



2022 Citywide Mobility Survey Results

Prepared for NYC DOT by RSG





Survey Objectives

1 Track year-over-year changes in travel behavior

2 Understand changes in the state of transportation within the city

3 Measure attitudes toward current transportation issues and topics

Perform in-depth sub-group analysis for planning zones and across different socioeconomic groups



2022 Survey Overview



Summary:

- Survey fielded from September 28, 2022, through November 17, 2022.
- Smartphone participants participated in a 7-day travel diary.
- Online and call center participants participated in 1-day travel diary.
- Same questionnaire was used for smartphone, online, and call center participants.
- Survey was available in English, Simplified Chinese, and Spanish.





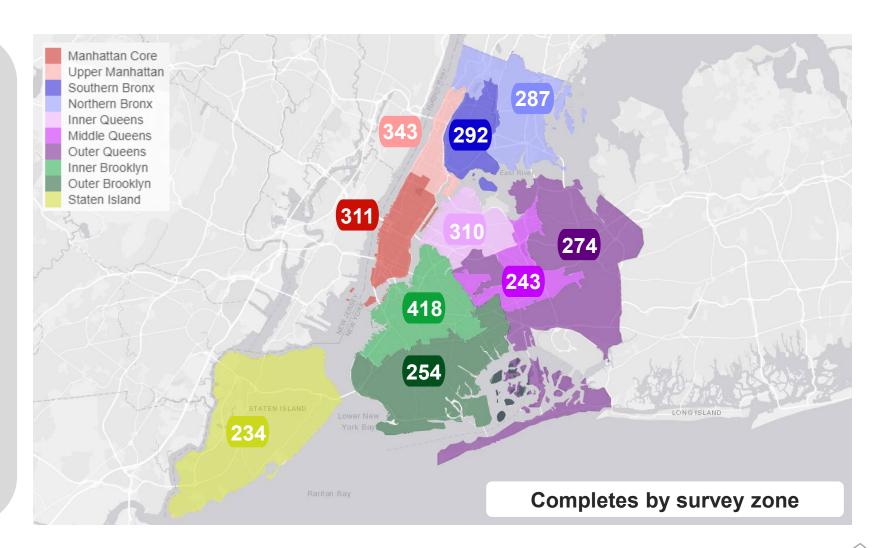
Survey Region and zones

Target Completes = 3,000

Actual Completes = 2,966

Zone Target = 300

- The overall survey target was missed by 34 completes.
- The zone target was met in 4 of 10 zones and over 80% to target in 9 of 10 zones.
- Response rates varied by zone and emailed invitations were used to increase response.



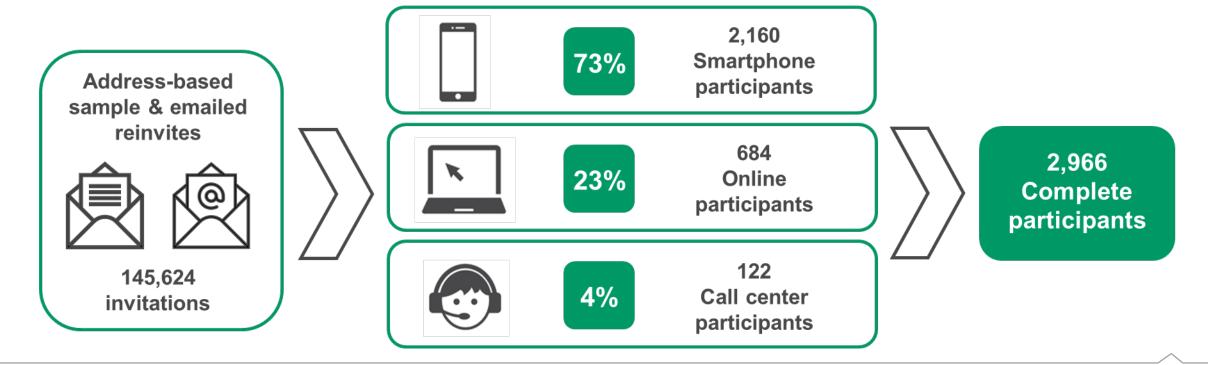




Survey Design

2022 CMS departed from previous iterations of the survey in two primary ways:

- 1. Sampling methodology included both **address-based sampling** (2,559 completes, 86% of sample) and **reinvited 2019 participants** (407 completes, 14% of sample).
- 2. Survey weighting was done using PopulationSim rather than Iterative Proportional Fit (IPF).





Survey Recruitment and Engagement

Recruitment



Mailed Invitation Materials

- Address-based sampling was used by drawing a random sample of addresses from all residential addresses in the survey region.
- An invitation letter was sent to sample addresses.

Engagement

Informational Website

- Participate in the survey
- Answers frequently asked questions

Call Center

- Participate in the survey
- Answer questions

Survey Email Address

- Answer participant questions
- Send reminder emails

Invitation Materials

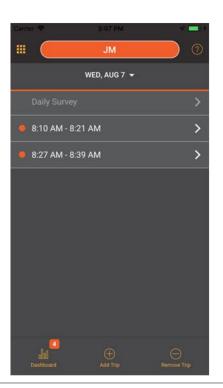


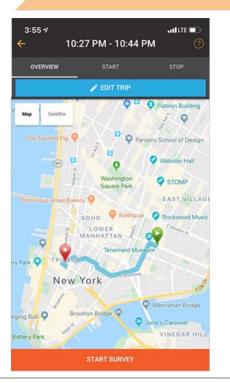


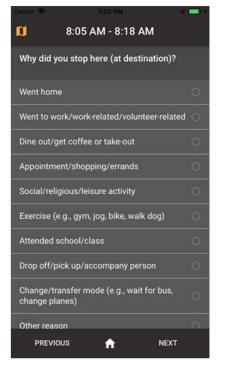
Smartphone App Participation



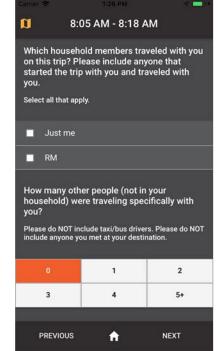
- 1. After downloading the rMove app, participants completed a brief recruit survey.
- 2. Their travel period began the next day and continued for 7 days.
- 3. rMove passively collected trip data and in-app surveys appeared after each trip.



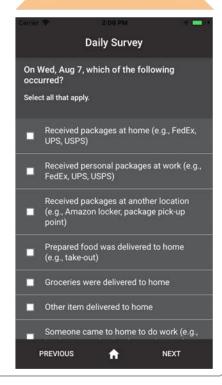




TRIP SURVEY



DAILY SURVEY



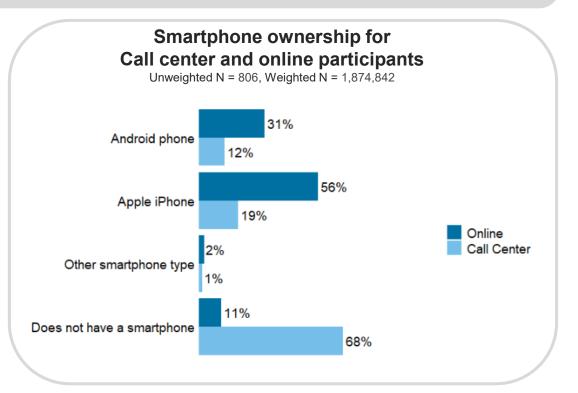


Online and Call Center Participation

Participants who visited the survey website were presented with all three survey participation modes and could enter the online survey using the password received in their invitation mailings.

68% of call center participants and 11% of online participants do not own smartphones.

PARTICIPATE PARTICIPATE Participate on your smartphone First, download and open the smartphone app ridove. Then enter the password provided in your invitation mailing. Participate another way? Just go about your life. Inflove will log your travel and ask questions about your trips for one week. Prefer to participate another way? Enter the password provided in your invitation mailing to begin the online survey below. Log in Or if you prefer, call us toll-free to complete the survey: 1-855-736-8251.

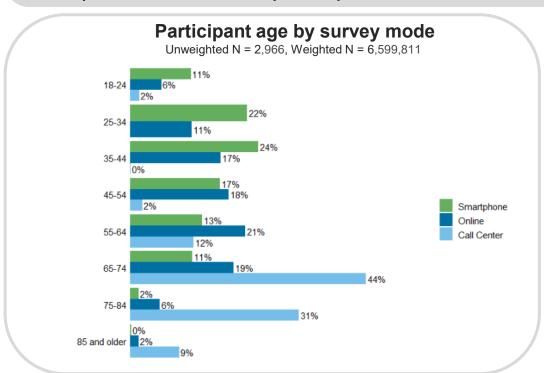


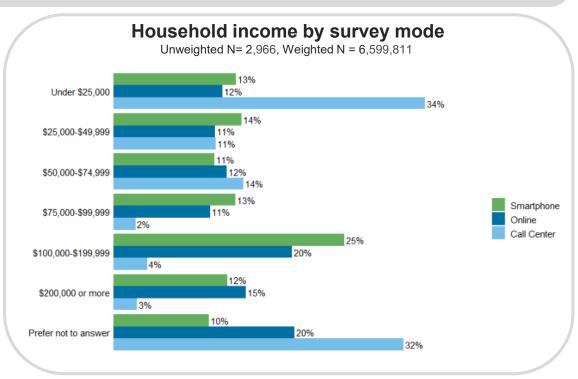


Survey Participation Mode Profile

87% of smartphone participants are under age 65, while 84% of call center participants are age 65 and over.

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



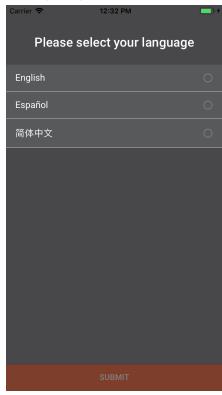




Survey language

Survey mode	Survey language	Participants	Percent of participants
Smartphone	English	2,085	70%
	Simplified Chinese	40	1%
	Spanish	35	1%
Online	English	673	23%
	Simplified Chinese	7	0%
	Spanish	4	0%
Call center	English	119	4%
	Spanish	3	0%
Total		2,966	100%

Screenshot of rMove language selection.





Survey Response

CMS zone	Invited	Recruited	Recruit rate ¹	Completed	Complete rate ²
Manhattan Core	9,850	379	3.8%	260	2.6%
Upper Manhattan	14,200	484	3.4%	310	2.2%
Inner Brooklyn	15,600	545	3.5%	372	2.4%
Outer Brooklyn	14,350	376	2.6%	217	1.5%
Inner Queens	11,850	427	3.6%	272	2.3%
Middle Queens	10,300	322	3.1%	199	1.9%
Outer Queens	12,050	385	3.2%	229	1.9%
Southern Bronx	25,750	600	2.3%	260	1.0%
Northern Bronx	18,300	455	2.5%	243	1.3%
Staten Island	11,200	324	2.9%	197	1.8%
2019 email re-invitations	2,174	524	24.1%	407	18.7%
Total	145,624	4,821	3.3%	2,966	2.0%

¹Recruit Rate = Recruited / Invited

²Complete Rate = Completed / Invited



Survey Weighting Key and Summary Overview

Weighting key:

- All figures are weighted to represent the population of New York unless noted otherwise.
- Data at the trip and day levels are weighted to represent an average weekday.

