the shortest median work commute distance, while residents who live outside the MPO region have the longest at 15.9 miles.

Residents of Ramsey County have the shortest median work commute duration, while residents who live outside the MPO region have the longest at 27.5 minutes.





Trip Behavior

Daily Trip Rate

REGIONAL AVERAGE WEEKDAY TRIP RATE FOR ADULTS

2018-2019		2021-2022
4.1	➡	**3.6**
trips per day		**trips per day**

Data at the trip and day levels are weighted to represent an average weekday (Mon, Tues, Weds, or Thurs).

Adult residents outside the MPO region tend to have lower trip rates in comparison to adults who live in the MPO region.

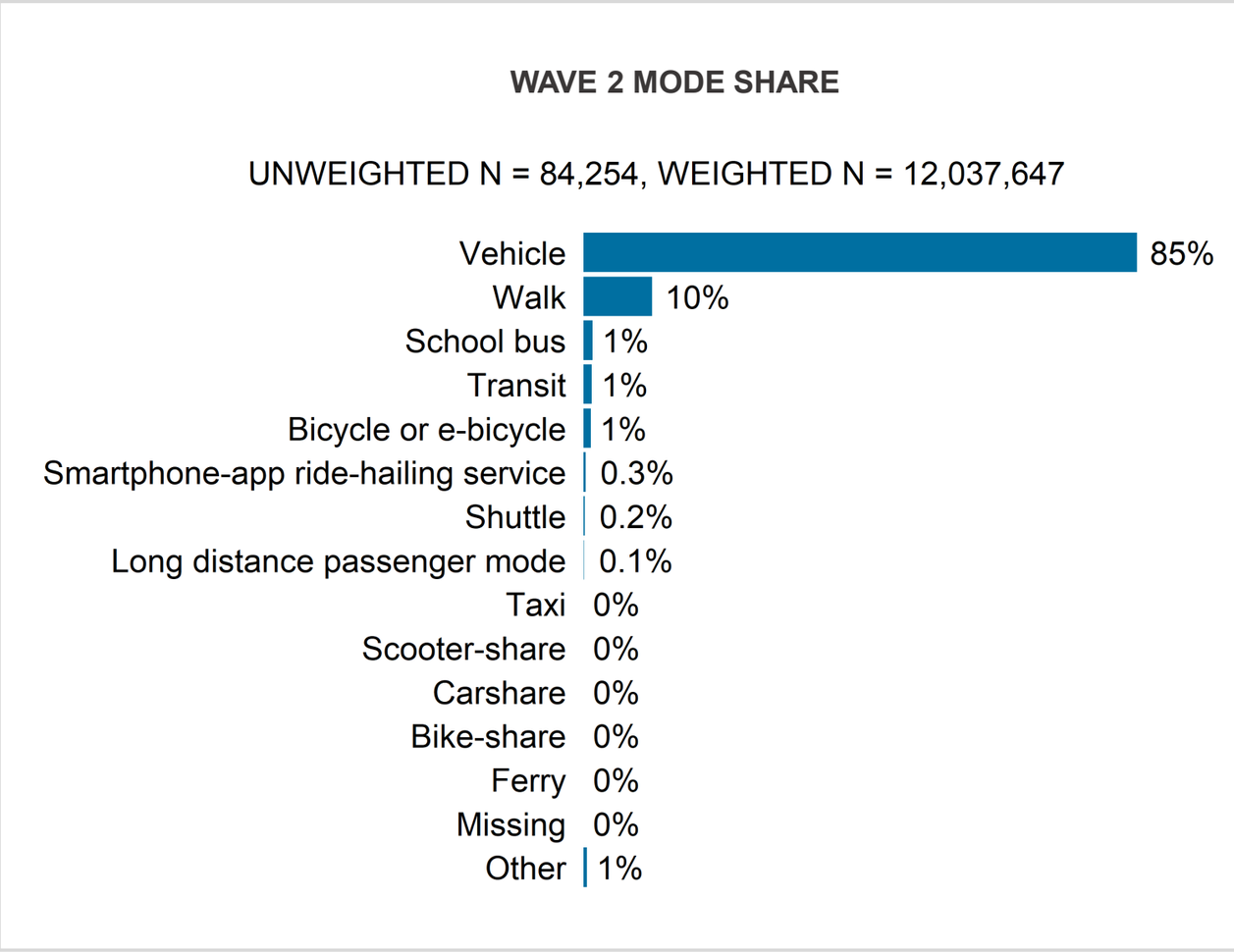
Home Region	Trip Rate
Ramsey County	3.9
Hennepin County	3.8
Scott County	3.7
Washington County	3.5
Anoka County	3.5
Dakota County	3.4
Carver County	3.8
MPO outside seven counties	3.7
In study region, but not in MPO	3.0

Mode Share

Over 80% of trips in both the Wave 1 (2018-2019) and Wave 2 (2021) TBI were made by vehicle.

Walking was the second most common mode of travel in both waves of the TBI.

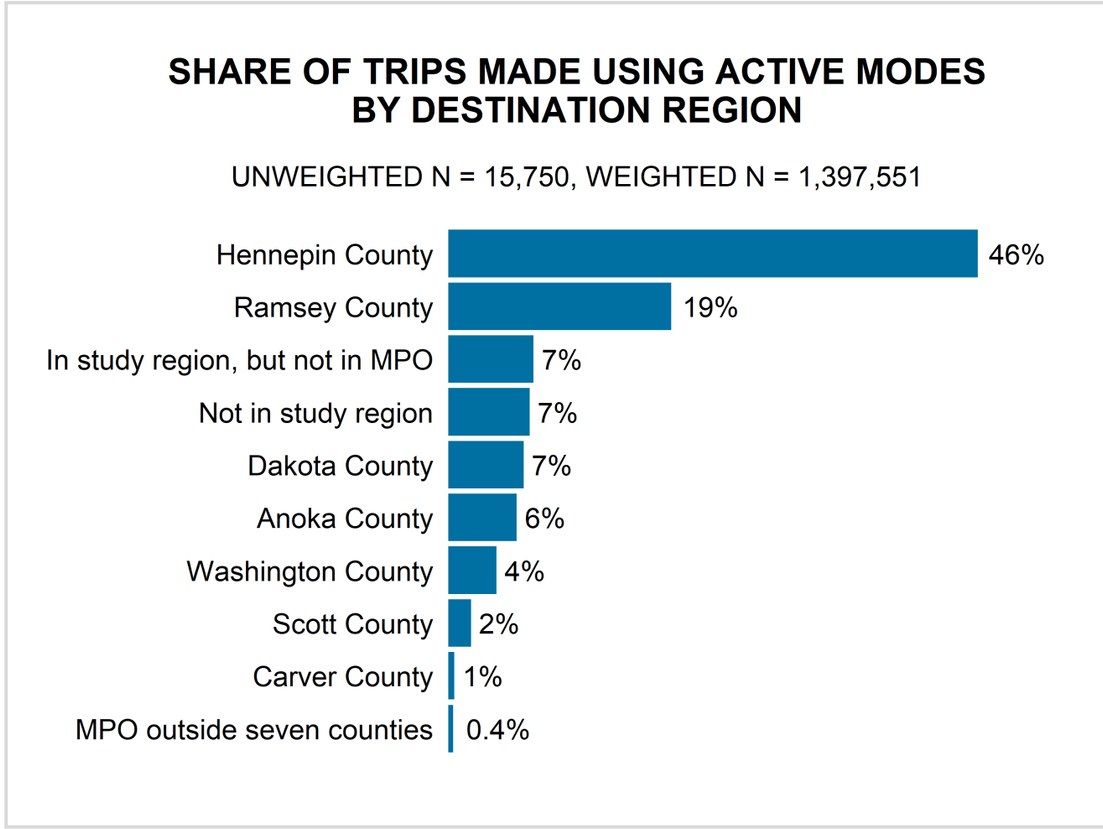
Transit trips were 3.4% of the overall mode share in Wave 1, but only make up 1% of trips in Wave 2.



Active Modes by Destination Region

Hennepin County has the highest share of trips made using active modes which include walking, biking (e-bike, bike-share, standard bike), and scooter-share.

Walking is the most common type of active travel.

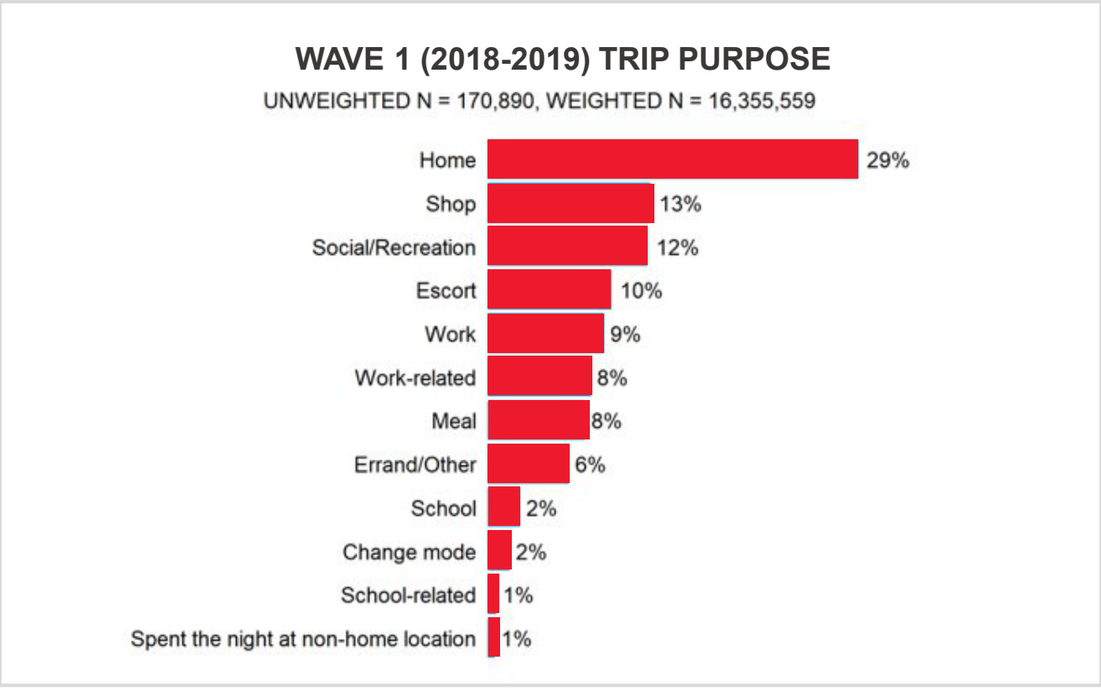


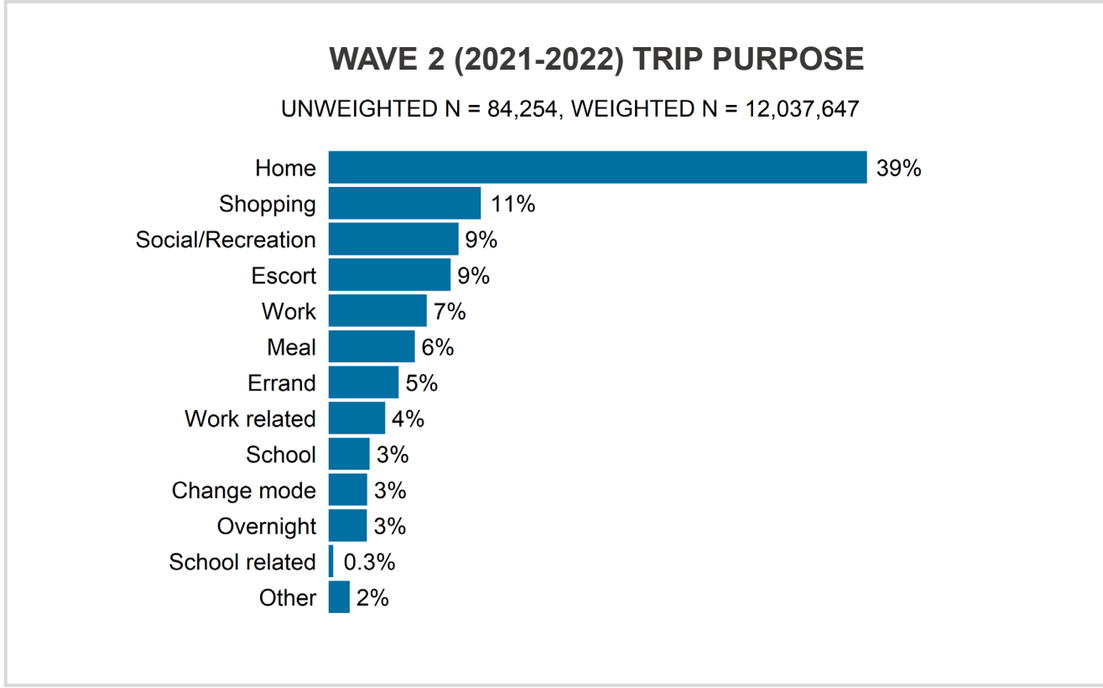
Note: This figure represents unlinked trips (e.g., includes access/egress)

Trip Destination

Excluding trips that end at home, the three most common trip purposes are related to shopping, social/recreational activities, and escorting others.

Trip purposes remain relatively consistent between Wave 1 and Wave 2.





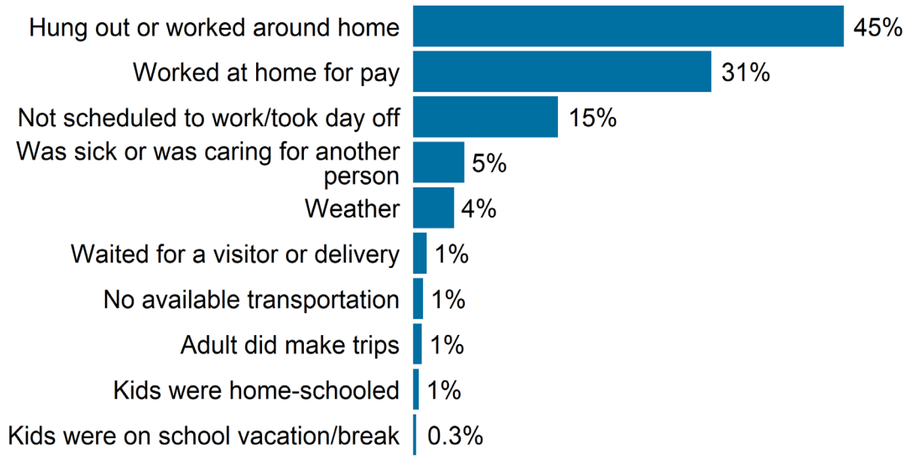
No Travel Days

On no travel days, residents are most likely to stay at home because they are hanging out or working at home.

Adults are also likely to stay at home and work, while children are likely to stay at home because they are sick.

REASON FOR NOT TAKING TRIPS ON TRAVEL DAY FOR ADULTS

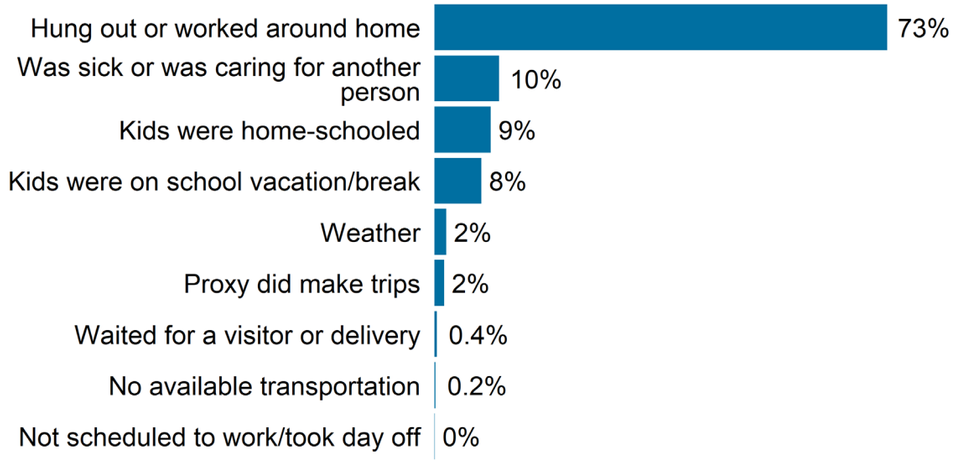
UNWEIGHTED N = 4,370, WEIGHTED N = 535,913



Note: Respondents could select more than one answer to this question.