2022 Survey summary overview Table of content:

Sample Profile

Trip Diary

Bicycle Behavior

Work & School Travel Behavior

Micromobility Usage

Transit Services Usage

Delivery Services Usage

Vehicle Behavior & Ownership

Equity Analysis





Sample Profile

Household and Person Demographics

Sample Profile Overview

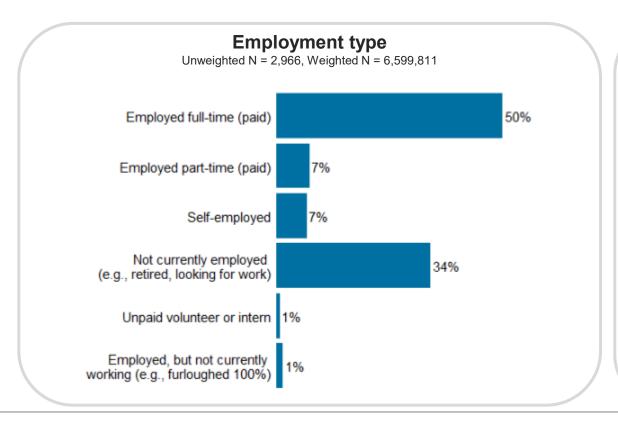
Demographic Breakdown		Unweighted sample	Weighted sample	ACS 1-Year Average (2021)
Age	18 – 24	6%	9%	10%
	25 – 44	48%	39%	37%
	45 – 64	30%	31%	30%
	65 and older	16%	20%	22%
Gender	Female	55%	50%	52%
	Male	45%	50%	48%
Race	American Indian or Alaska Native	0%	1%	1%
	Asian	18%	23%	15%
	Black or African American	16%	17%	22%
	Native Hawaiian or other Pacific Islander	0%	0%	0%
	White	51%	40%	34%
	Two Races or More	6%	10%	13%
	Other	8%	9%	16%
Ethnicity	Hispanic, Latino, or Spanish Origin	21%	31%	28%
-	Not of Hispanic, Latino, or Spanish Origin	79%	69%	72%
Income	Under \$25,000	14%	16%	17%
	\$25,000-\$49,999	16%	15%	16%
	\$50,000-\$100,000	30%	27%	26%
	\$100,000-\$199,999	26%	27%	26%
	\$200,000 or more	14%	14%	15%
Borough	Manhattan	22%	20%	20%
_	Brooklyn	23%	31%	30%
	Queens	28%	28%	28%
	Bronx	20%	16%	16%
	Staten Island	8%	6%	6%
Employment Status	Employed	73%	66%	57%
	Not employed	27%	34%	43%
Disability	Any disability	7%	8%	13%
•	Ambulatory – Difficulty walking or climbing stairs	5%	5%	8%
	Vision disability – Blind or have difficulty seeing	0%	0%	3%
	Hearing disability – Deaf or have difficulty hearing	1%	1%	2%

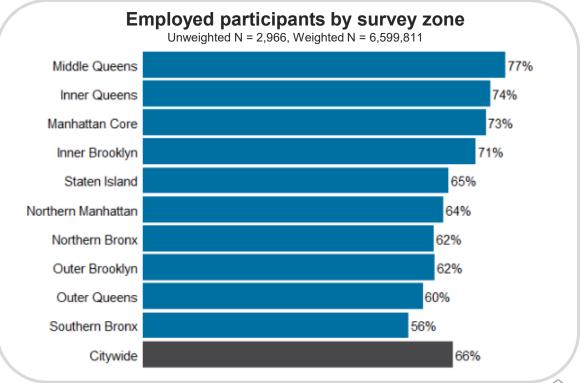
Note: For variables where "Prefer not the answer" was an option, respondents who selected that answer have been excluded from these calculations. For race, 10% of the unweighted sample and 14% of the weighted sample selected this option.

Employment Status

Half of the sample is employed full-time, and 34% are not currently employed.

Middle Queens has the highest employment rate of the survey zones at 77%.



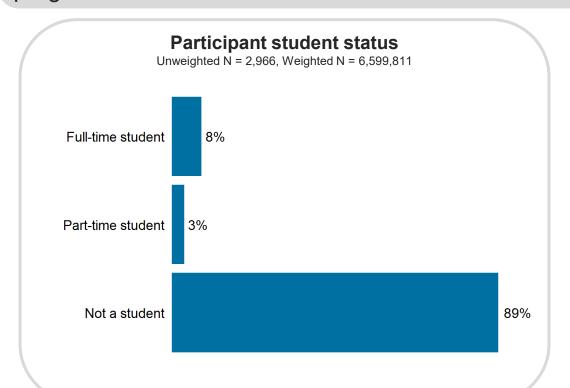


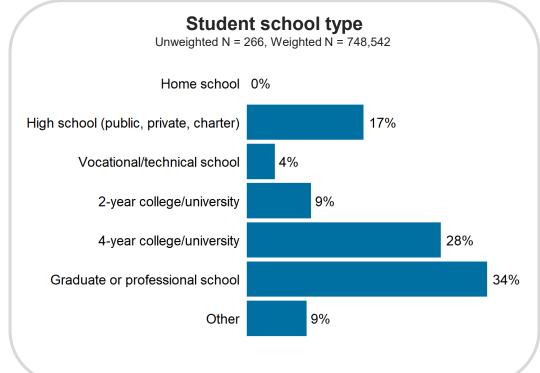


Participant Student status

11% of participants are students.

About one-third (34%) of participants who are students are enrolled in a graduate or professional program.



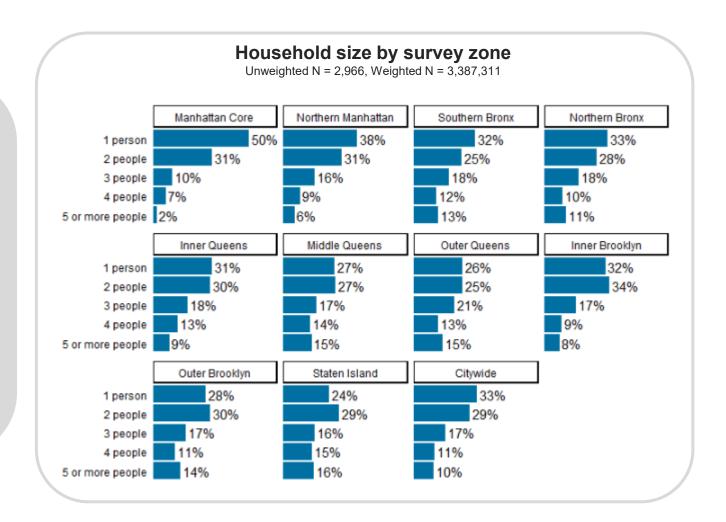




Household Size

Manhattan Core has the highest share of 1-person households – 17 percentage points higher than citywide.

Manhattan Core also has a smaller share of households with 5 or more members – 8% lower than citywide.

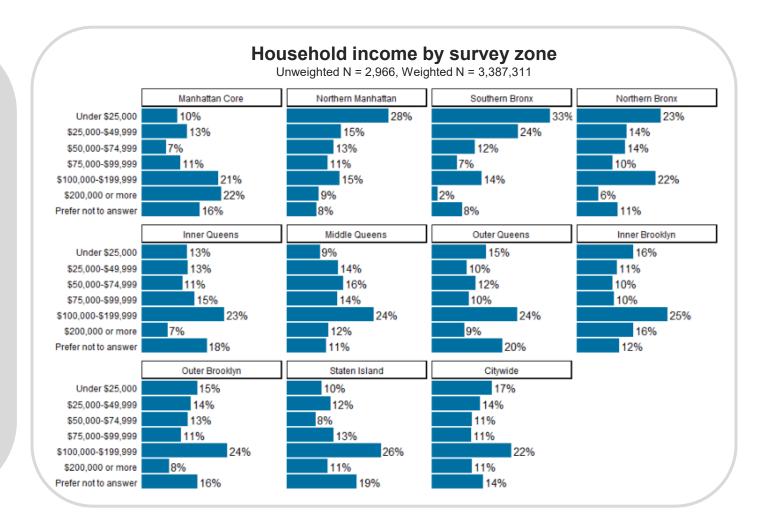




Household Income

43% of households in the Manhattan core make \$100,000 or more in annual income – the highest proportion of all zones and 10 percentage points higher than citywide.

57% of households in the Southern Bronx make under \$50,000 in annual income – the highest proportion of all zones and 26 percentage points higher than citywide.

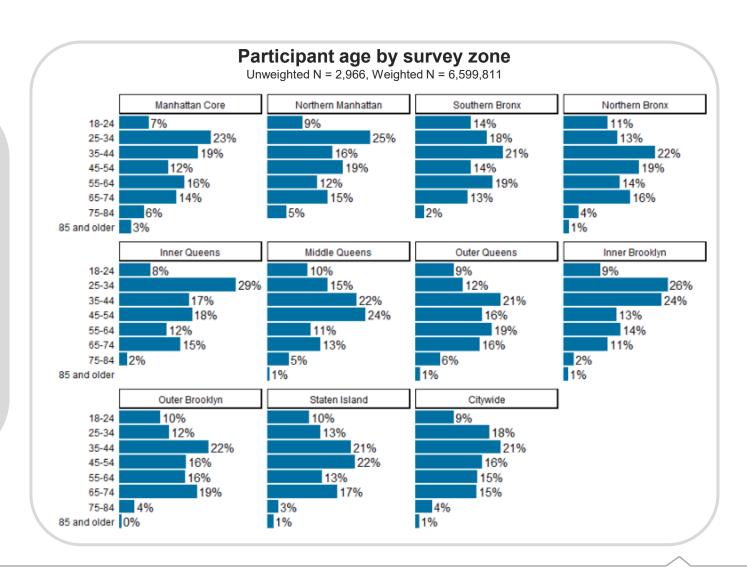




Participant Age

23% of Manhattan Core participants are age 25-34, 5 percentage points greater than the citywide share.

50% of Inner Brooklyn participants are age 25-44, 11 percentage points less than the citywide share.

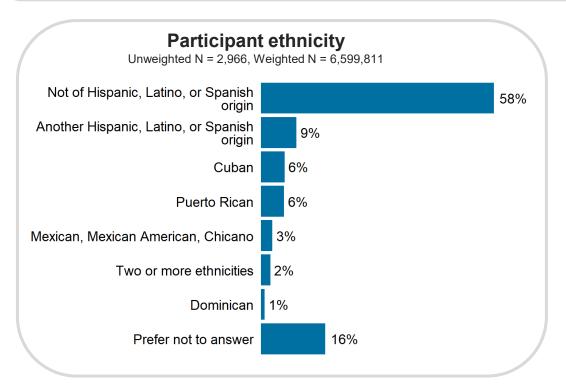


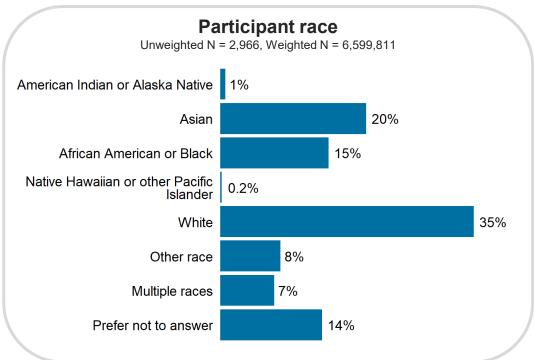


Participant Race and Ethnicity

27% of participants are of Hispanic, Latino, or Spanish origin and 16% declined to report their ethnicity.

Race was asked as a select all that apply – responses have been aggregated in the figure below for ease of comparison to the census. 14% of participants declined to report their race.



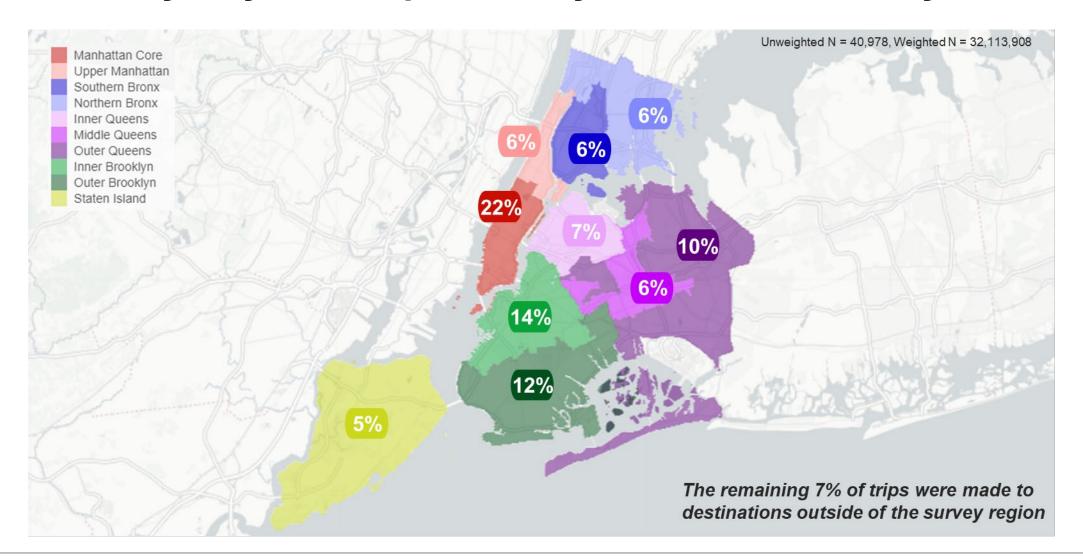






Trip Diary

Weekday Citywide Trip Share by Destination Survey Zone





Citywide Mode Share

- Driving up, transit down, biking up
- Changes in driving, transit, and biking align with other data sources

Mode share by year

Mode	2019	2022	Change
Walk	41%	45%	+4%*
Vehicle	30%	34%	+4%
Transit	24%	17%	-7%
Bike	2%	3%	+1%
Other	3%	1%	-2%

Notes:

The "Other" category includes micromobility options.

For this table, mode share is calculated across all seven days of the week.



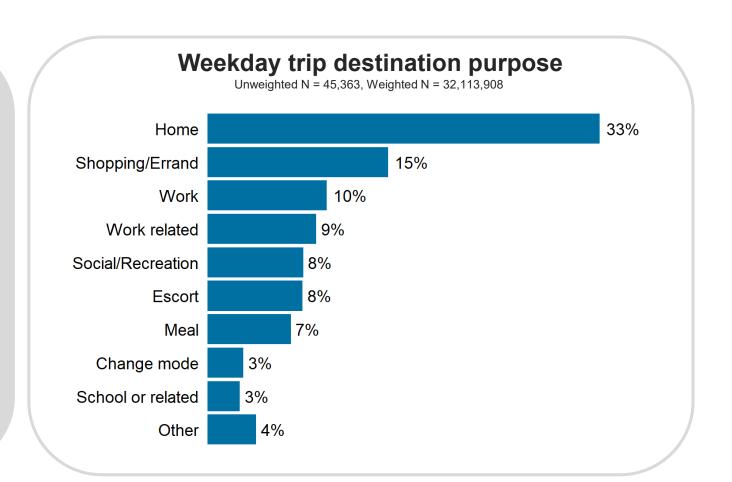
^{*} Some of the change in walking may be due to changes in survey methodology; we believe that the real change is closer to 0%.

Citywide Weekday Travel Profile – Trip Destination Purpose

Most frequent weekday trip purposes:

- 33% of trips were trips home.
- 15% of trips were for shopping or running errands.
- 19% of trips were for work or work-related reasons.

Note: Purpose refers to the "purpose for traveling to the final trip destination."



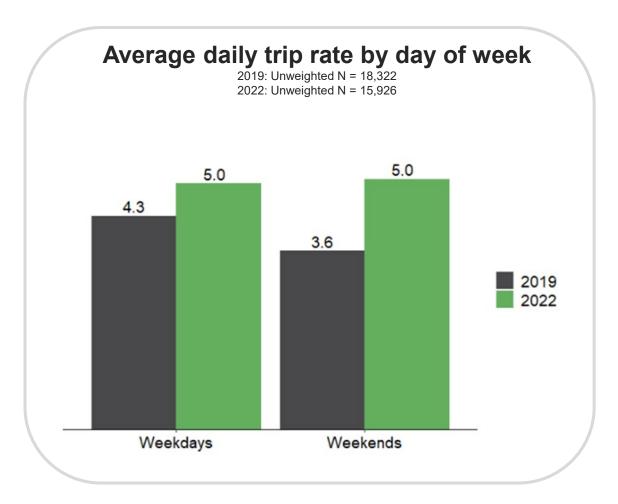


Daily Trip Rate

Citywide average daily trip rate:

5.0

The citywide average trip rate has increased in comparison to previous iterations of the survey, up from 4.1 in 2019.



*Note that these numbers are unweighted data. Differences in weighted data may differ slightly.



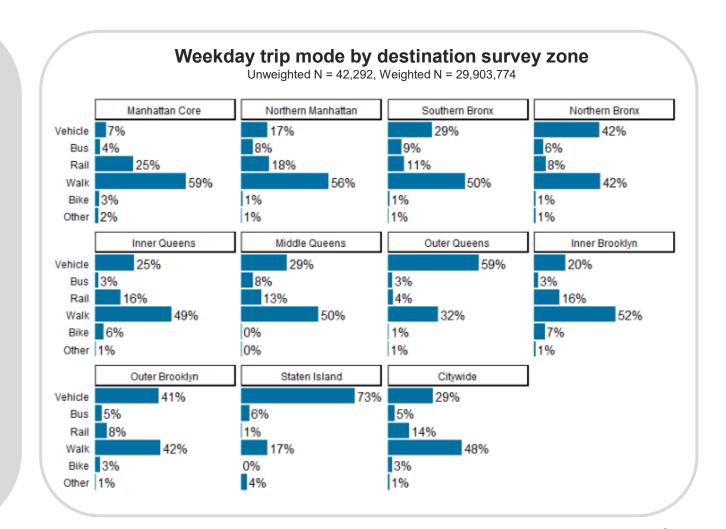
Weekday Trip Mode

Staten Island has the highest share of vehicle trips (73%) and the lowest share of walk trips (17%) out of all zones.

59% of trips ending in Manhattan Core are walk trips – 11 percentage points higher than citywide.

7% of trips ending in Manhattan Core are vehicle trips – 22 percentage points lower than citywide.

Note: Trips with destinations outside of New York City are not included in this figure.

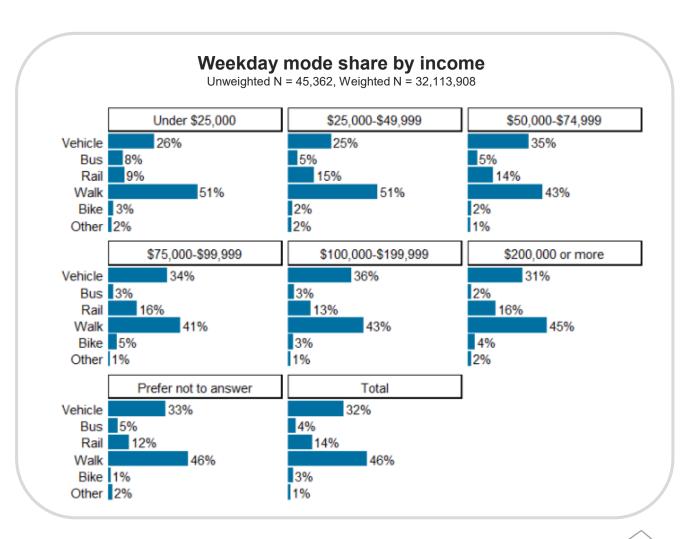




Weekday Mode Share by Income

Individuals with household income below \$50,000 have the highest walk mode share (51%) and share of trips by vehicle (25-26%).

More than 30% of trips for individuals with a household income of \$50,000 or above are vehicle trips.

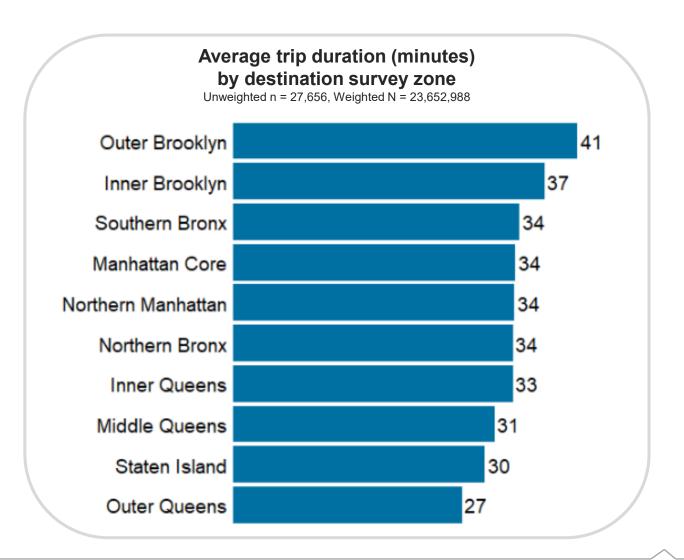




Trip Duration

Trips to Outer Brooklyn and Inner Brooklyn have the longest average duration.