REASON FOR NOT TAKING TRIPS ON TRAVEL DAY FOR CHILDREN

UNWEIGHTED N = 649, WEIGHTED N = 197,353



Note: Respondents could select more than one answer to this question.

Trip Replacement Behaviors

On a typical weekday, 28% of adults receive a package at home and 5% of adults have prepared food or groceries delivered to their home.

Vehicle Ownership

Ramsey and Hennepin Counties have the highest shares of zero-vehicle households in the region.

The number of electric vehicles doubled from 2018-2019 to 2021-2022 from 0.6% to 1.2%.

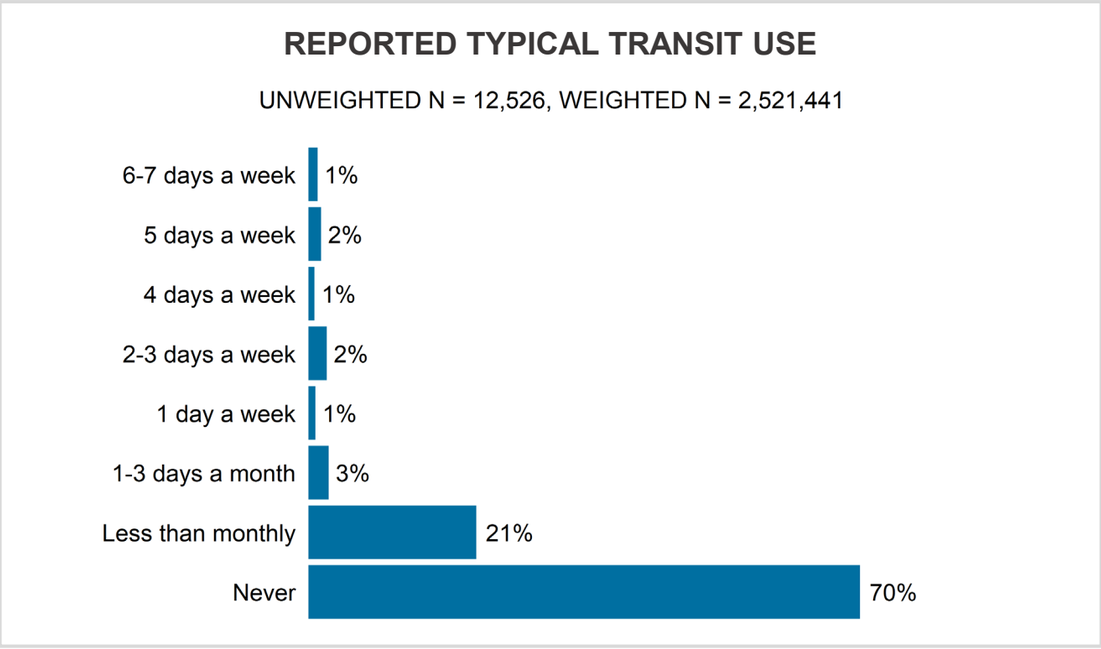
Home Region	Zero Vehicles	1 Vehicle	2 Vehicles	3 or more Vehicles
Ramsey County	13%	34%	33%	28%
Hennepin County	11%	33%	40%	16%
Scott County	< 1%	38%	33%	28%
Washington County	< 1%	29%	45%	26%
Anoka County	5%	25%	41%	28%
Dakota County	3%	28%	42%	27%
Carver County	1%	13%	58%	27%
MPO outside seven counties	3%	33%	54%	11%
In study region, but not in MPO	4%	23%	39%	34%

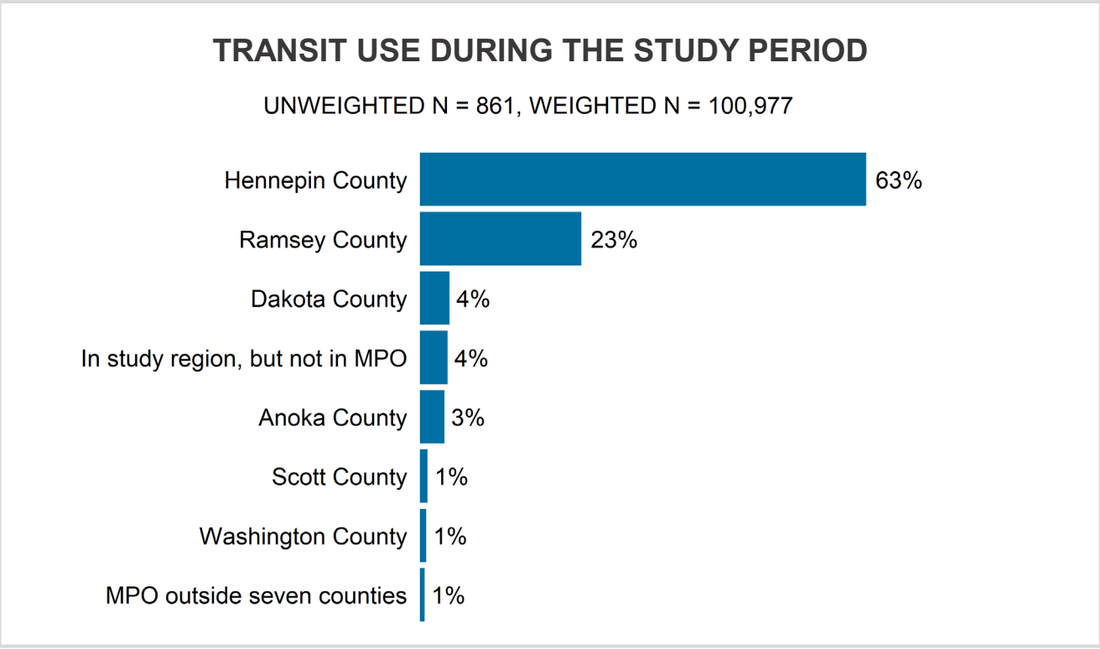
Transit Use and Behavior

Transit Use

9% of adult residents report typically using transit at least one day a week.

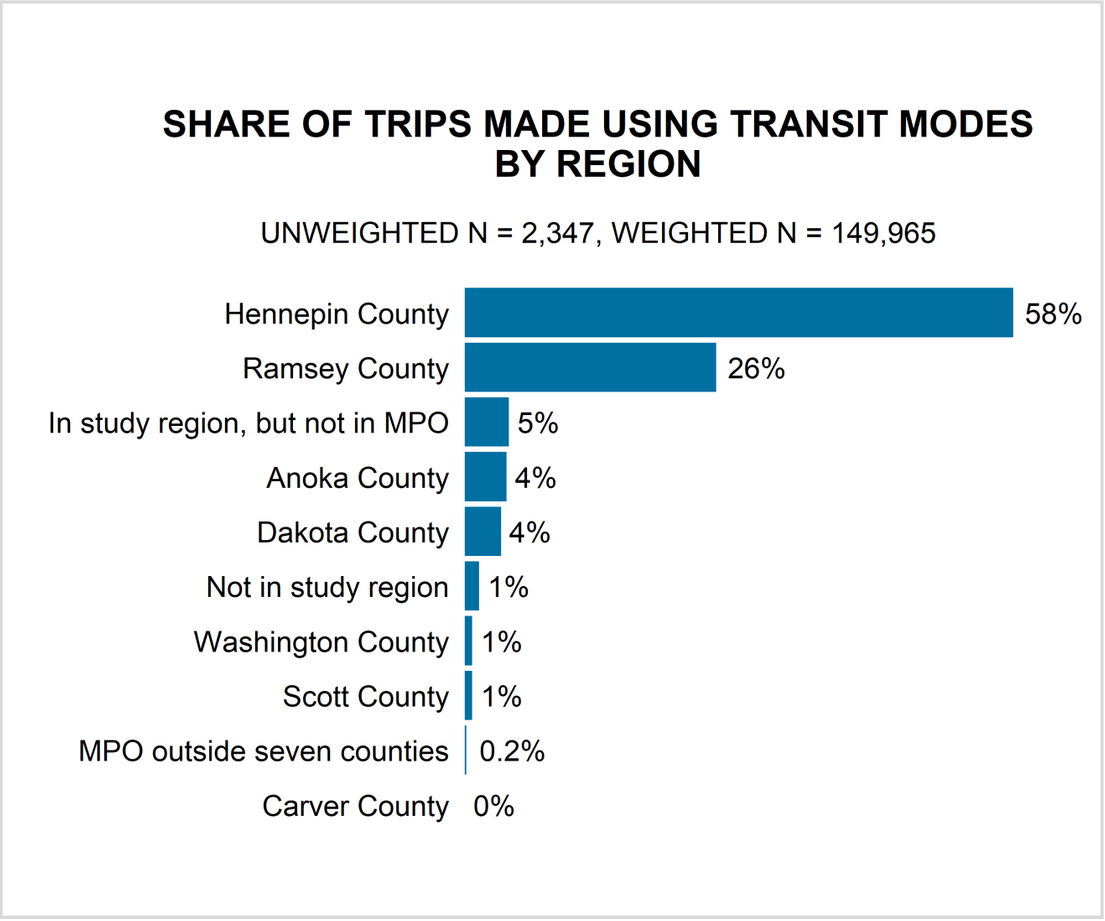
63% of the people who made at least one transit trip over the course of the study are residents of Hennepin County, while only 1% are residents of Scott County, Washington County, and MPO areas outside the seven counties.





Transit Mode Share by Region

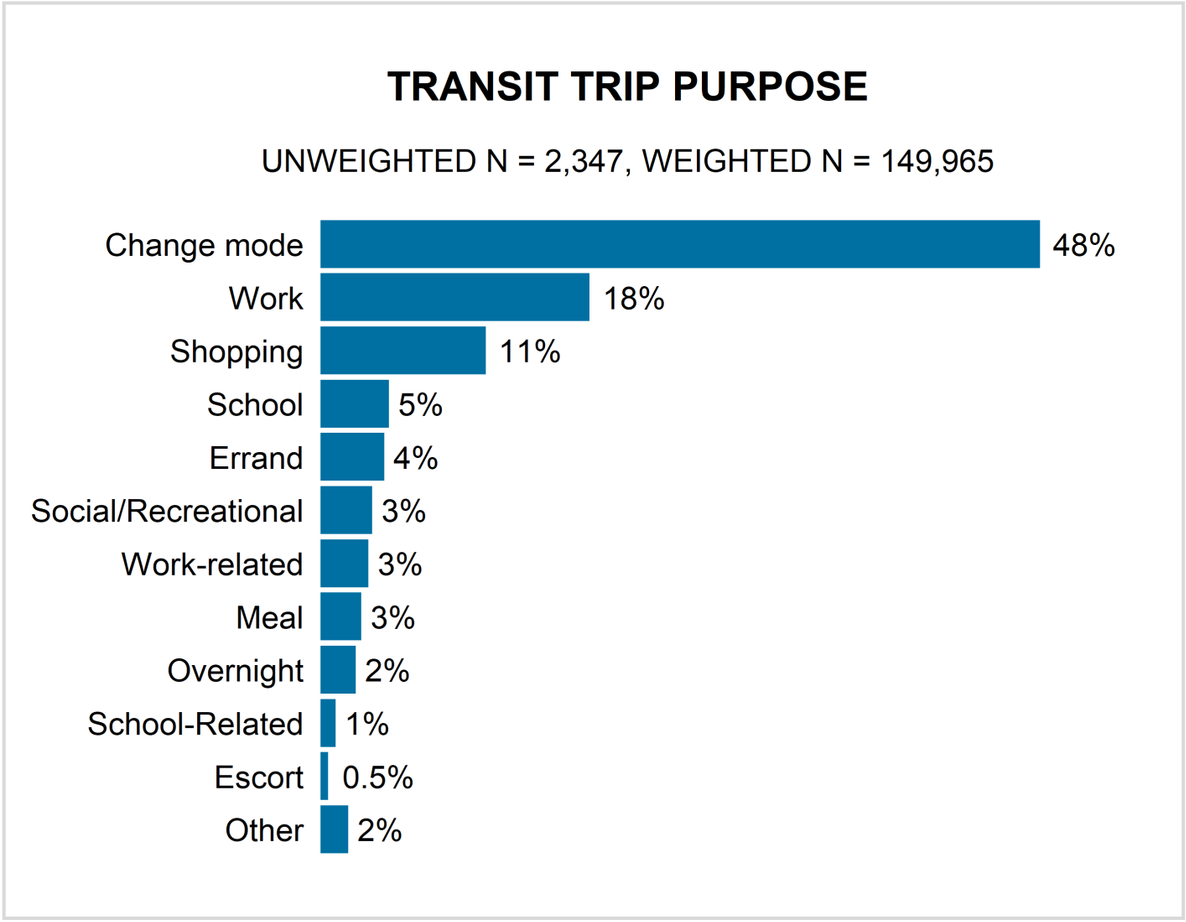
58% of trips made using transit are in Hennepin County, and 26% of transit trips occur in Ramsey County.



Transit Trip Purpose

The majority (48%) of transit trips are made for the purpose of changing modes.

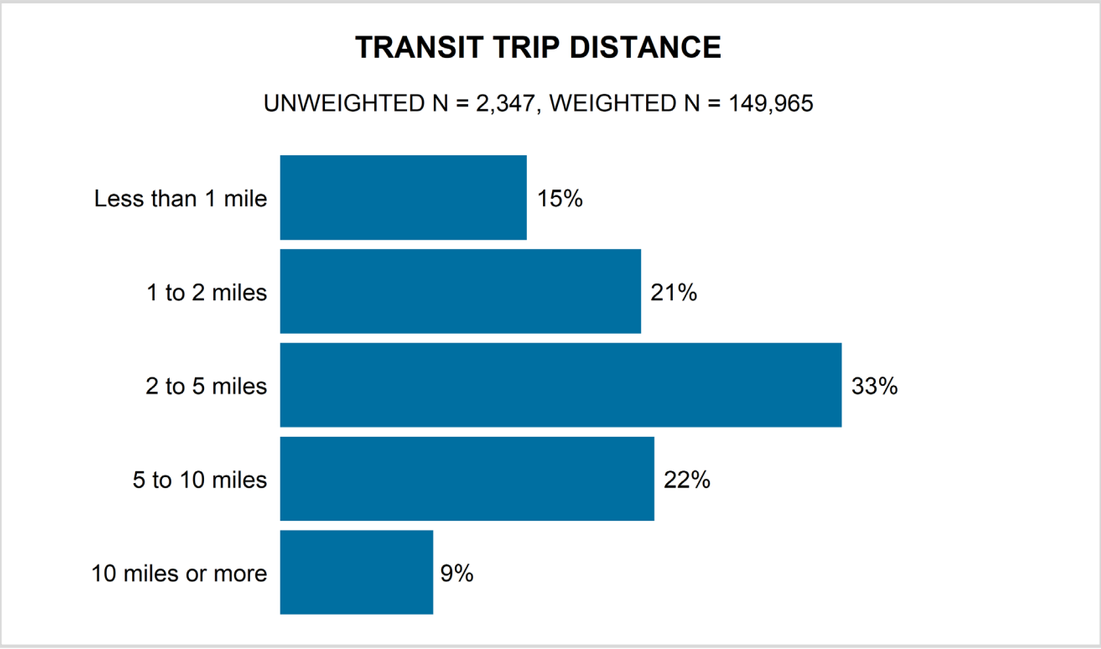
Followed by trips made for work (18%) and shopping (11%).