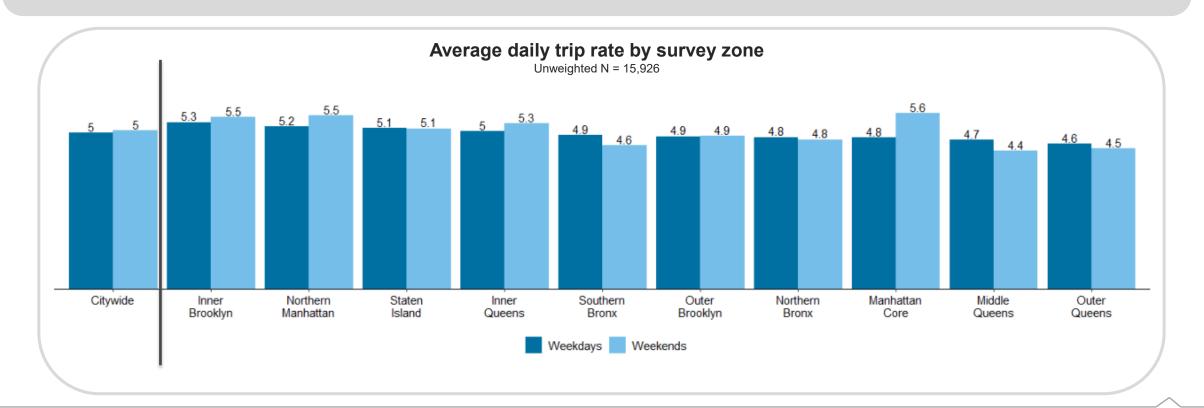
Trips to Staten Island and Outer Queens have the shortest average duration.





Daily Trip Rate by Day of Week

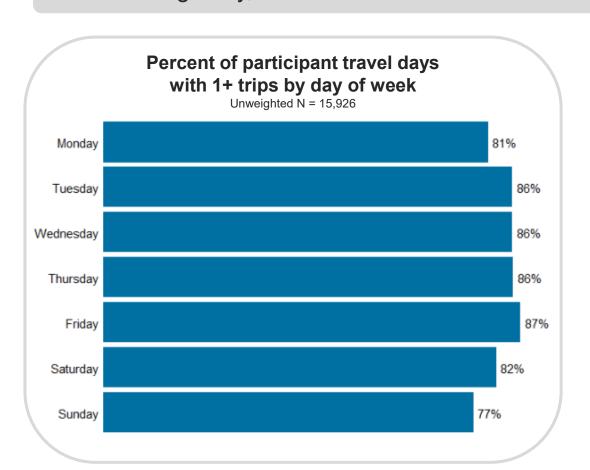
For weekdays, Inner Brooklyn has the highest overall trip rate with residents taking an average 5.3 trips. For weekends, Manhattan Core has the highest overall trip rate with residents taking an average of 5.6 trips.

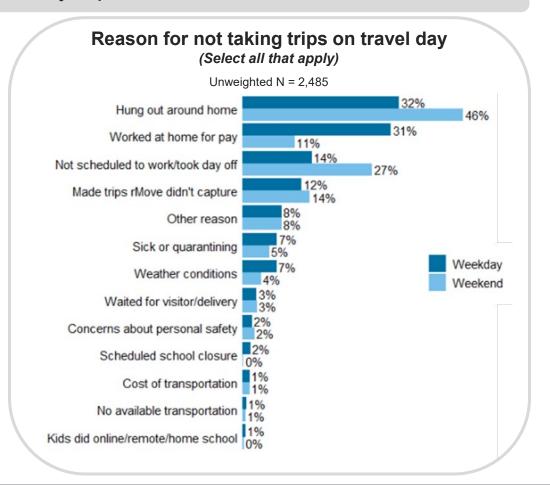




No Travel Days

On an average day, 16% of New Yorkers do not make any trips.







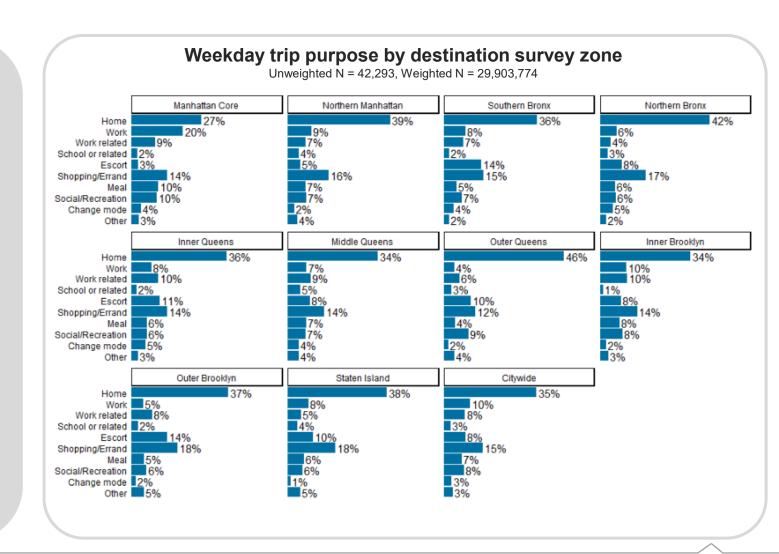
Weekday Trip Purpose

29% of weekday trips ending in the Manhattan Core were work or work-related trips – 11 percentage points higher than citywide.

27% of weekday trips ending in the Manhattan Core were made for the purpose of going home – 8 percentage points lower than citywide.

Note: Trips with destinations outside of New York City are not included in this figure.

Purpose refers to the "purpose for traveling to the final trip destination."





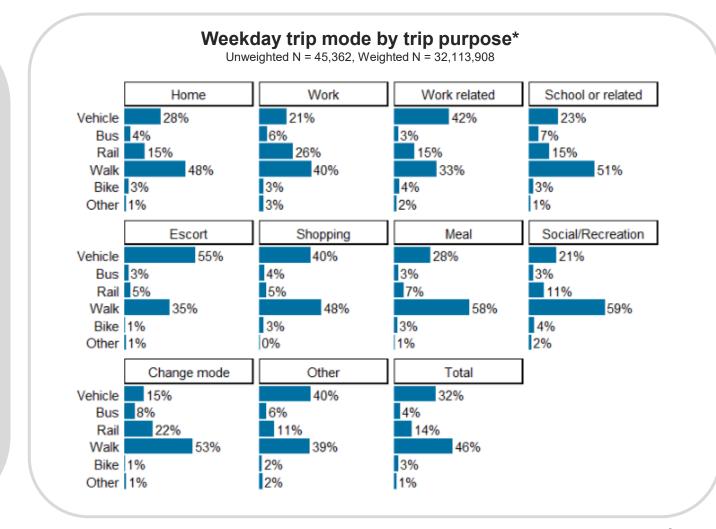
Weekday Trip Mode Share by Trip Purpose

32% of weekday trips to work are made using bus or rail.

Weekday trips made for work-related reasons and trips made for the purpose of escorting someone else to a destination are more likely to be made using a vehicle.

Weekday trips made to go home, to work, to school, to change modes, to shop, for eating, and for social/recreation purposes are more likely to be walking trips.

Note: Purpose refers to the "purpose for traveling to the final trip destination."







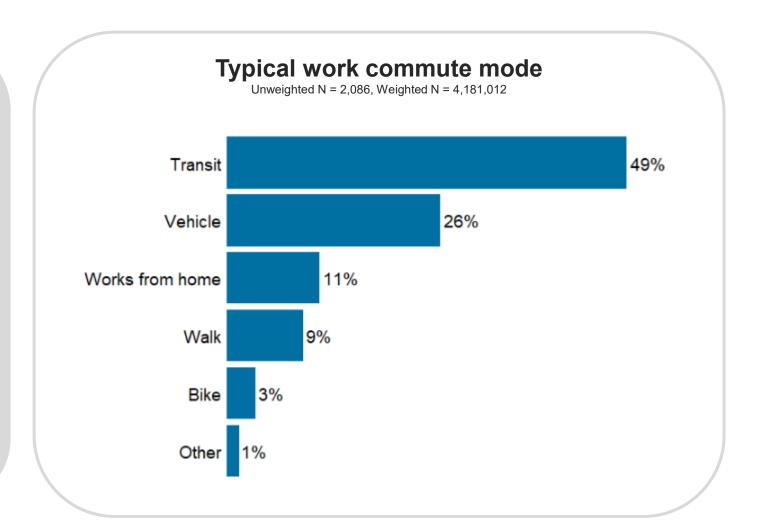
Work and School Travel Behavior

Work Commute Travel Behavior

49% of employed New Yorkers report typically commuting to work by transit, down from 59% in 2019.

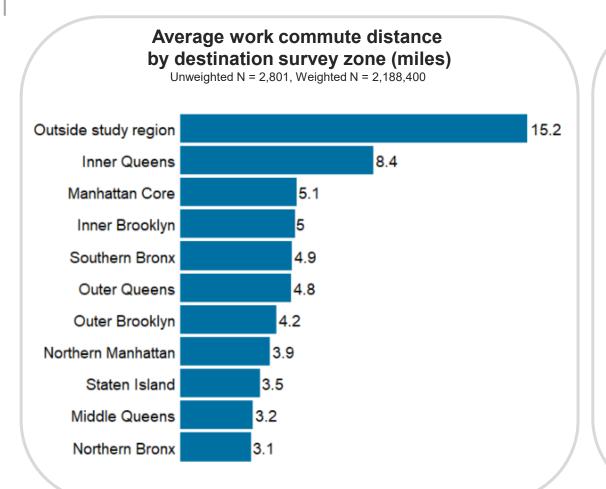
61% of employed New Yorkers report typically commuting to work using sustainable modes, down from 66% in 2019.

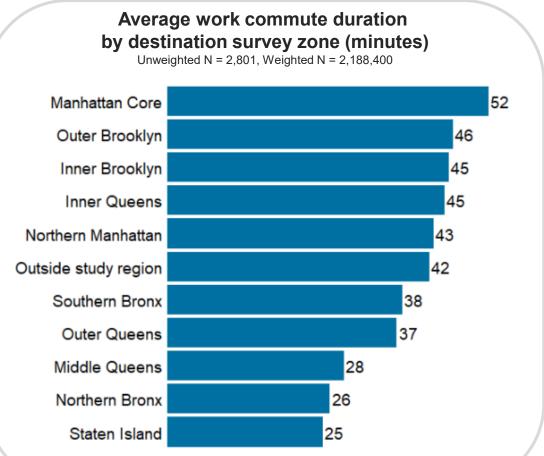
11% of employed New Yorkers typically work from home, up from 8% in 2019.





Work Commute Distance and Duration







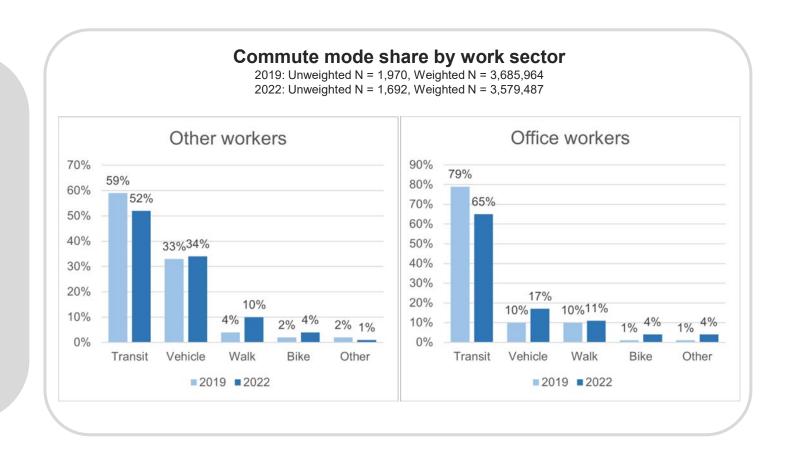
Commute Mode by Work Sector

For office workers:

- Transit share is down: 79% to 65%
- Vehicle share is up: 10% to 17%

For all other workers:

- Transit share is down: 59% to 52%
- Walk share is up: 4% to 10%

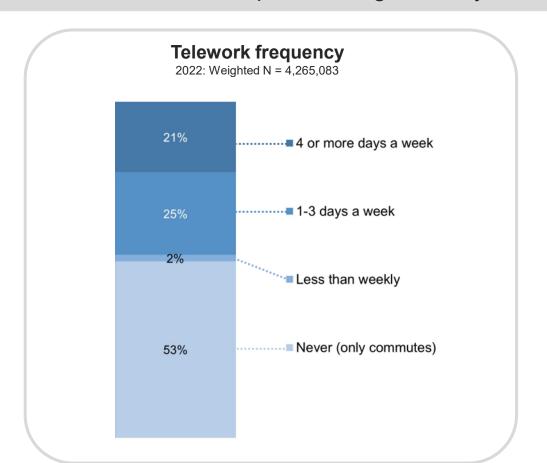


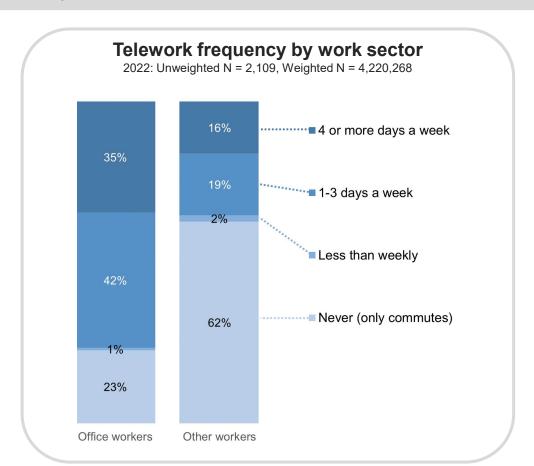
Note: Office workers are defined as those working in the following industries: financial services, professional and business services, and technology and telecommunications.



Remote Work Status

77% of office workers report working remotely 1 or more days a week





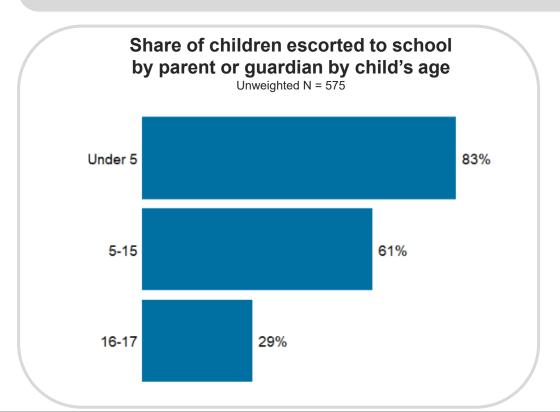
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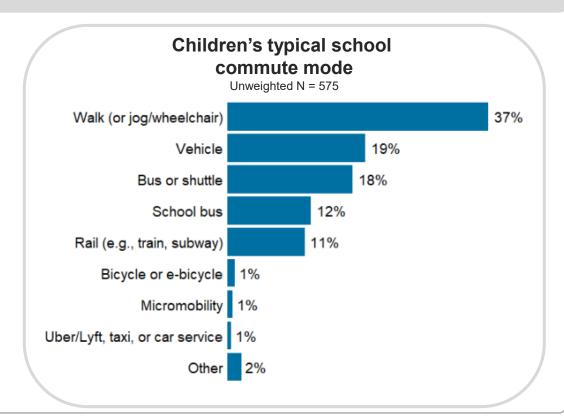


Children's school commute

Most children under age 15 are escorted to school by a parent or guardian. 29% of children aged 16-17 are accompanied to school, an increase of 10% from 2019.

Children predominately walk to school.





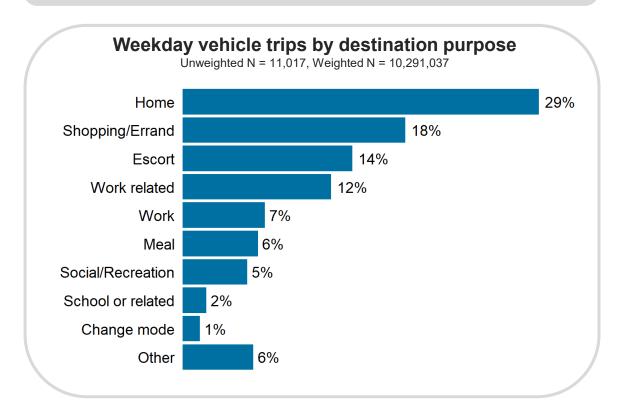


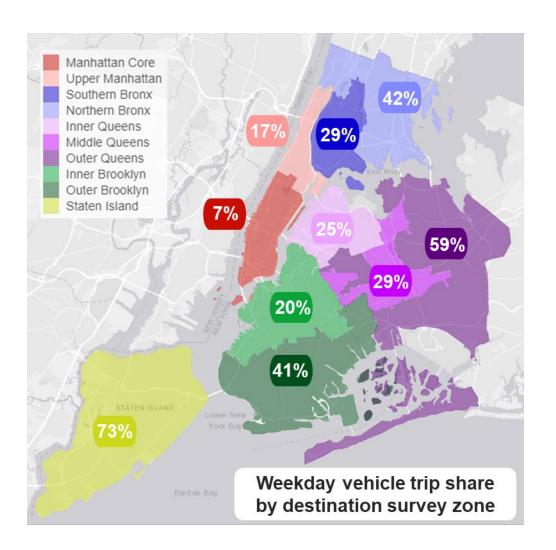


Vehicle Behavior and Ownership

Weekday Vehicle Trip Profile

The largest share of vehicle trips are made for the purpose of going home (29%).

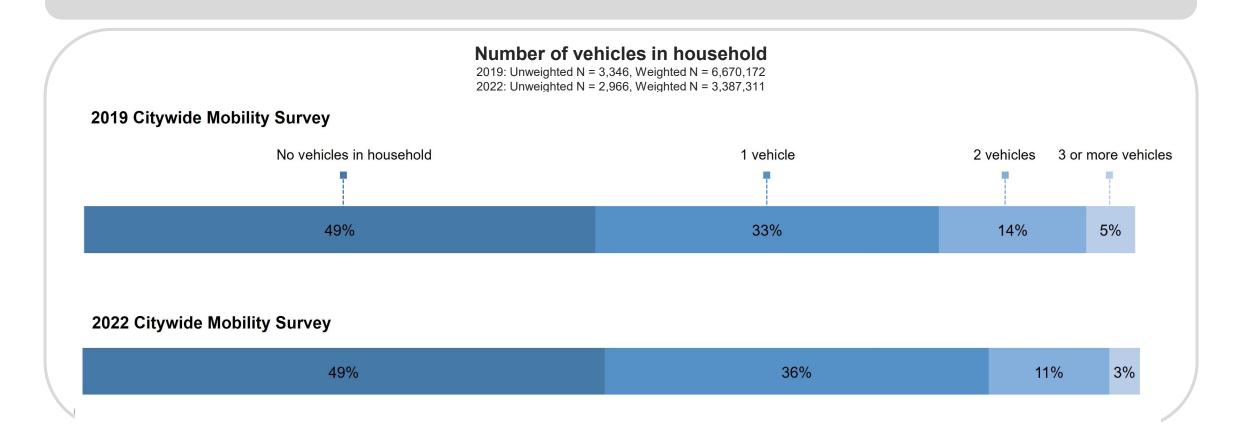






Vehicle Ownership

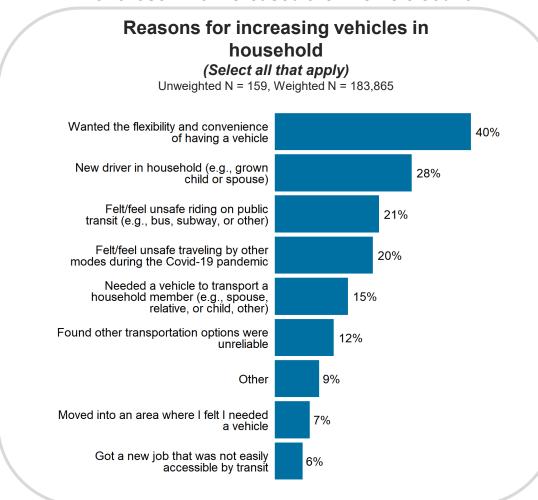
51% of New Yorkers have at least one vehicle in their household, the same proportion as 2019.