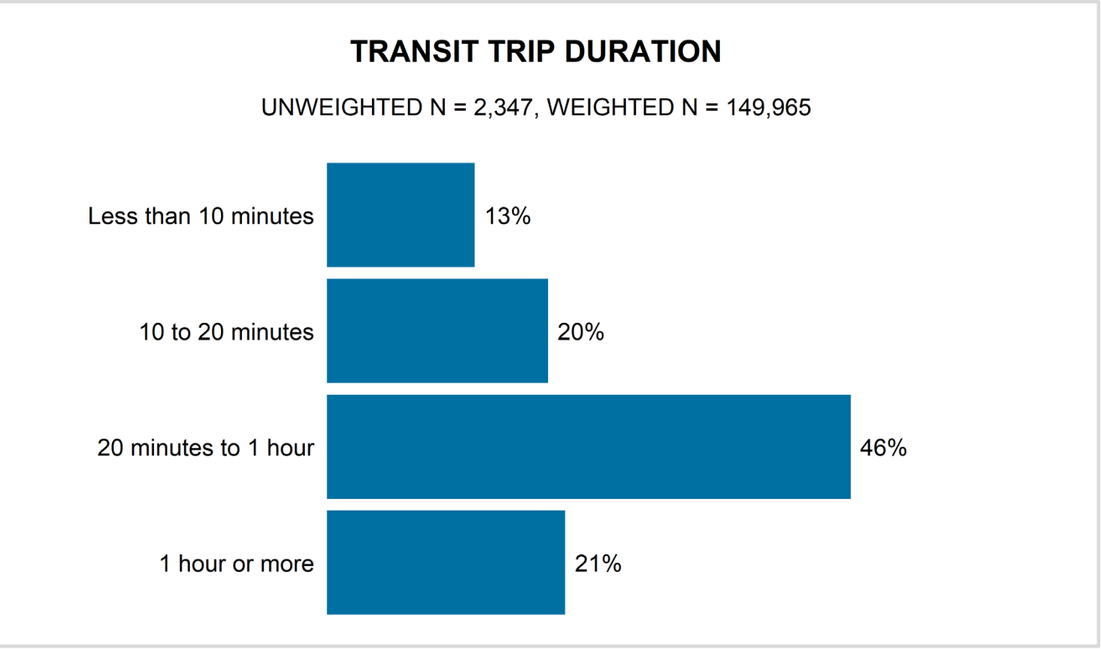


Transit Trip Distance and Duration

69% of transit trips are under 5 miles long, and 9% longer than 10 miles.

66% of transit trips are longer than 20 minutes.

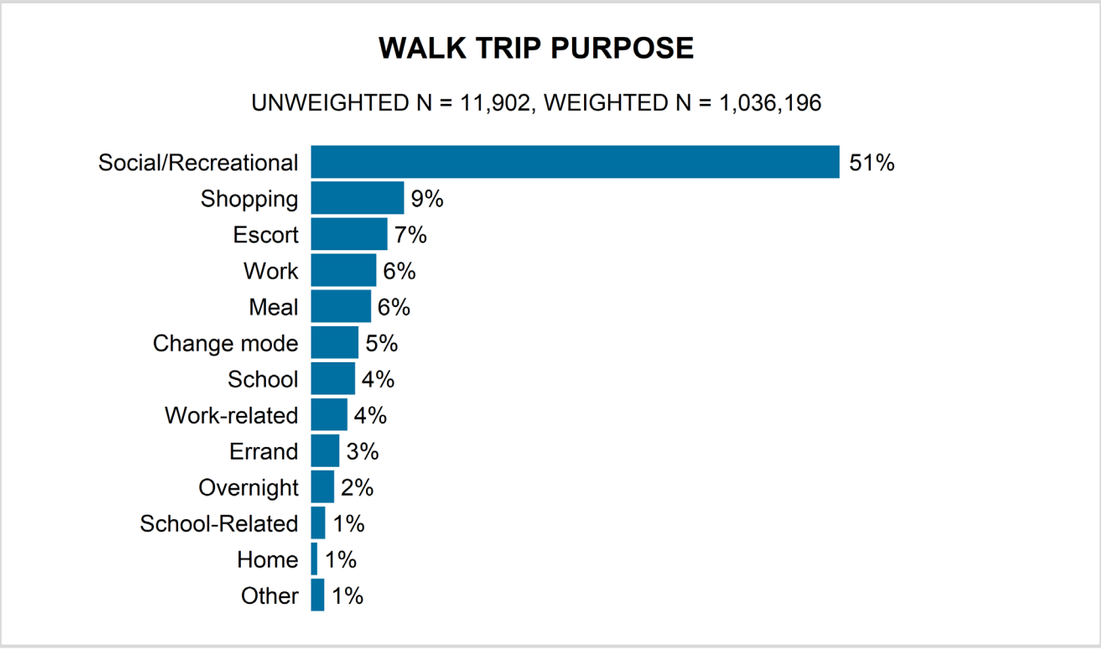


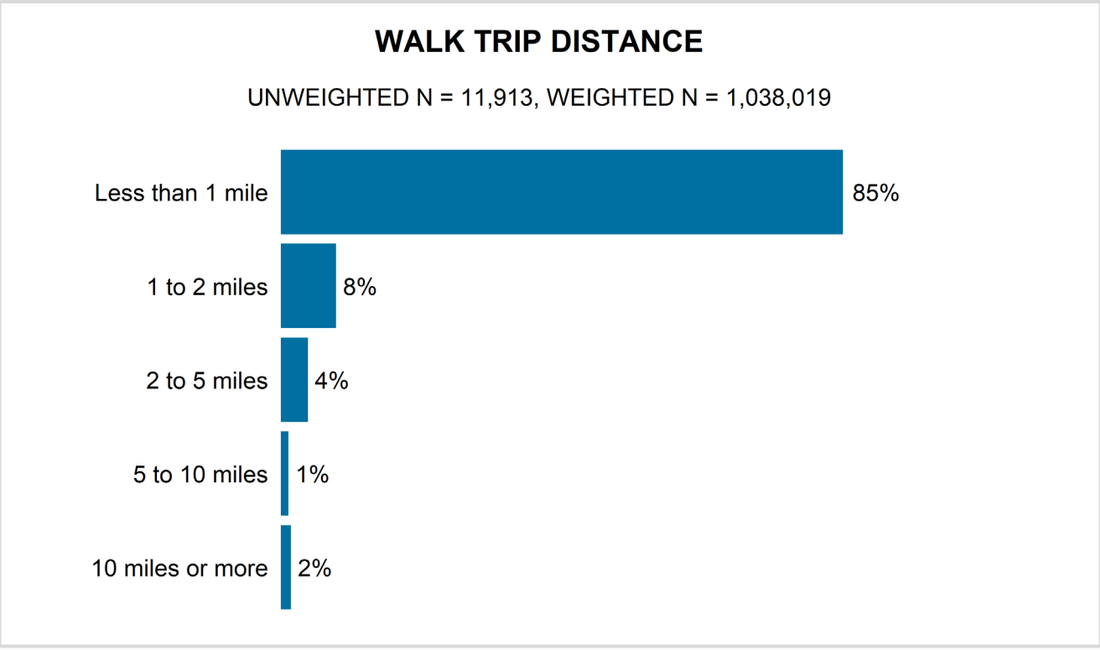


Pedestrian , Micromobility, and New Mobility Services Travel

Pedestrian Behavior

Walk trips are typically less than one mile and are most frequently made for social and recreational purposes.

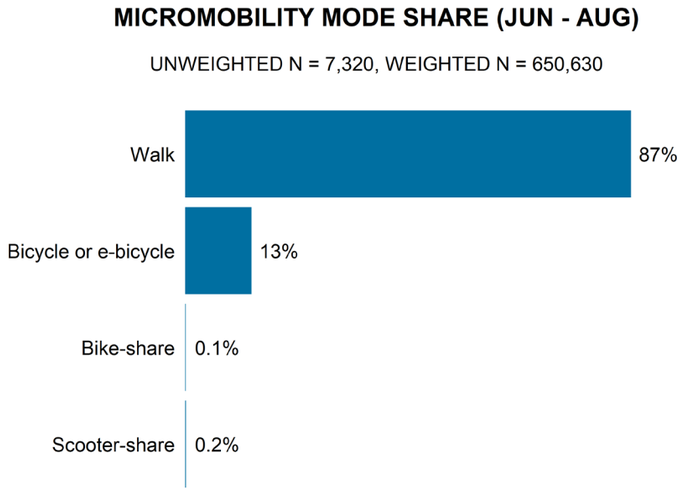


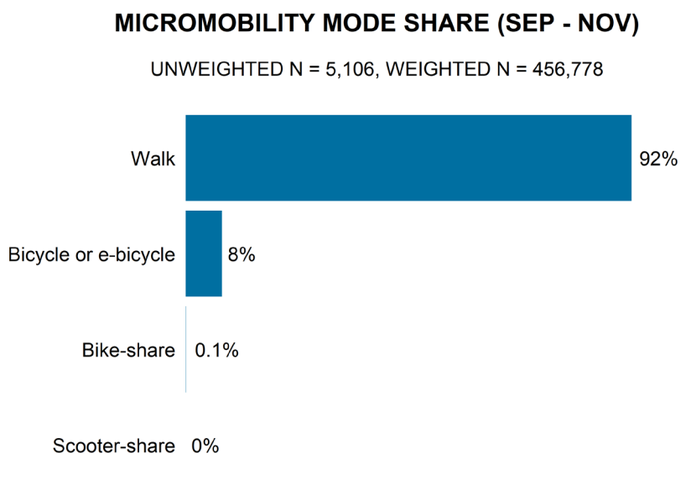


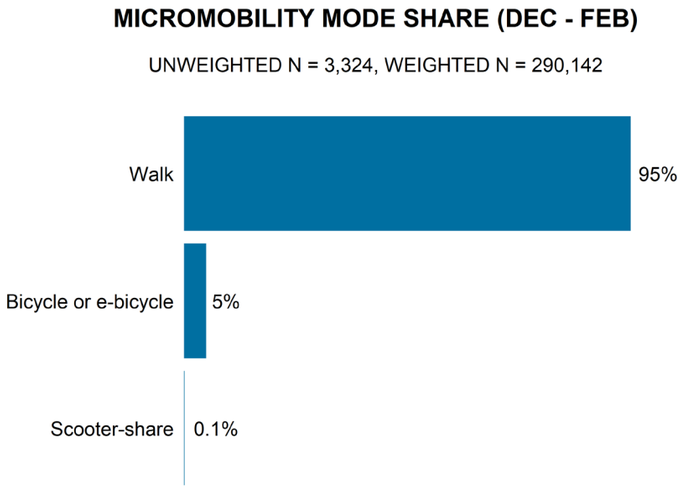
Micromobility Mode Use

Walk is the most frequent micromobility mode used by residents.

Bicycle use is higher in June through September and decreases in fall and winter.

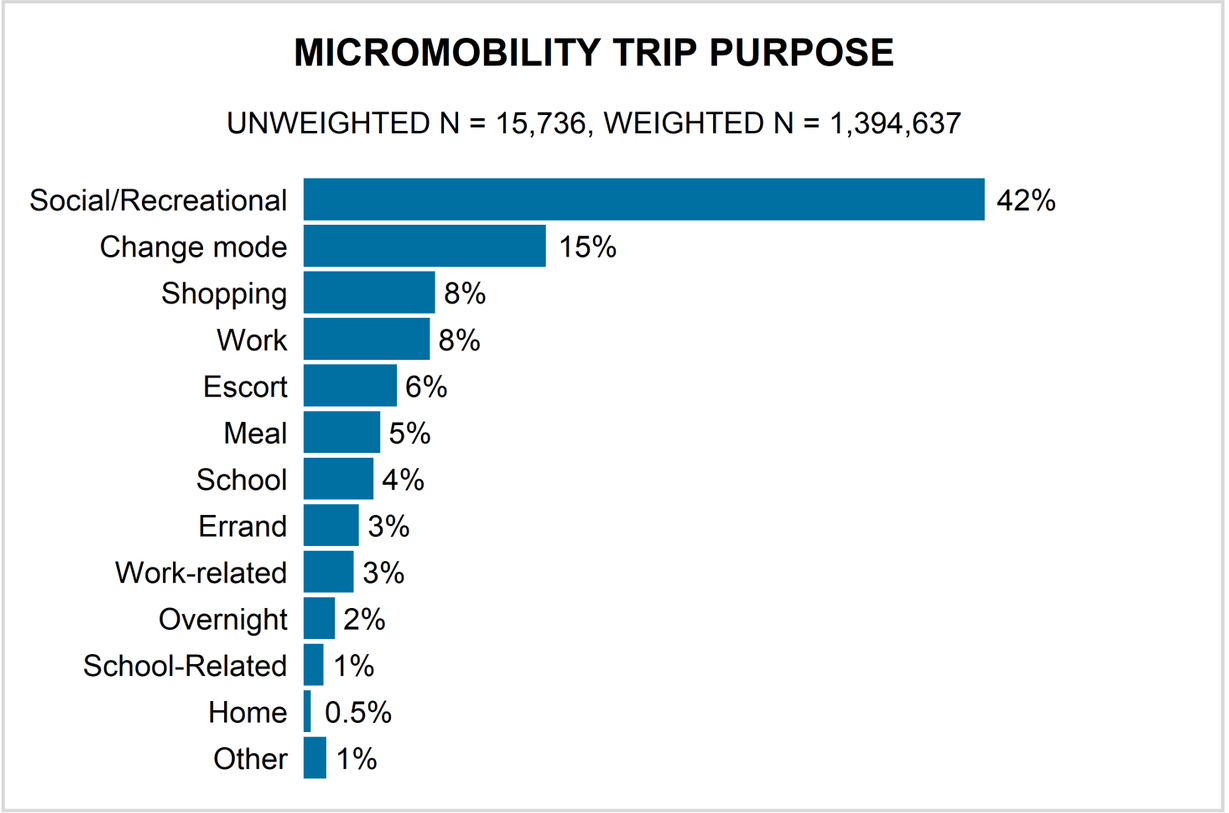






Micromobility Trips

Micromobility trips made by walking, biking, or scootering are most often made for social/recreational purposes or to change modes on multi-modal trips.

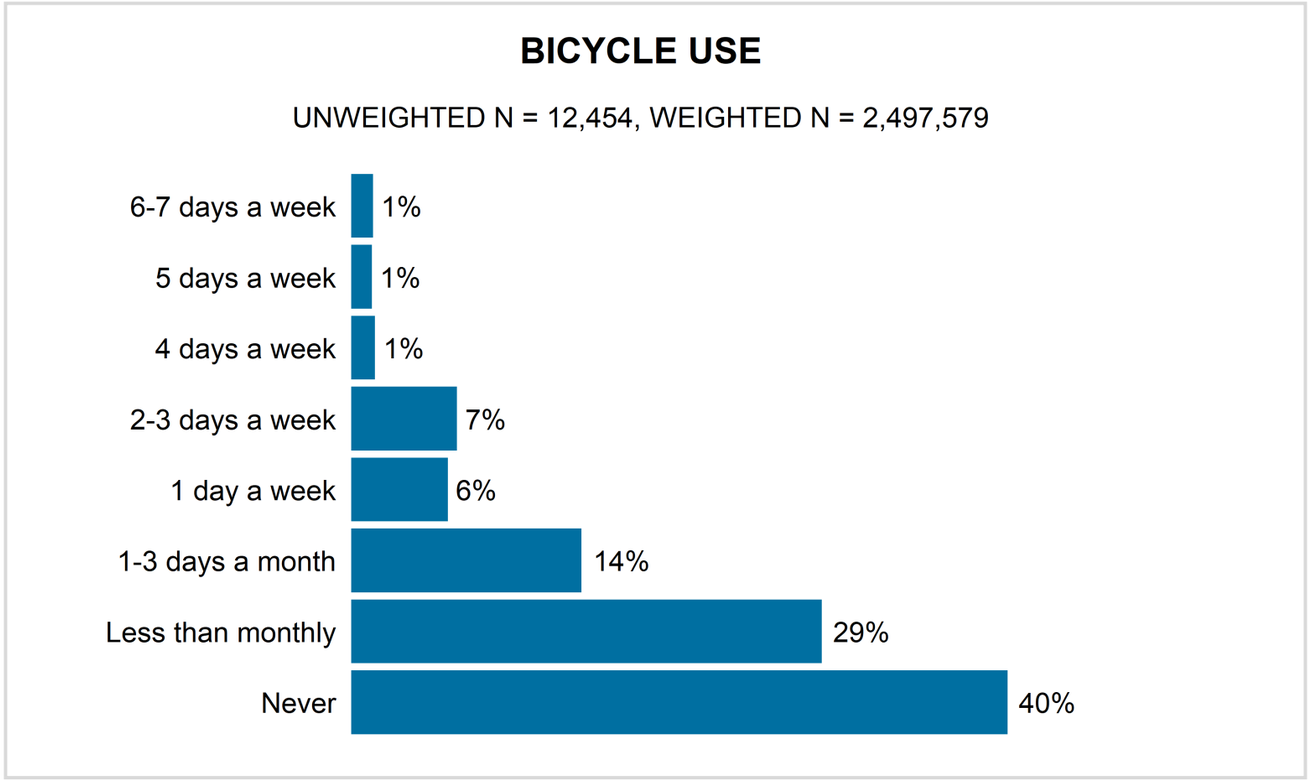


Frequency of Bicycle Use

16% of adults report using a bicycle at least once a week.