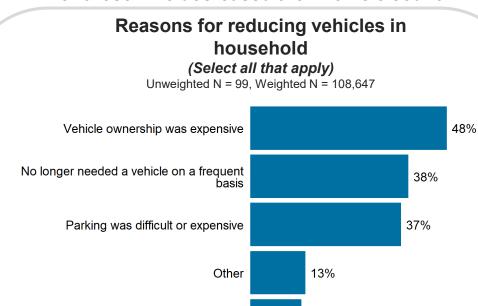


Changes in Vehicle Ownership





For those who decreased their vehicle count



12%

Started using public transit

Started riding a bicycle

service such as Lyft/Uber

Didn't feel comfortable driving in New

Started using a smartphone-app ride

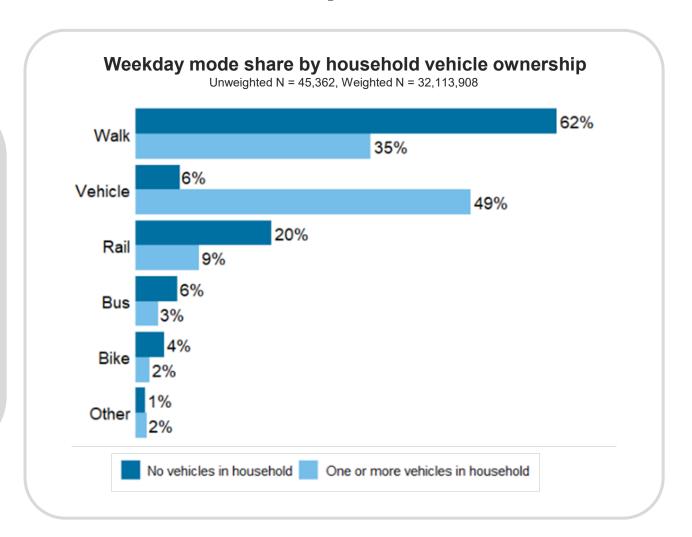


Weekday Mode Share by Vehicle Ownership

Participants in zero-vehicle households make:

- 27% more walk trips
- 11% more rail trips
- 3% more bus trips
- 43% fewer vehicle trips

in comparison to participants in households with one or more vehicles.

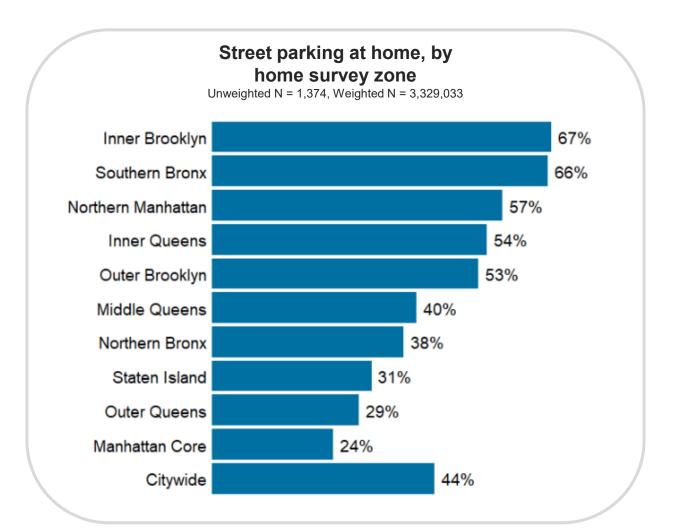




Parking Location at Home

New Yorkers living in Inner Brooklyn (67%) and Southern Bronx (66%) are the most likely to typically park their vehicles on the street when at home.

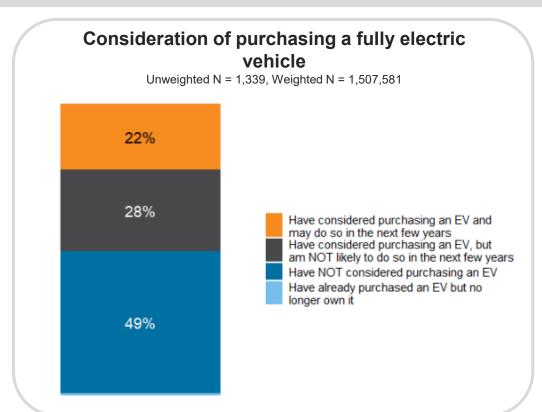
Residents of Manhattan Core are the least likely to typically park their vehicles on the street at their homes (24%).

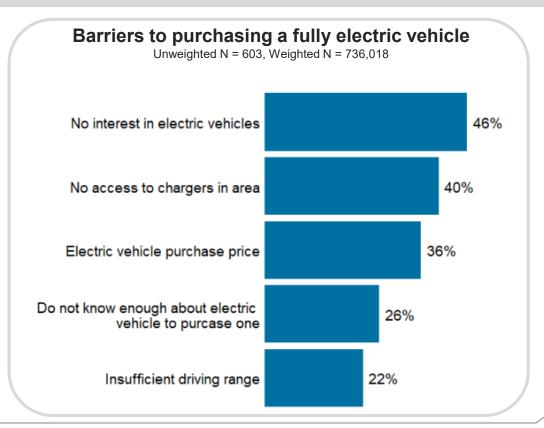




Electric Vehicles

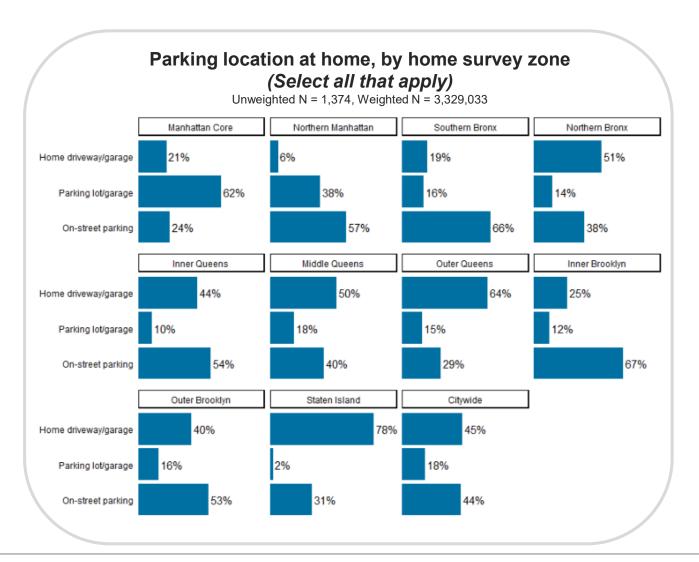
1% of New Yorkers currently have an EV. Of those who don't but do have a vehicle, 22% have considered purchasing an EV and may do so in the next few years. The biggest barrier among those not considering purchasing an EV is an overall lack of interest in EVs (46%).







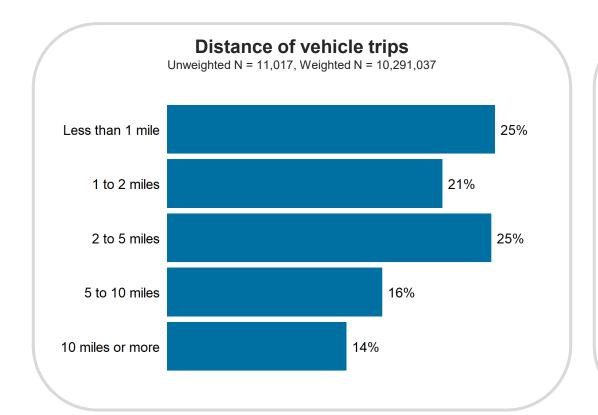
Parking Location at Home

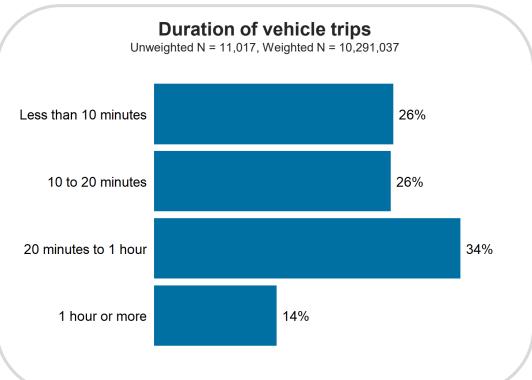




Vehicle Trip distance and Duration

70% of vehicle trips are 5 miles or less with 25% of trips under 1 mile. 86% of vehicle trips are 60 minutes or less with 52% of trips under 20 minutes.



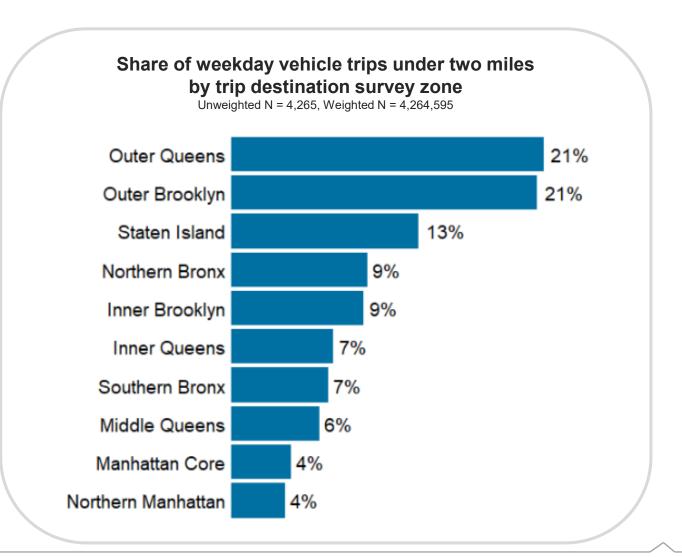




Weekday Vehicle Trips Under Two Miles

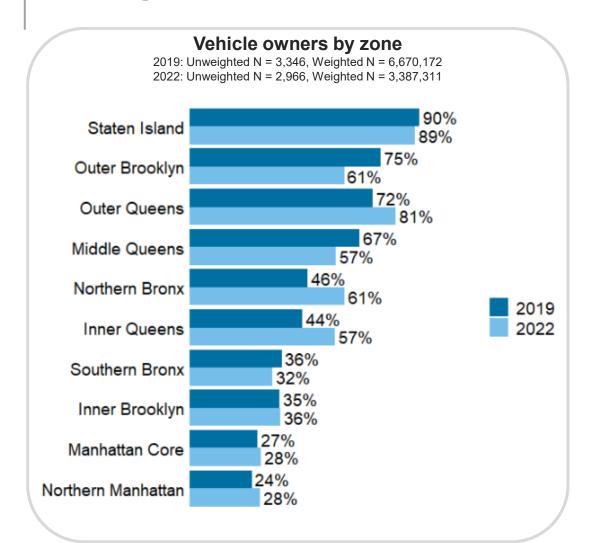
46% of citywide weekday vehicle trips are 2 miles or less.