43% of adults report using a bicycle less than weekly.

40% of adults report never using a bicycle.



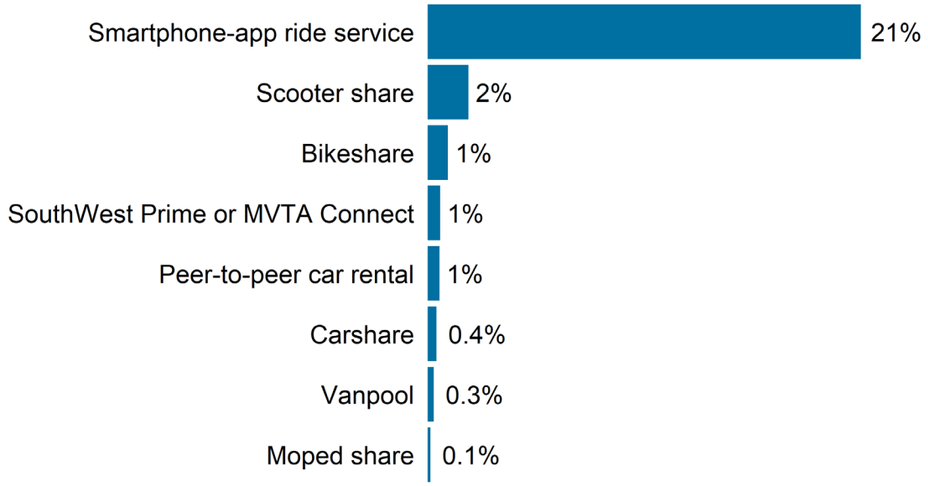
Shared Mode Use

Smartphone-app ride services are the most popular shared-mode service.

23% of adults who use smartphone-app ride services, use them at least once a month.

SHARED MODE USE

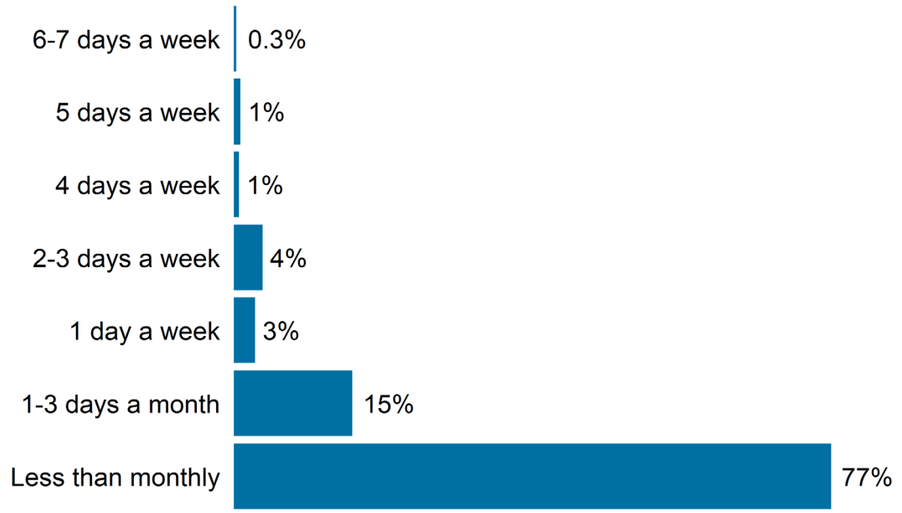
UNWEIGHTED N = 12,526, WEIGHTED N = 2,521,441



Note: Respondents could select more than one answer to this question.

SMARTPHONE-APP RIDE SERVICE FREQUENCY

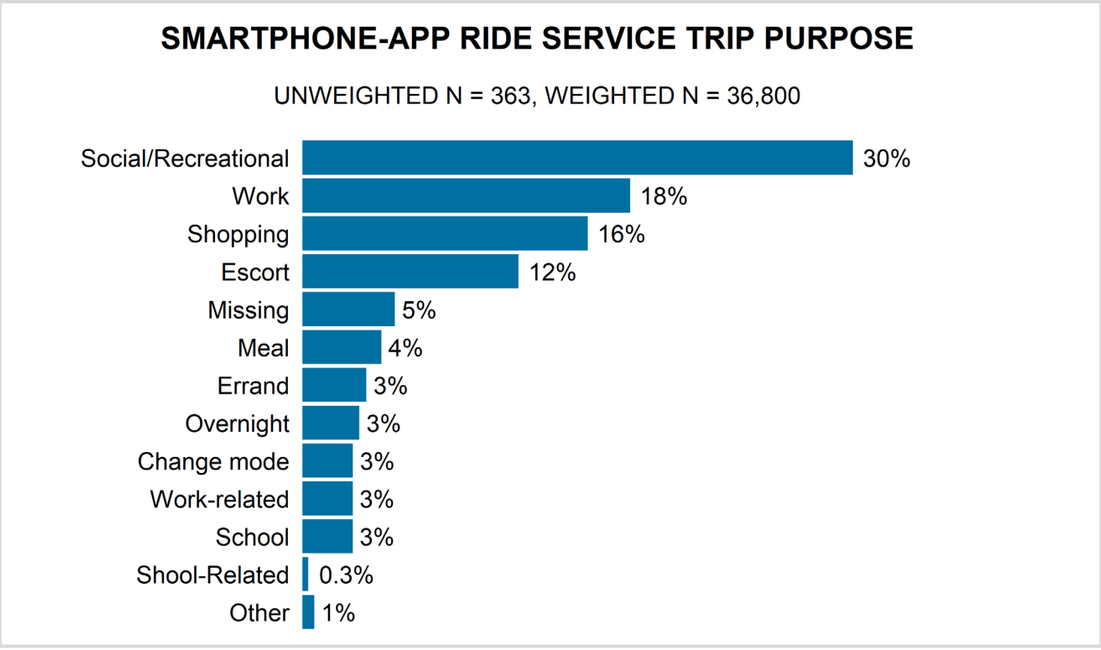
UNWEIGHTED N = 3,201, WEIGHTED N = 520,008

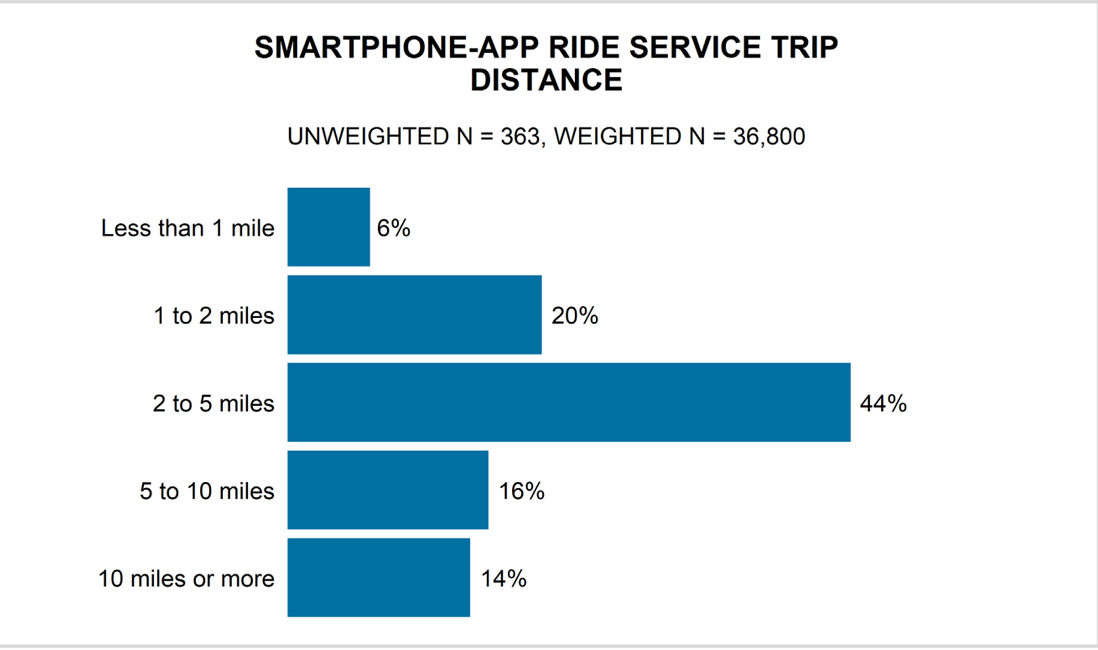


Smartphone-app Ride Service Trips

44% of trips made with a smartphone-app ride service were between 2 and 5 miles long.

19% of trips made with a smartphone-app ride service were for social or recreational activities.



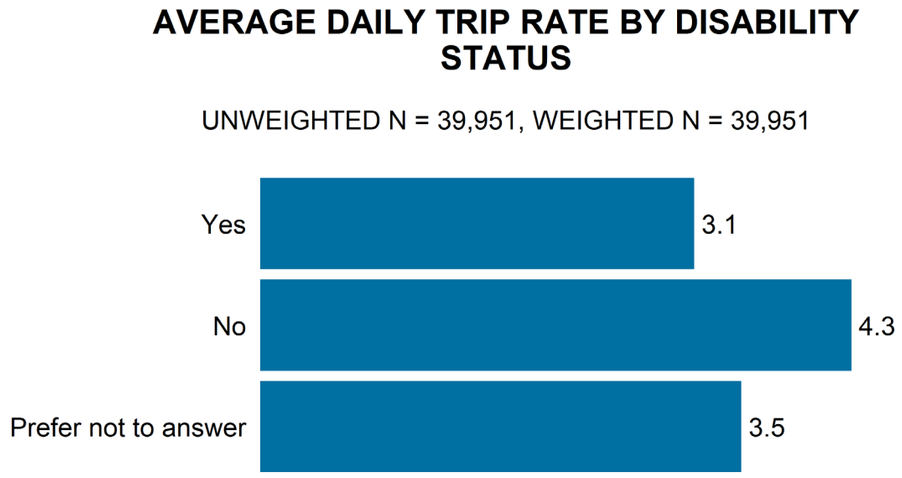


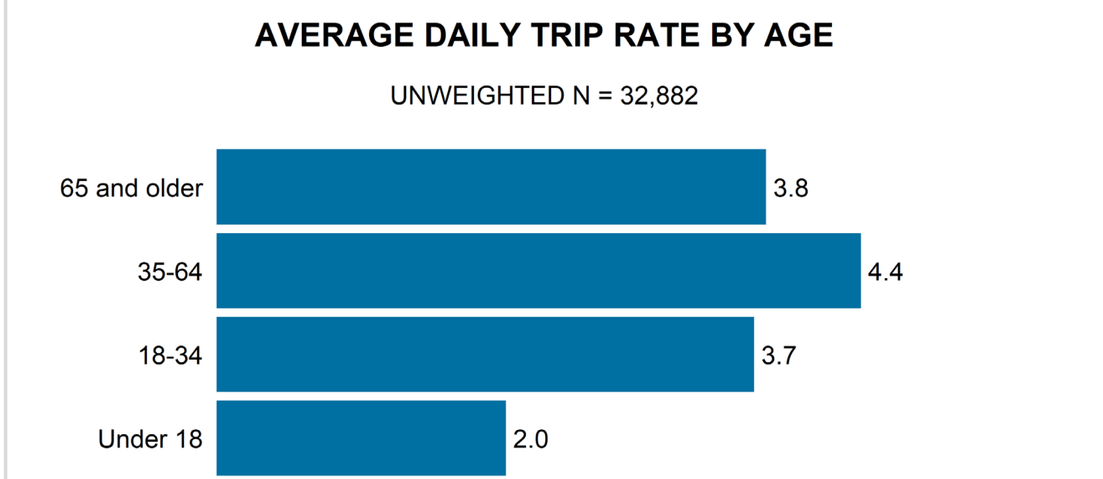
Equity Analysis

Trip Rates

Residents with disabilities make approximately 1 less trip per day on average than those who do not have a disability.

Residents aged 35-64 have the highest average weekday trip rate.

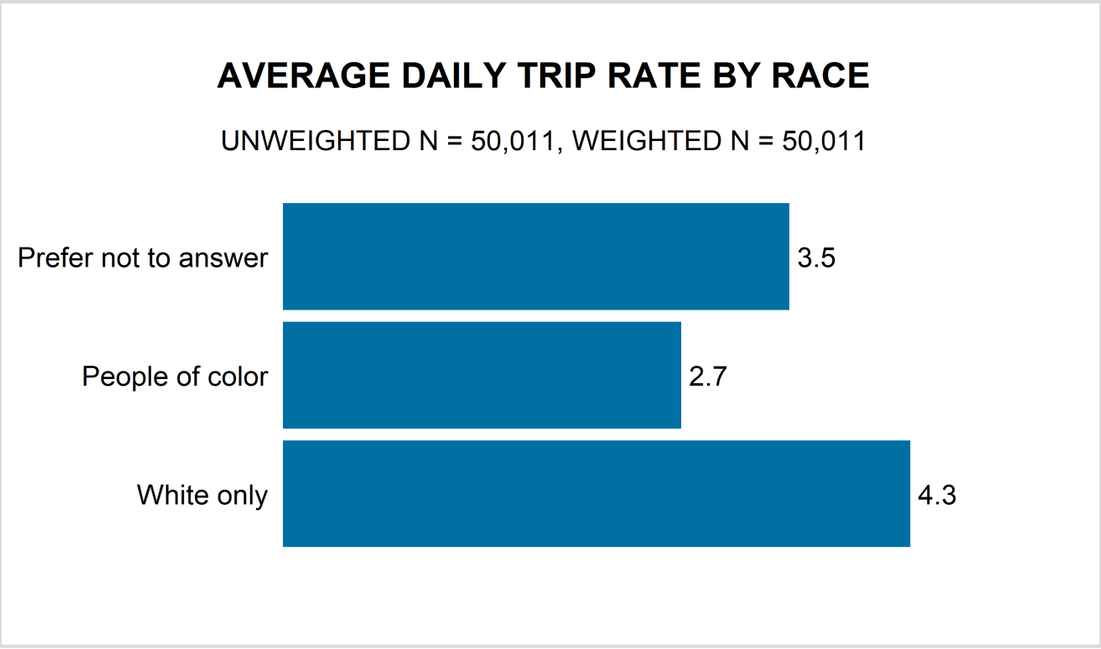


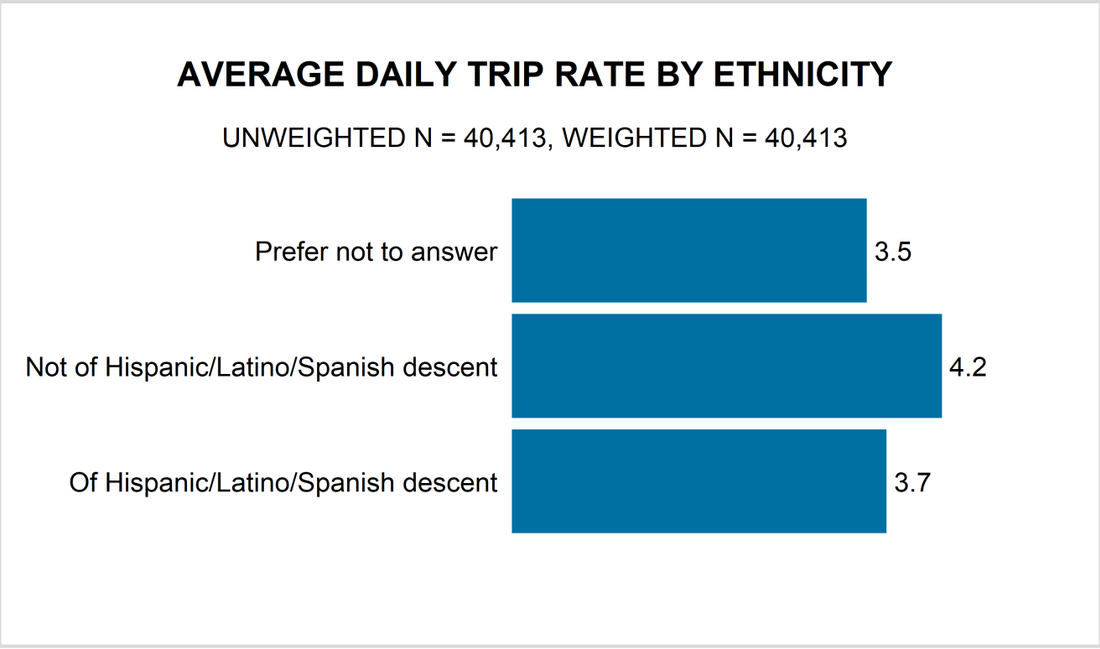


Trip Rates

People of Color in the study region have lower overall trip rates in comparison to those who are white.