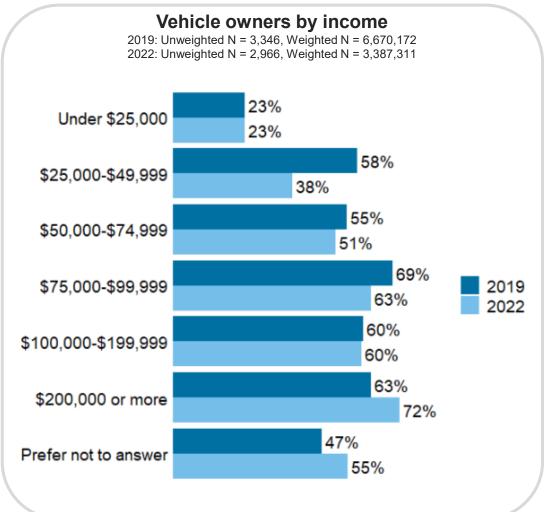
Outer Queens and Outer Brooklyn have the largest share of weekday vehicle trips under two miles of all survey zones (21%).





Changes in Vehicle Ownership





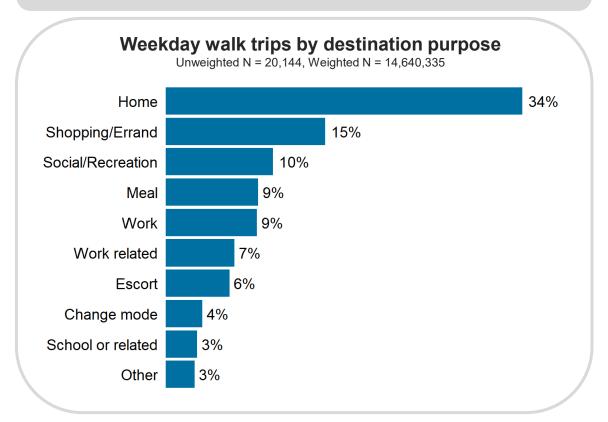


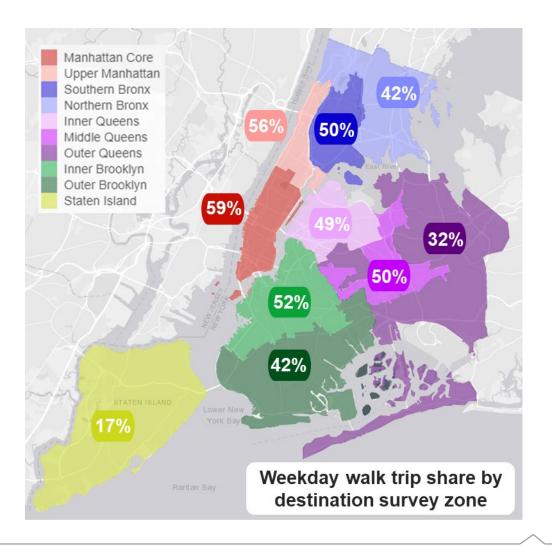


Pedestrian Behavior

Weekday Walk Trip Purpose

About one-third (34%) of weekday walking trips are made for the purpose of going home.

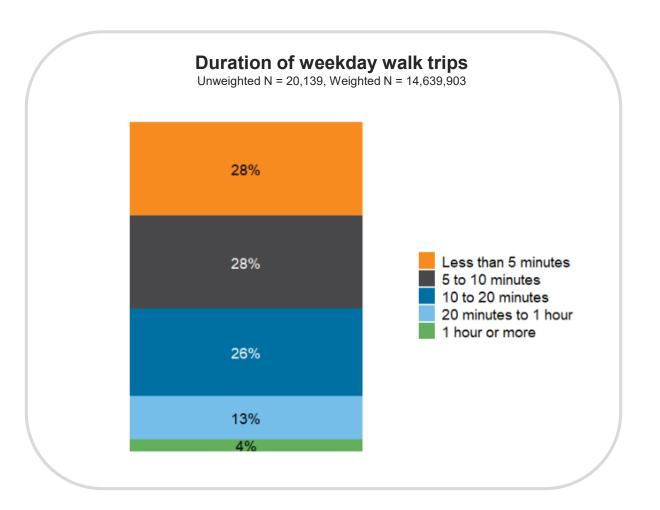






Weekday Walk Trip Duration

89% of weekday walk trips are 1 mile or less. 83% of weekday walk trips are 20 minutes or less with 57% of trips under 10 minutes.



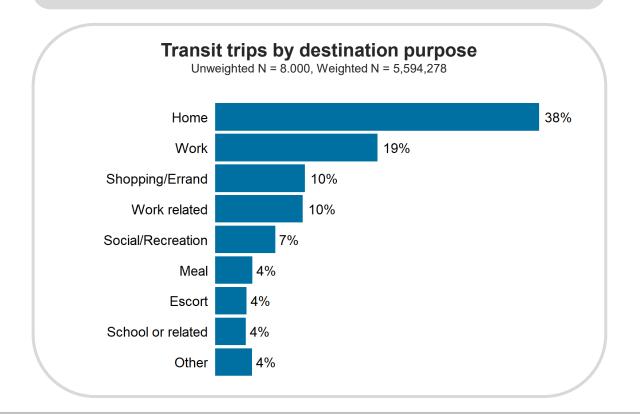


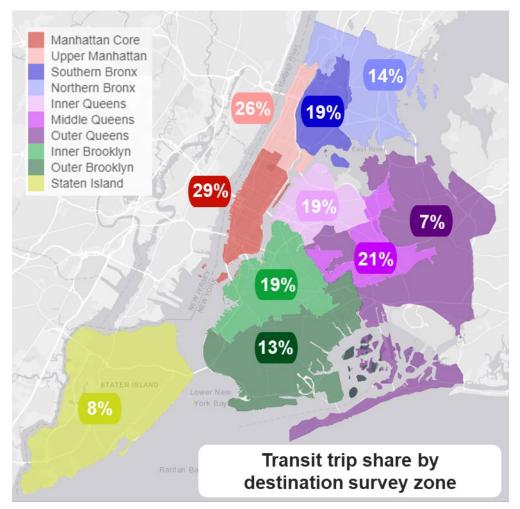


Transit Services Usage

Transit Trip Profile

The majority of transit trips are made for the purpose of going home and going to work.

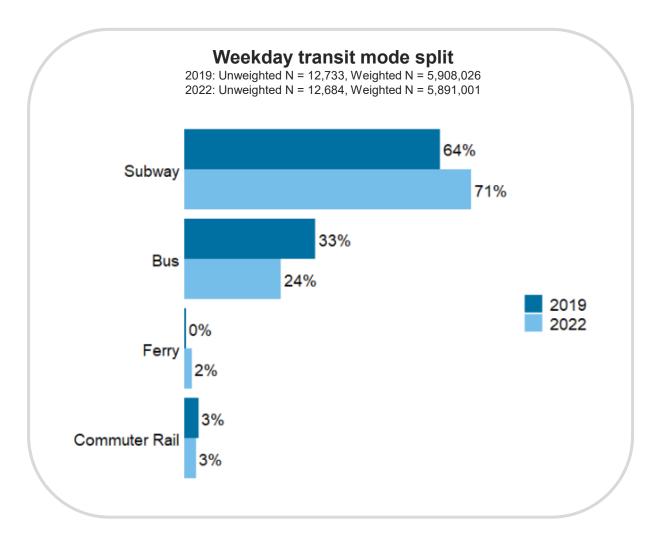






Type of Transit Mode Used

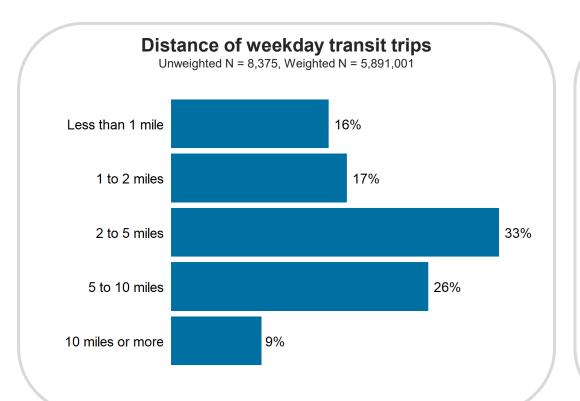
The most common transit mode used by New Yorkers in 2022 is the subway, used for 71% of weekday transit trips. About one-quarter (24%) of weekday transit trips are made using buses.

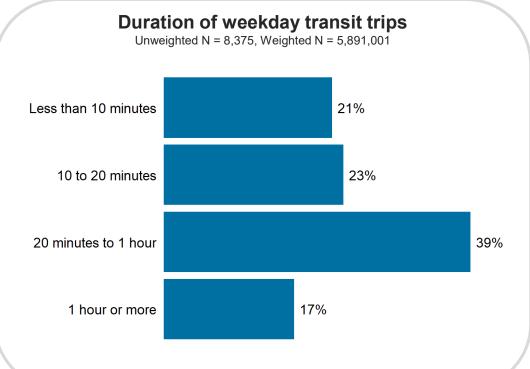




Weekday Transit Trip Distance and Duration

66% of weekday transit trips are 5 miles or less with 33% of trips under 2 miles. 83% of weekday transit trips are 60 minutes or less with 44% of trips under 20 minutes.







Weekday Transit Trip Access and Egress

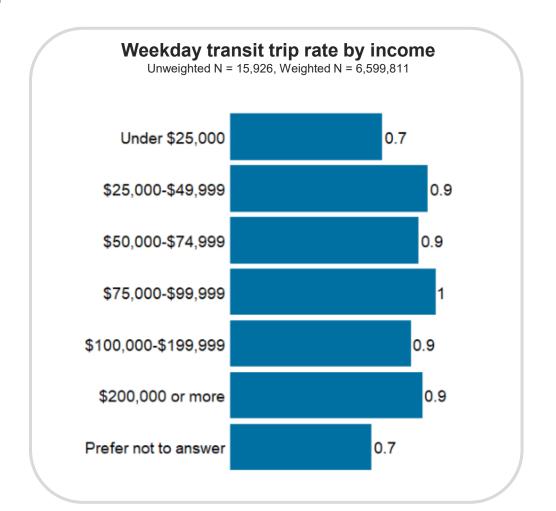
The majority of New Yorkers walk to and from transit.