People of Hispanic, Latino, or Spanish descent have lower overall trip rates in comparison to those who are not of Hispanic, Latino or Spanish descent.

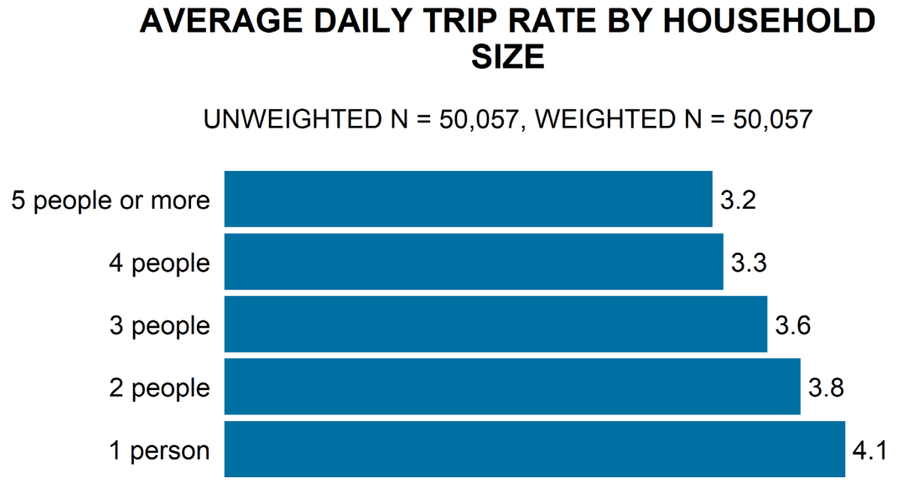


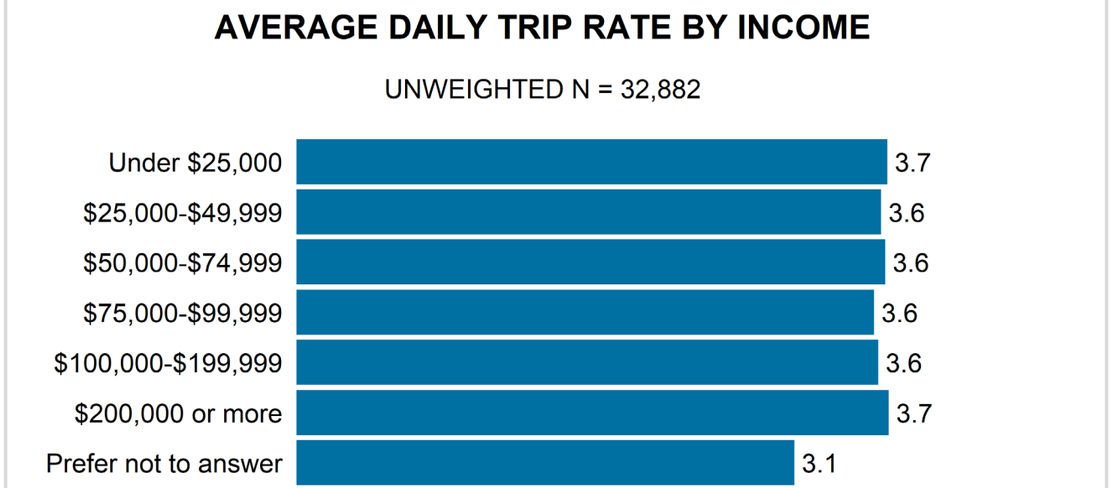


Trip Rates

Residents in 1 and 2-person households have a higher average weekday trip rate than those in households with 3 or more persons.

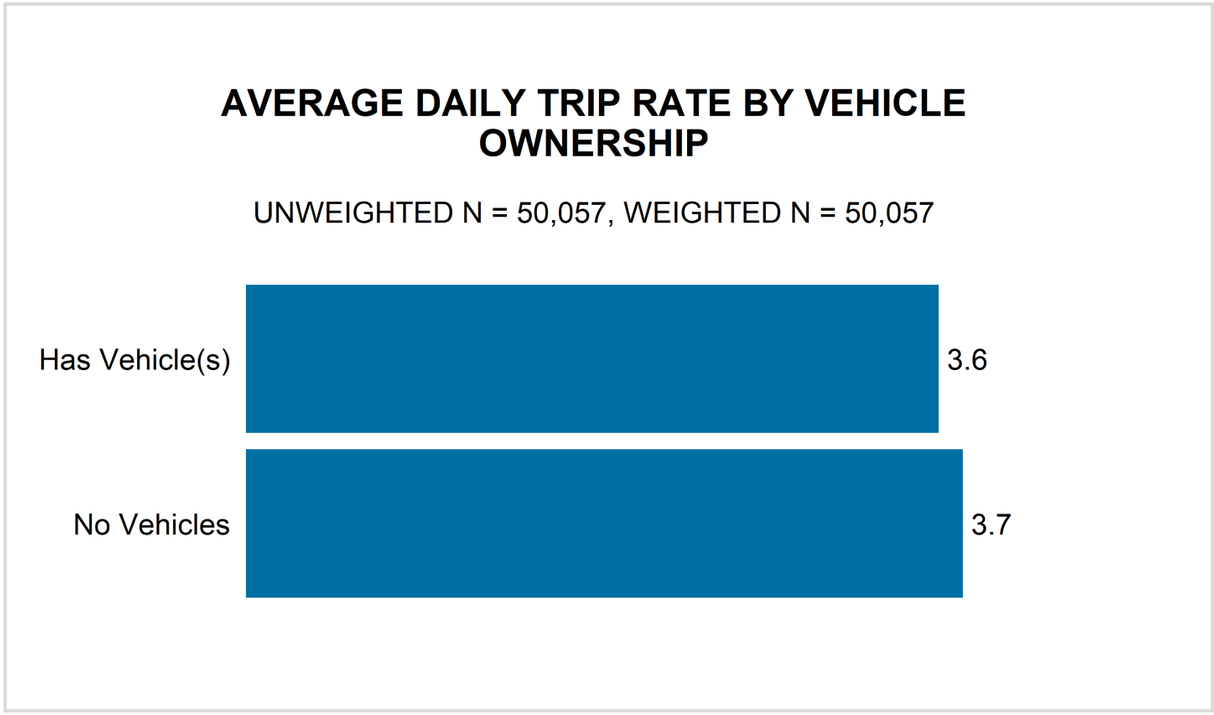
Participants who responded “Prefer not to answer” for household income skew older and have lower trip rates.





Trip Rates

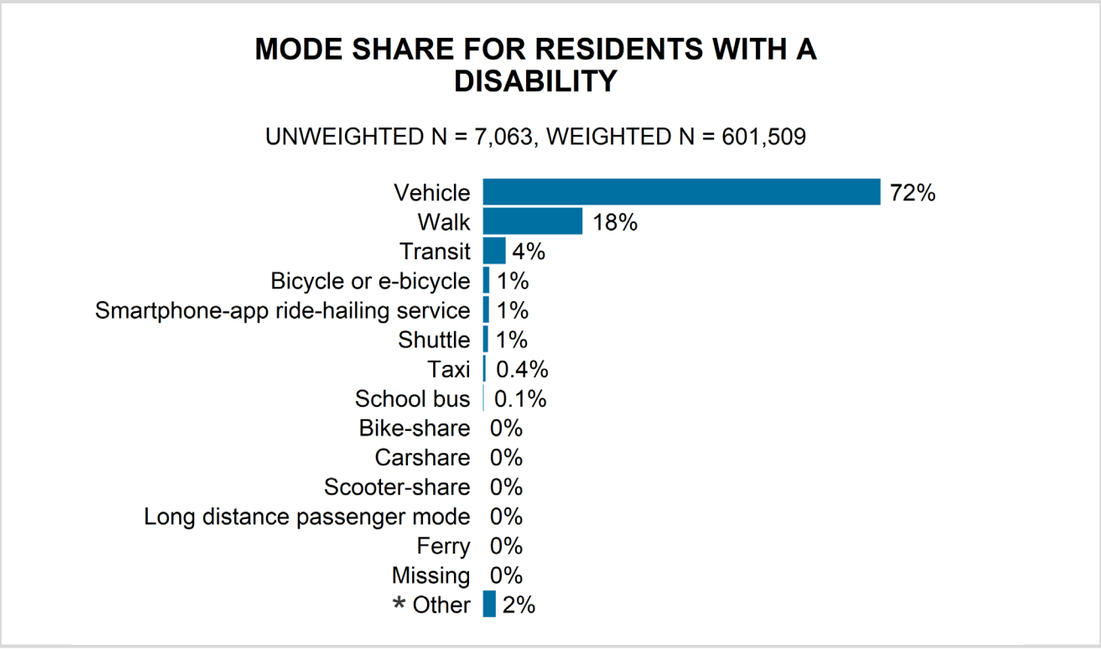
Household vehicle ownership does not significantly impact the average weekday trip rate of adult household members.

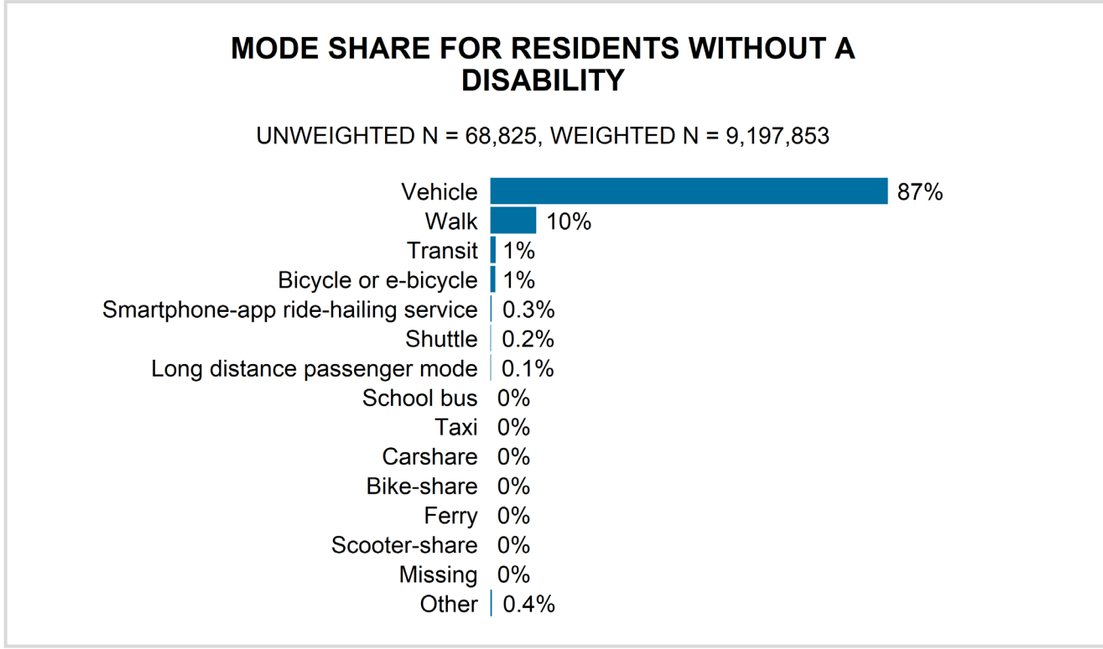


Mode Share by Disability Status

Persons experiencing a disability are more likely to walk/use a mobility device or use transit to travel compared to people who are not experiencing a disability.

Persons who are not experiencing a disability make a higher share of vehicle trips in comparison to those who are.



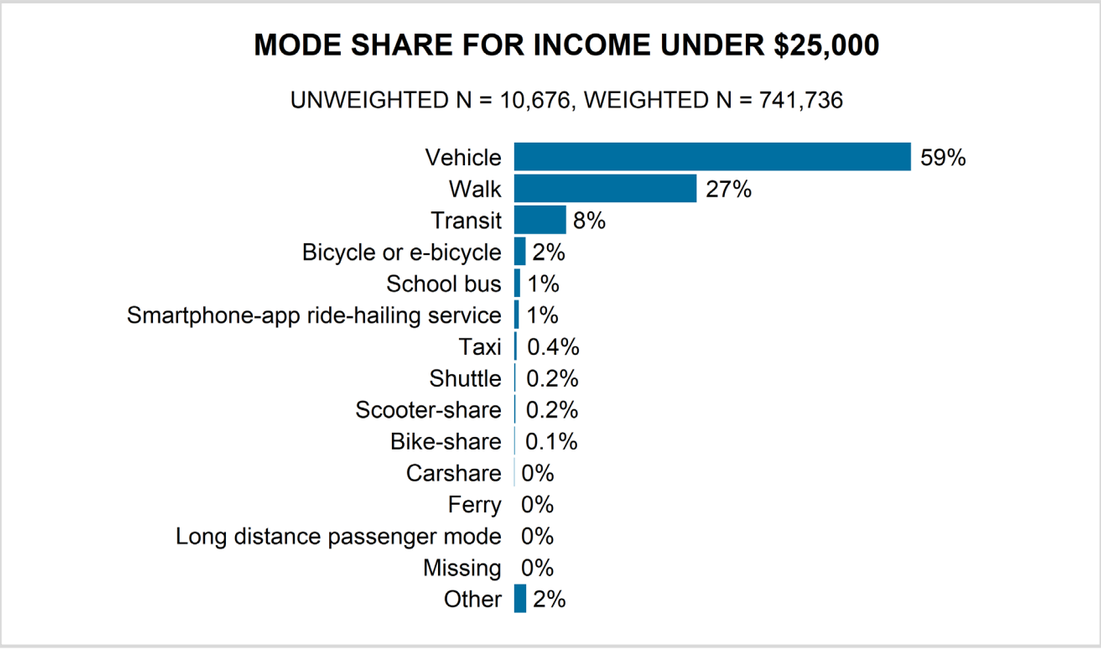


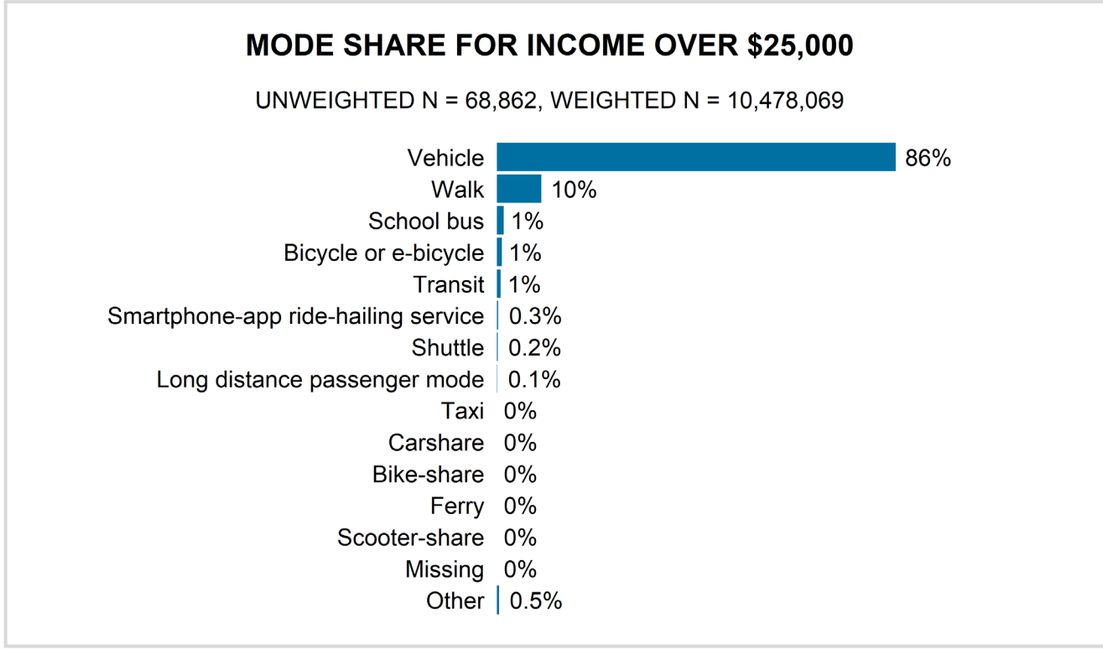
*"Other" includes Metro Mobility, Medical transportation service, and other modes (golf cart, shuttle bus, kayak, etc.)

Mode Share by Income

Low-income households are more likely to walk or use transit to travel compared to households with incomes over $25,000.

Low-income households make a significantly lower share of vehicle trips in comparison to households with incomes over $25,000.

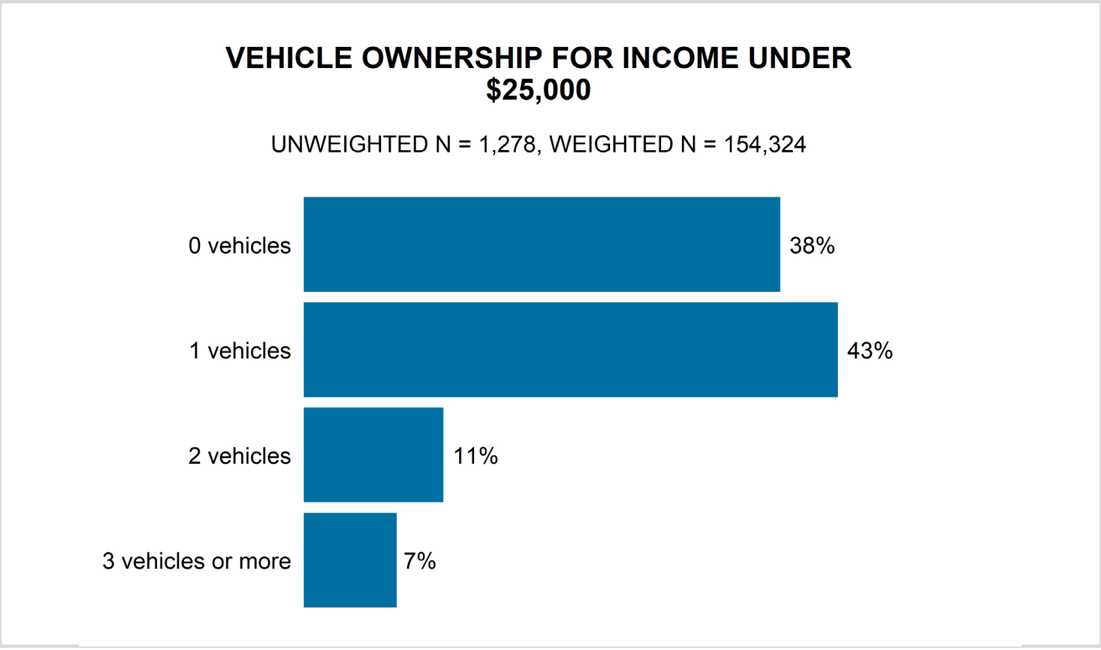


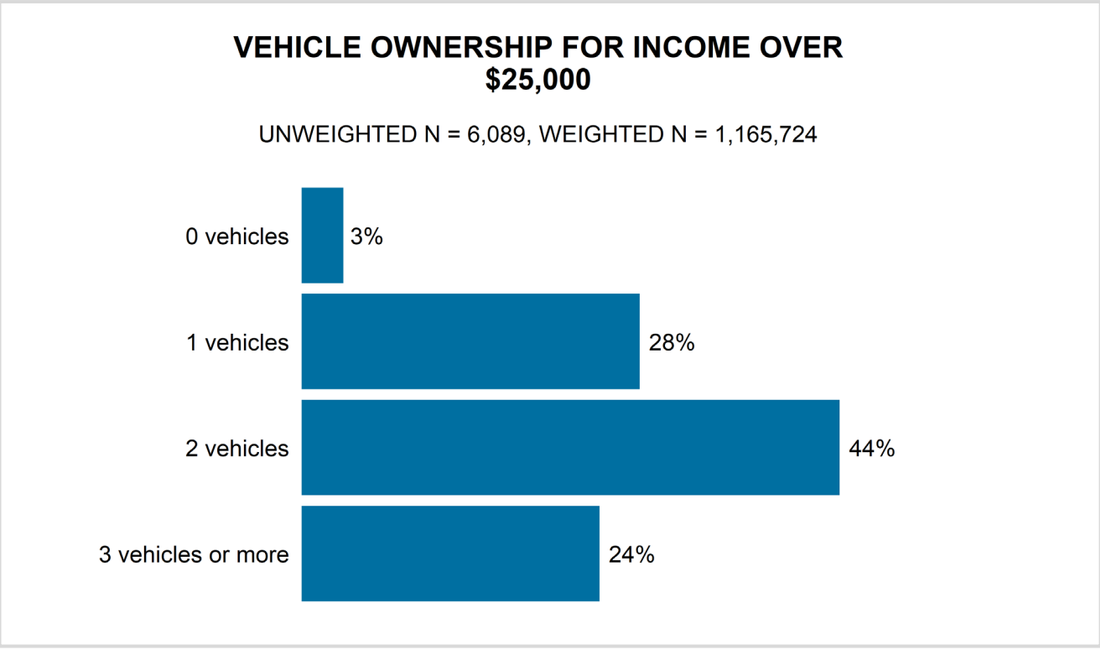


Vehicle Ownership by Income

38% of households making under $25,000 per year do not own a household vehicle.

68% of households with an income over $25,000 have at least two vehicles compared to only 18% of low-income households.

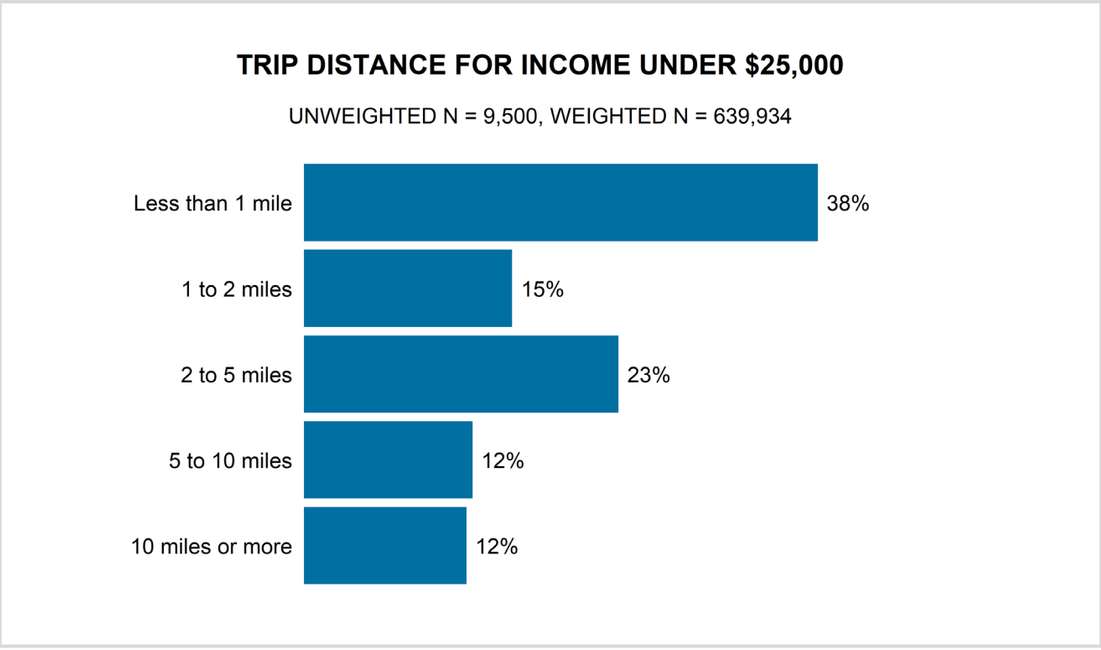


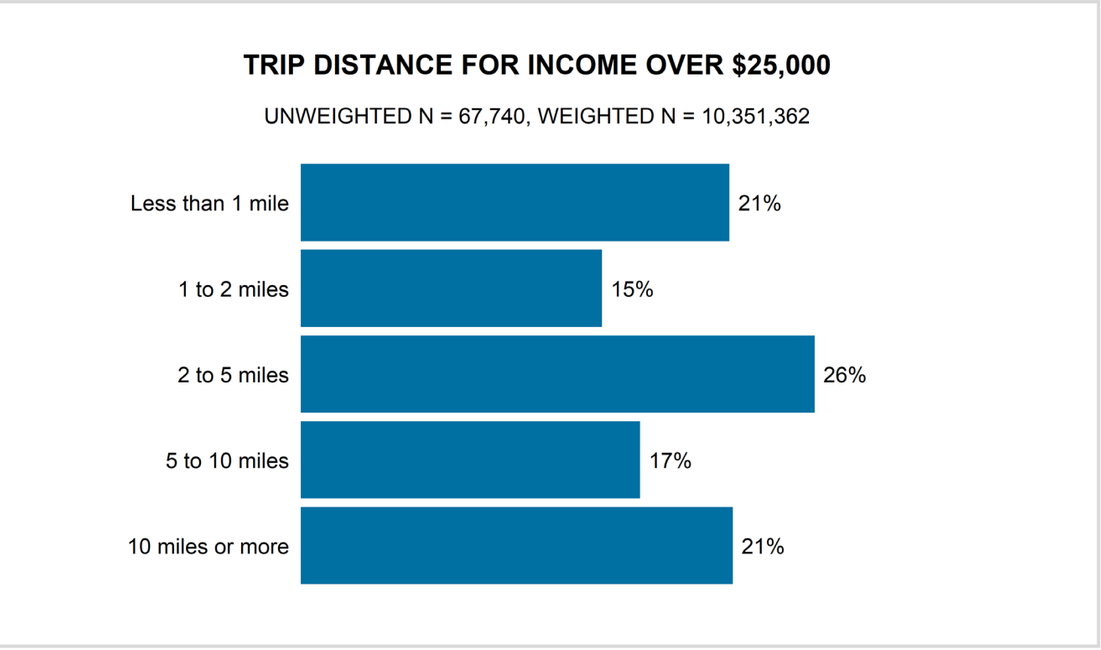


Trip Distance by Income

Low-income households make a higher share of shorter distance trips under 2 miles than higher income households.

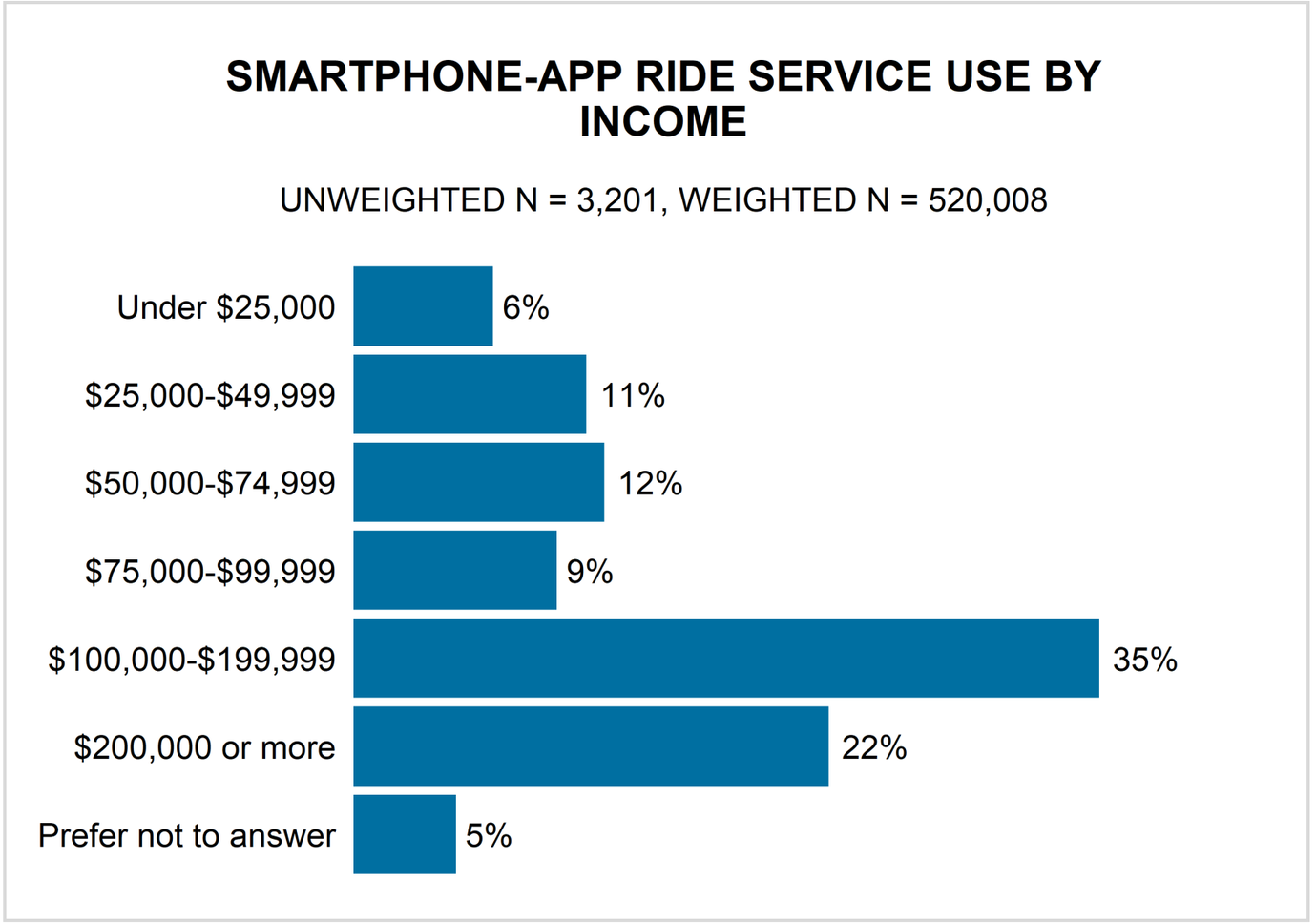
Households with incomes over $25,000 are more likely to make trips that are 10 miles or longer.





Smartphone-App Ride Service Use by Income

Smartphone-app ride services are used most frequently by high-income adults with household incomes of $100,000 or more.



Session 2:
Lessons Learned

Wave 2 Study Design Experiments

Targeted Address-based Oversampling

Increase proportion of hard-to-survey households in the sample

Supplemental Sampling

Encourage hard-to-survey households to participate

Survey Mode Choice: Smartphone, Online, Call Center

Provide a choice in platform for survey participants

ABS Invitation Resident Name Matching

Determine if this results in higher recruitment rate

Differential Incentives

Increase completion rates for hard-to-survey populations

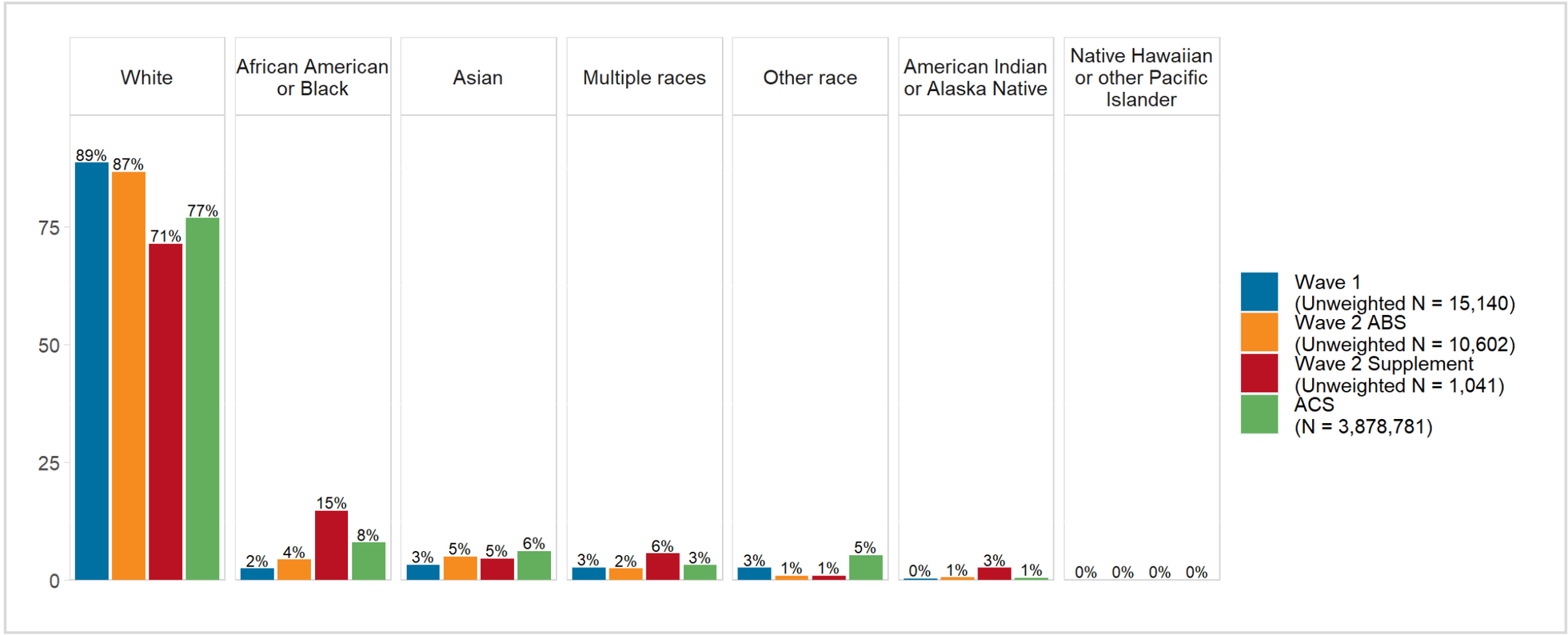
Opportunity to make informed decisions about future efforts and incorporate new methods with less risk.

Note: data shown in this section of the presentation is primarily unweighted to show differences in sample composition and assess the study design.

Sample Representation – Race

The TBI continues to match the Census Bureau's ACS in terms of representation by race. 89% of the unweighted ACS respondents are white.

UNWEIGHTED TBI DATA COMPARED TO WEIGHTED ACS DATA



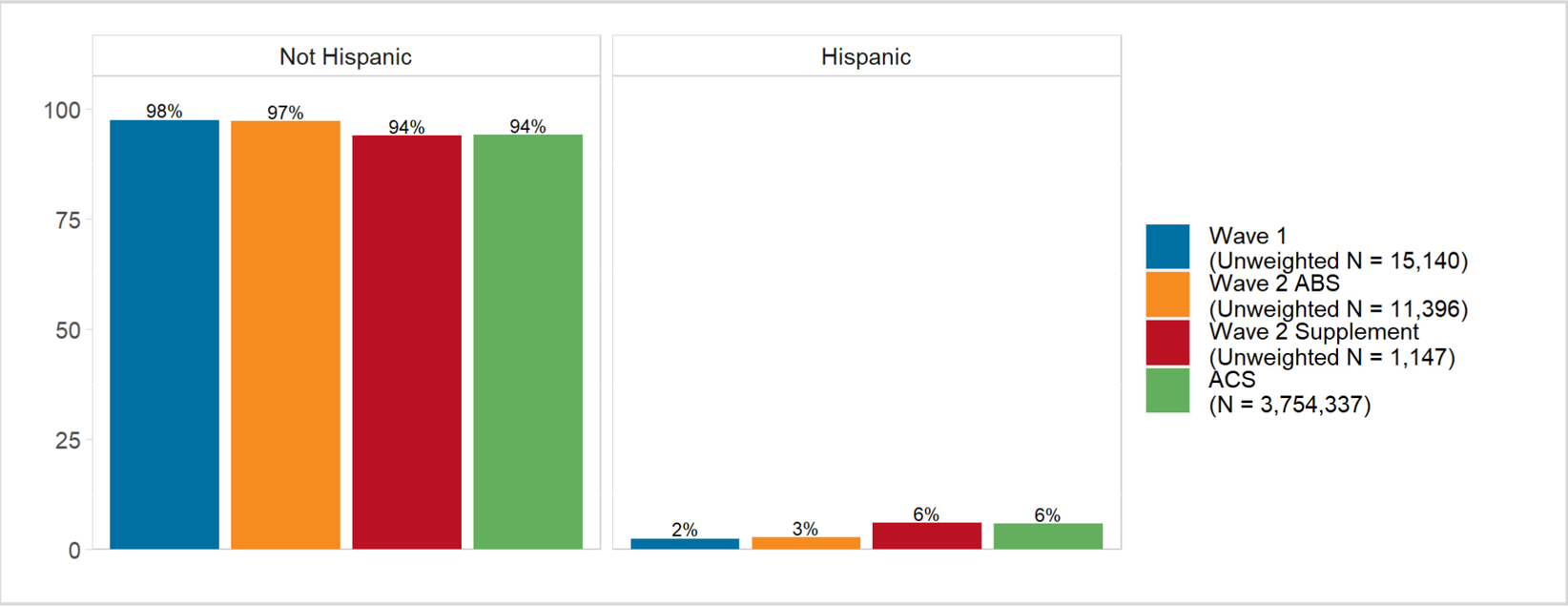
*Race/Ethnicity were only asked of adults and the survey allowed respondents to not answer.

Sample Representation – Ethnicity

While the Wave 2 TBI fell short on response from Hispanic residents. Actions were taken to improve response by implementing further incentive structure changes for households with Hispanic members in the final months of fielding.

The TBI continues to match the Census Bureau's ACS in terms of representation by ethnicity. 3.5% of the unweighted ACS respondents are Hispanic.

UNWEIGHTED TBI DATA COMPARED TO WEIGHTED ACS DATA

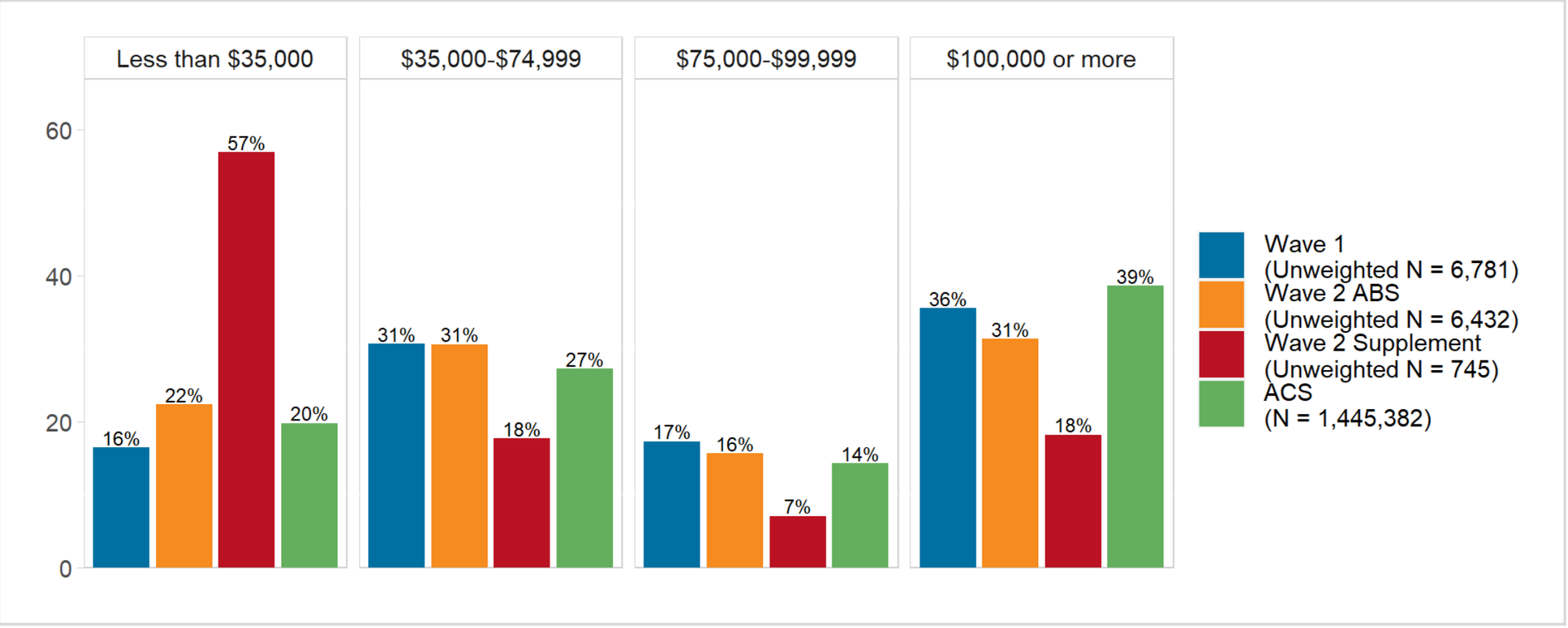


*Race/Ethnicity were only asked of adults and the survey allowed respondents to not answer.

Sample Representation – Income

The Wave 2 TBI obtained a more than representative sample of households with incomes less than $35,000 in both the ABS and supplemental sample methods.

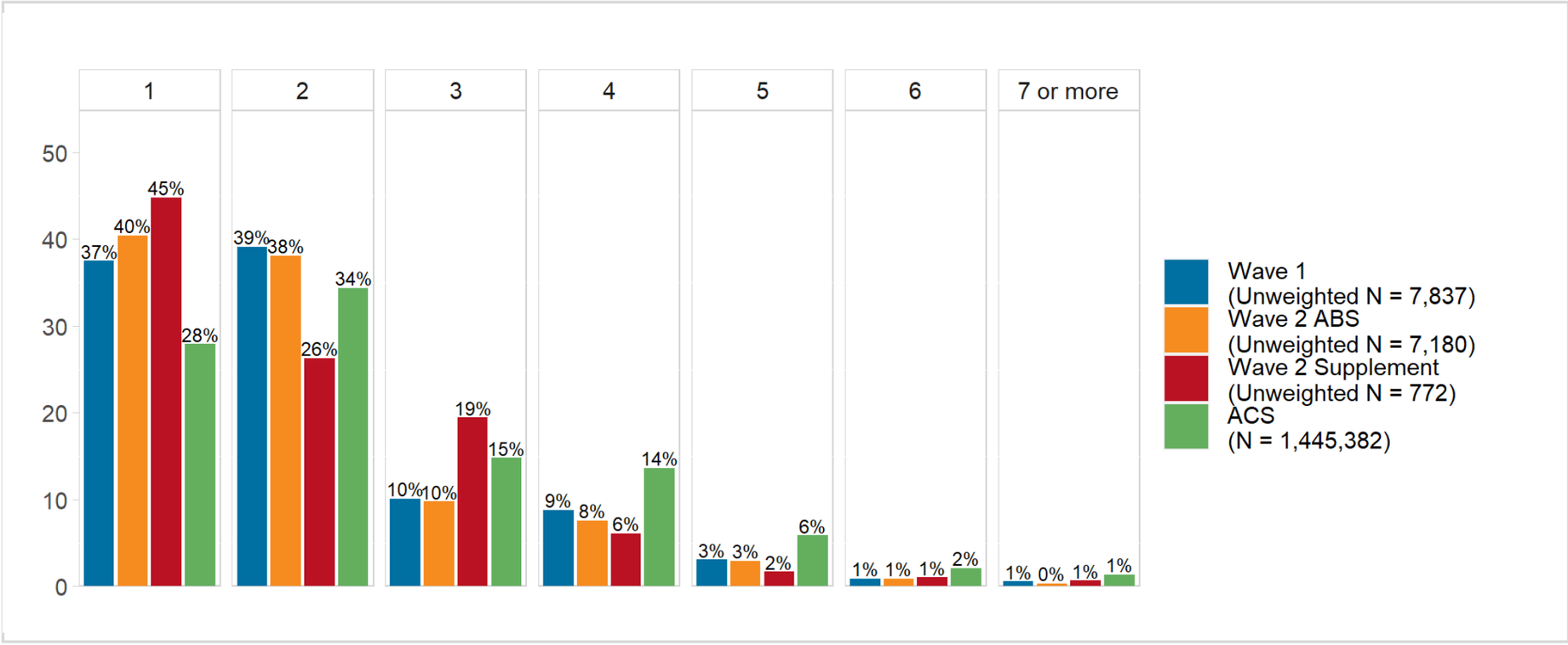
UNWEIGHTED TBI DATA COMPARED TO WEIGHTED ACS DATA



Sample Representation – Household Size

The Wave 2 TBI fell short on 4 to 6 person households, and consequently implemented incentive structure changes for those households in the final months of fielding.

UNWEIGHTED TBI DATA COMPARED TO WEIGHTED ACS DATA

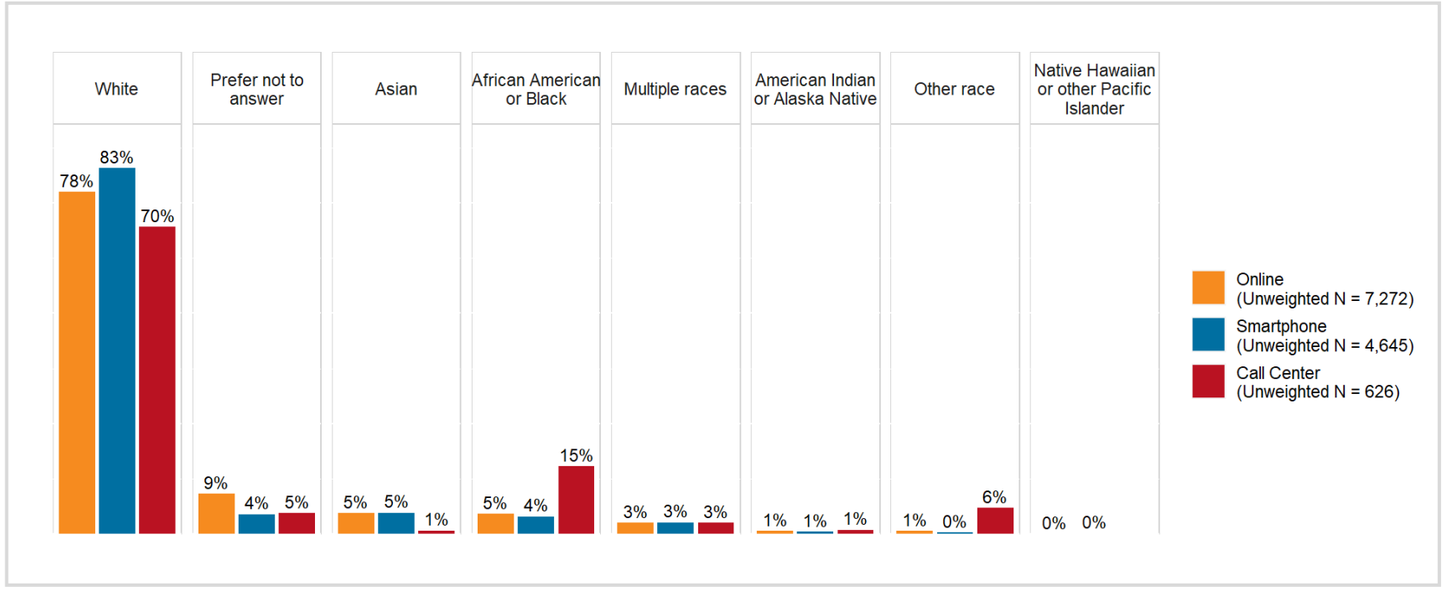


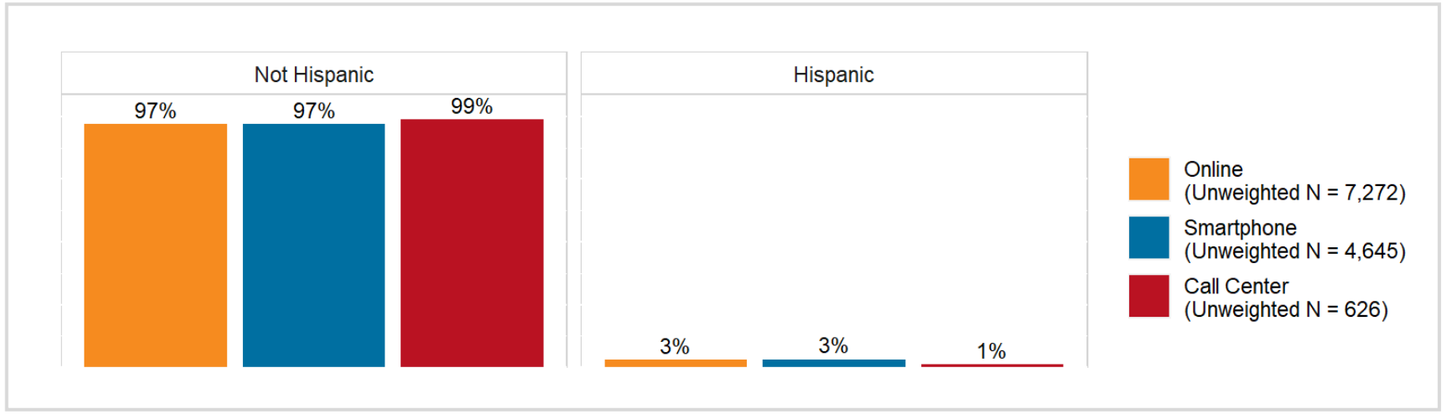
Survey Mode Participation – Race and Ethnicity

African American or Black participants participated via the call center at a higher rate than participants of other races.

	N	Complete person days	Trips per person per day*
Persons of color	647	6.09	4.05
White, non-Hispanic	3,790	6.39	4.33

**Trip rate includes adults only*





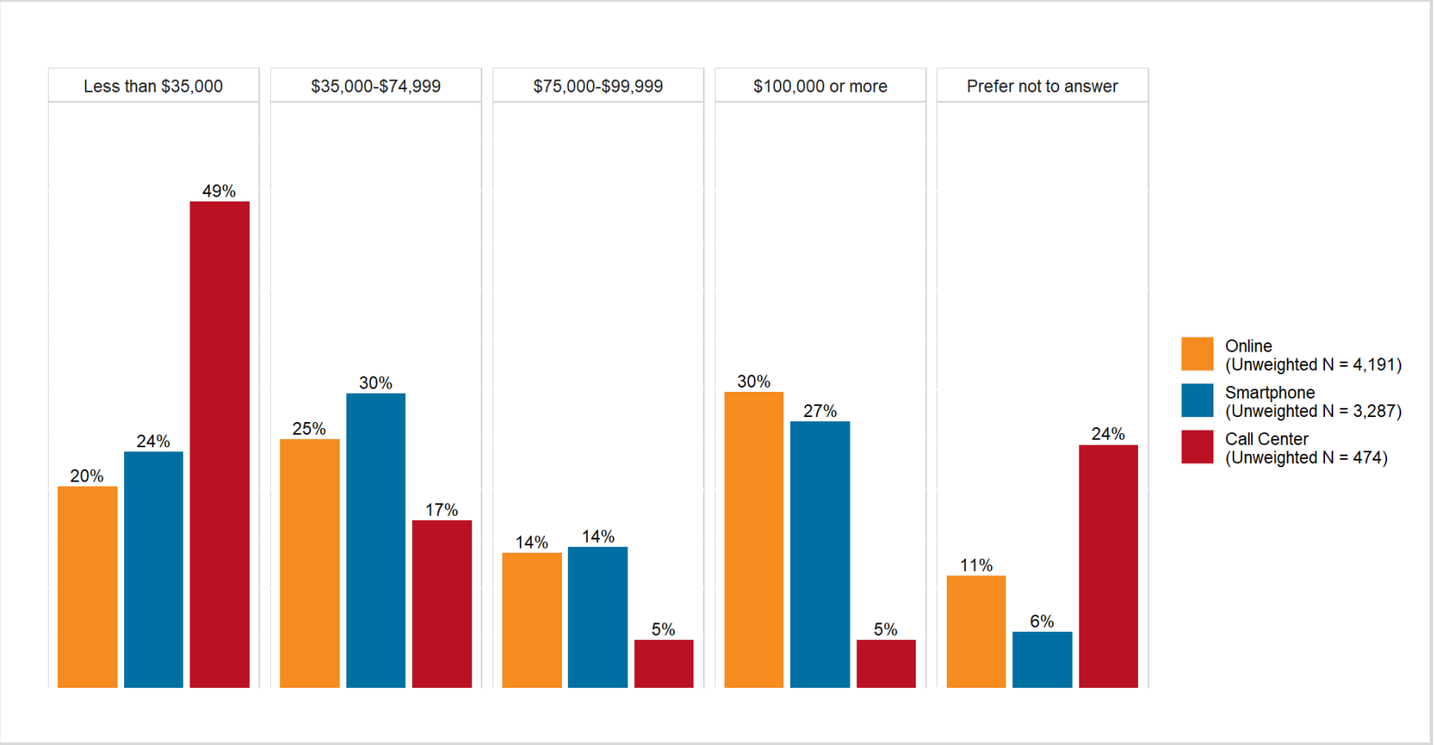
Survey Mode Participation – Income

Call center participants makeup only 6% of the sample.

49% of households that participated via call center make under $35,000.

Households that participated online or via smartphone app had relatively similar income distributions.

Of those adults who participated via smartphone app, higher income households make more trips per day on average and have a higher average number of complete days.



Income level	N	Complete person days	Trips per person per day*
Less than $35,000	859	6.03	3.97
$35,000 or more	3,522	6.40	4.38

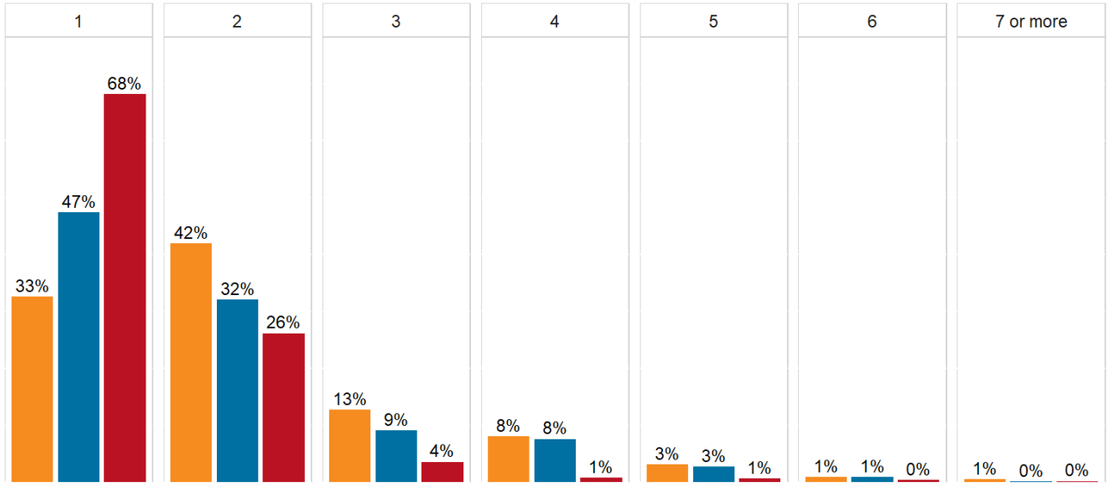
**Trip rate includes adults only*

Survey Mode Participation – Household Size

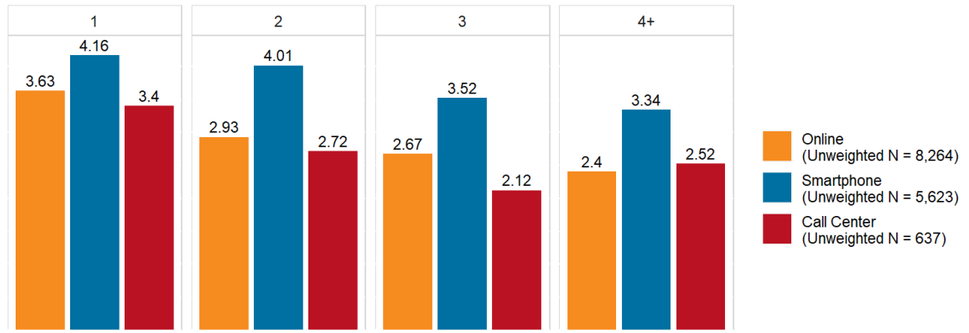
68% of households that participated via call center have only one member. Overall, though call center participants makeup only 6% of the sample.

There's a higher share of households that participated via smartphone app with one member in comparison to online.

However, smartphone participants have significantly higher person-day trip rates.



Person-day trip rates by household size



ABS Invitation Addressee Experiment

An A/B test was conducted during sample order 1 to determine if addressing invitation mailings to the resident by name would increase recruit rates and thus overall completion rates.

Purchasing this additional information – name of current resident – comes at a cost (and is sometimes incorrect), but historically in survey research has resulted in higher response.

Overall, addressing the mailings to current residents by name did not have a significant impact on completion rates and the project team determined that this additional information would not be purchased for subsequent orders.

Overall completion rate

Treatment	Completed Households	Not Completed	Completion Rate
Name was not used	1,204	38,373	3.04%
Used name if available	1,326	42,648	3.01%

Race and ethnicity

Treatment	Completed Households	Includes Person of Color	Includes White, non-Hispanic only
Name was not used	1,204	13.9%	86.1%
Used name if available	1,326	14.6%	85.4%

Income

Treatment	Completed Households	Less than $35,000	$35,000 or more
Name was not used	1,041	19.9%	80.1%
Used name if available	1,164	19.6%	80.4%

Household Size

Treatment	Completed Households	1 member	2 members	3 members	4 or more members
Name was not used	1,204	42.6%	38.8%	9.2%	9.4%
Used name if available	1,326	42.6%	37.5%	9.2%	10.7%

Purpose of Differential Incentive Offerings

Differential incentive offerings were used for two primary purposes:

- To **increase smartphone participation** where participants are asked to provide a full week of travel information rather than a single day
- To **increase completion rates for hard-to-survey populations** that face more barriers to complete the survey

Higher incentive amounts were offered at different times to efficiently distribute higher incentives to the target population:

- In the **survey invitation** to increase recruitment into the survey
- At the **conclusion of the recruit/signup survey** to reduce survey dropout before completion of part-two the trip diary

Types of Differential Incentive Offerings

INCENTIVE AMOUNTS

	Sample Orders 1 & 2	Sample Order 3
Online/call center standard offering	$10 per household	$10 per household
Online/call center hard-to-reach offering	$20 per household	$20 per household
Smartphone standard offering	$15 per adult participant	$20 per adult participant
Smartphone hard-to-reach offering	$25 per adult participant	$30 per adult participant

CRITERIA FOR A HOUSEHOLD TO QUALIFY FOR THE HIGHER HARD-TO-REACH INCENTIVE

Sample Orders 1 & 2	Sample Order 3
In sample segments 1 or 2* (offered in invitation)	In sample segments 1 or 2 (offered in invitation)
Recruited via supplemental sampling methods	Recruited via supplemental sampling methods
Member 1 is Hispanic (offered at end of signup survey)	Member 1 is Hispanic (offered at end of signup survey)
Member 1 is a Person of Color (offered at end of signup survey)	Member 1 is a Person of Color (offered at end of signup survey)
Household income is less than $35,000 (offered at end of signup survey)	Household income is less than $35,000 (offered at end of signup survey)
	Household has 4 or more members (offered at end of signup survey)

**Sample segments 1 and 2 were comprised of the block groups in the Twin Cities seven-county metropolitan area which are designated as Urban in the Thrive MSP 2040 Community Designations and whose population is at least 60% Hispanic and/or People of Color.*

Impacts of Differential Incentive Offerings

An A/B test was conducted during sample order 1 to determine if offering a higher incentive amount in the invitation letter would increase recruit rates (and thus overall completion rates) for hard-to-reach households specifically households with Hispanic members and/or People of Color.

In block groups whose population is at least 60% Hispanic and/or People of Color, 50% of the invitation letters offered a higher incentive amount to determine if this would increase response from households with members who are Hispanic and/or People of Color.

Overall, this offering was effective at increasing the number of hard-to-reach households in the sample from these block groups and it was implemented for the remainder of the study.

A/B Test Group	Completion Rate	% People of Color
Offered higher incentive in letter	2.7%	30.7%
Not offered higher incentive in letter	1.8%	27.3%

**Sample segments 1 and 2 were comprised of the block groups in the Twin Cities seven-county metropolitan area which are designated as Urban in the Thrive MSP 2040 Community Designations and whose population is at least 60% Hispanic and/or People of Color.*

Impacts of Differential Incentive Offerings

Mid-fielding the project team observed a lower representation of households with four or more members.

To boost sample representation for large-households, for sample order 3 households with four or more members were offered the higher incentive amount after completing the signup survey (when they provided info on household size).

Overall, this offering was effective at increasing the conversion rate (thus decreasing attrition) for large households for whom it is more burdensome to complete the survey.

Diary participation mode	Conversion Rate	% HHs with 4+ members
HHs with 4 plus members in sample orders 1-2	31%	10.4%
HHs with 4 plus members in sample order 3	41%	13.3%

Impacts of Differential Incentive Offerings

The project team continued offering differential incentives in Wave 2, as these proved effective in Wave 1 at increasing the conversion rate (and thus reducing attrition) for hard-to-survey households who typically dropout at higher rates.

Overall, differential incentive offerings continue to be effective at increasing the conversion rate (thus decreasing attrition) for hard-to-reach households who face more barriers to complete the survey.

Diary participation mode	Conversion Rate
Hard-to-reach household in sample orders 1-2	54%
Standard offering household in sample orders 1-2	55%
Hard-to-reach household in sample order 3	55%
Standard offering household in sample order 3	61%

Lessons Learned: Wave 2 Study Design Experiments

Targeted Address-based Oversampling

Increase proportion of hard-to-survey households in the sample

Supplemental Sampling

Encourage hard-to-survey households to participate

Survey Mode Choice: Smartphone, Online, Call Center

Provide a choice in platform for survey participants

ABS Invitation Resident Name Matching

Determine if this results in higher recruitment rate

Differential Incentives

Increase completion rates for hard-to-survey populations

Wave 3 Objectives

Increase representation in the survey sample.

Decrease survey burden and offer flexibility in participation options.

Increase amount of data collected per household.

Increasing Representation in the Survey Sample

Takeaways from Wave 2

- Utilizing supplemental sampling methods increases the share of hard-to-survey households in the data as these households respond to mailed materials at lower rates.
- Employing differential incentive strategies targeted at hard-to-survey households increases response rates for these households.

Recommendations for Wave 3

- Identify new supplemental sampling methods to better-reach hard-to-survey households and determine ways to avoid exhausting recruitment methods in a recurrent program.
- Use differential incentive strategies to target hard-to-survey households and determine if other segments should be included in the existing criteria.

Decrease survey burden and offer flexibility in participation options

Takeaways from Wave 2

- Wave 2 offered survey invitees the option to participate via any means (smartphone app, online, call center) and this helped the TBI to maintain similar response rates to Wave 1.
- All three participation options were used; however, smartphone participation did decrease with this new design.

Recommendations for Wave 3

- Continue offering participants a choice in how they participate to maintain response rates. The call center option needs to be maintained to reach certain segments of the population.
- Identify ways to further decrease survey burden by reassessing the questionnaire and determining if questions can be dropped or simplified.

Increase amount of data collected per household

Takeaways from Wave 2

– With fewer smartphone participants, less trip data overall was collected in Wave 2, but the TBI effort was able to maintain response rates (that have declined elsewhere).

Recommendations for Wave 3

– Determine if study design changes can be implemented to increase the amount of data collected per household (e.g., less days of data for smartphone app, higher differential in smartphone vs online/call center, incentivize smartphone participants at a day-level to complete more days.)

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