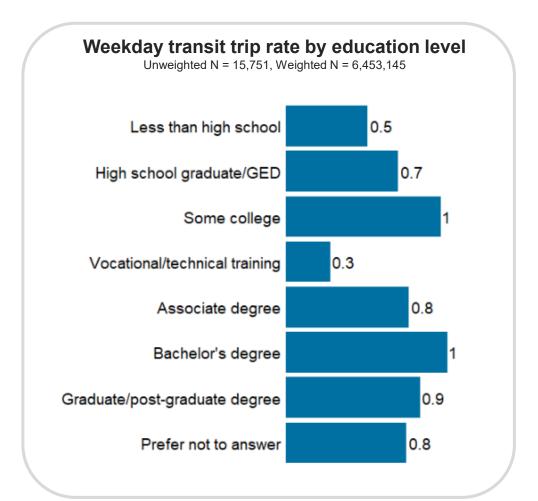
Mode	Connecting to transit	Connecting from transit	
Walk	96%	97%	
Vehicle	1%	1%	
For-hire vehicle	0.3%	0.4%	
Bicycle	1%	0.4%	
Other	2%	1%	

Access Trips: Unweighted N = 12,956, Weighted N = 7,937,239 Egress Trips: Unweighted N = 13,218, Weighted N = 8,027,494



Weekday Transit Trip Rates





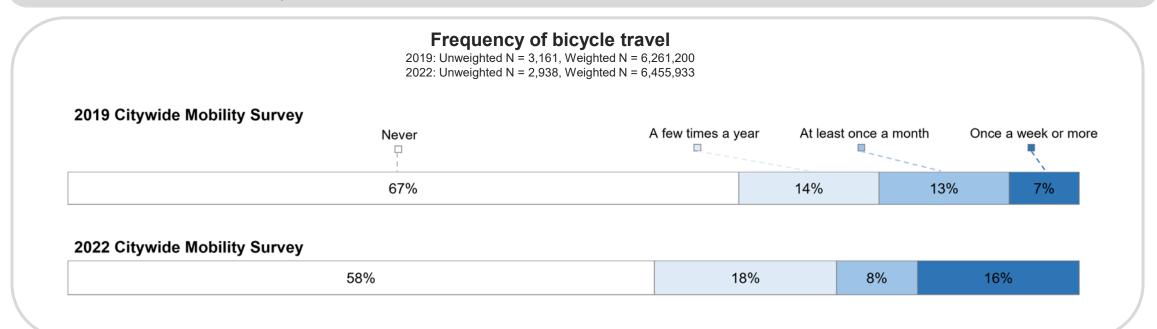




Bicycle Frequency

42% of New Yorkers ride a bike at least once a year, up from 33% in 2019.

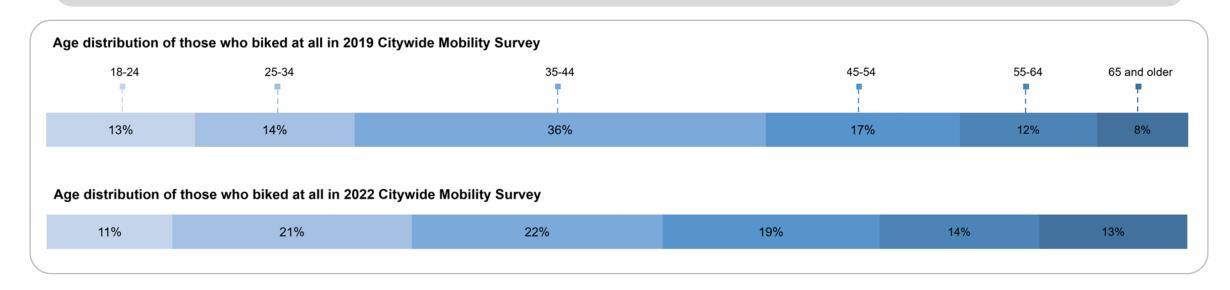
16% of New Yorkers rode a bike within the past seven days with **12%** riding a bike at least two days within the past seven days.





Age Distribution of NYC Residents Who Biked*

Between 2019 and 2022, NYC's biking population saw a shift towards a more even distribution among age groups, with a higher percentage of individuals aged 45 and older joining the biking community, making it closer to the age distribution of NYC adults.



Age distribution of all NYC adults, from 2022 Citywide Mobility Survey

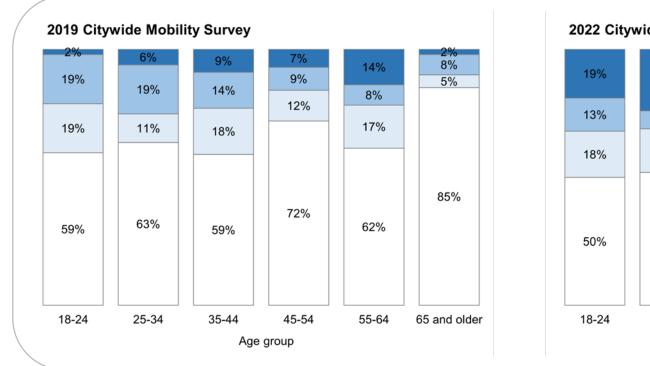


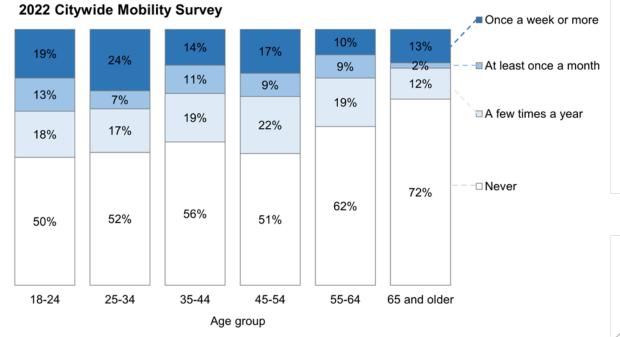
(*people who biked at all)



Frequency of Biking by Age Group

Biking increased across all age groups between 2019 and 2022, and the share of New Yorkers that bike frequently also increased across all age groups.



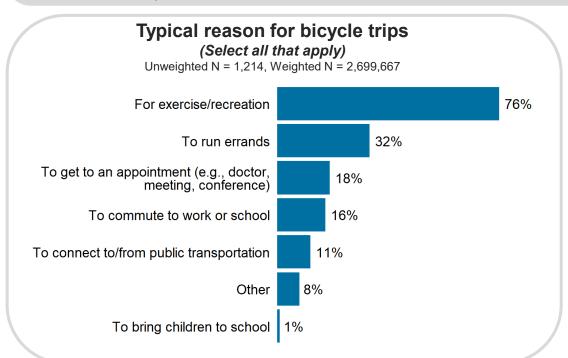


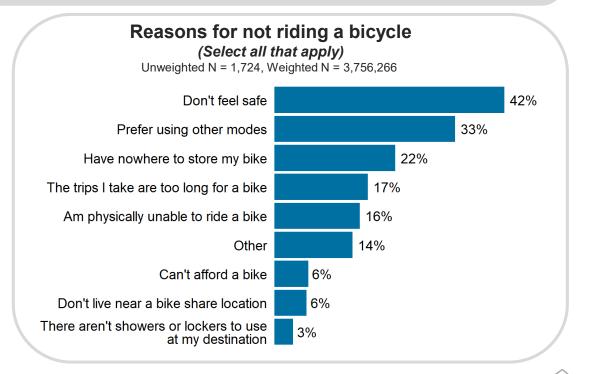


Attitudes Towards Riding A Bicycle

76% of New Yorkers who bike typically make bicycle trips for recreation and exercise, and 45% have made a bicycle trip for a non-recreation purpose.

42% of New Yorkers never ride a bicycle because they don't feel safe and 33% never ride a bicycle because they prefer other modes.





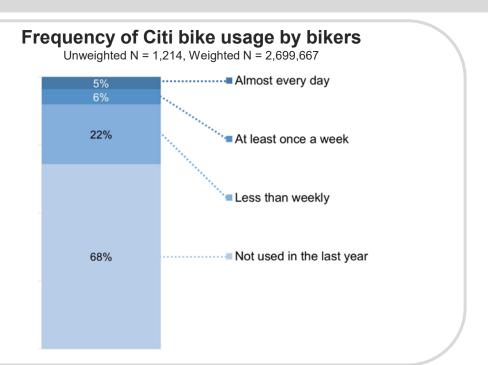


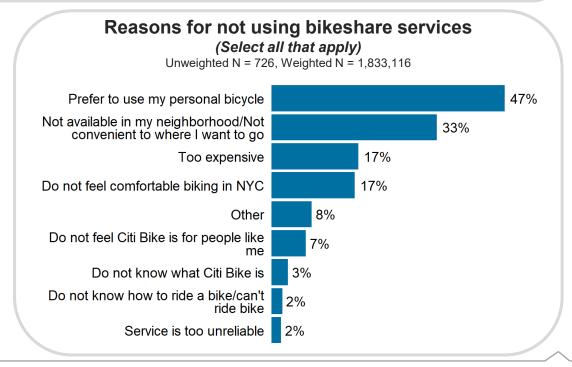
Bikeshare Services Usage

13% of all New Yorkers have used a Citi Bike within the last year, up from 11% in 2019.

Among bike riders, 32% have used Citi Bike in the last year (similar to 2019).

New Yorkers who never use bikeshare services do so because they prefer to use their personal bike (47%) and/or because these services are not available at their desired origin/destination (33%).

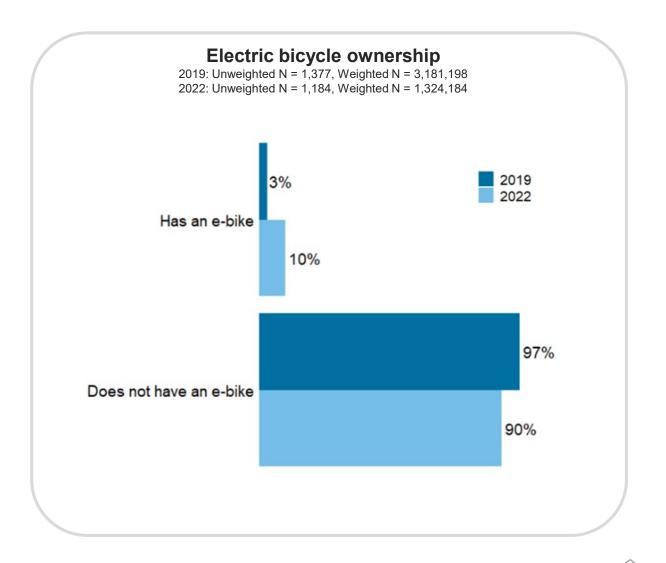






Electric Bike Ownership

More New Yorkers own an e-bike in 2022 (10%) compared to 2019 (3%).

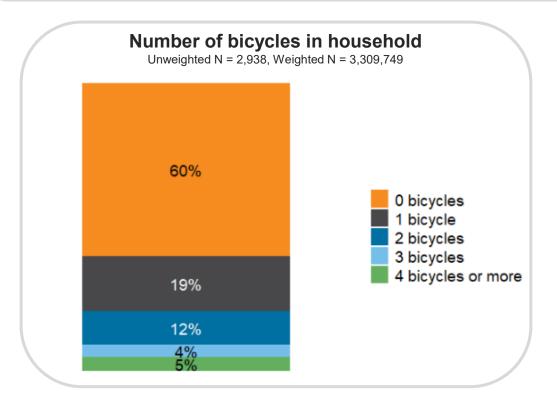


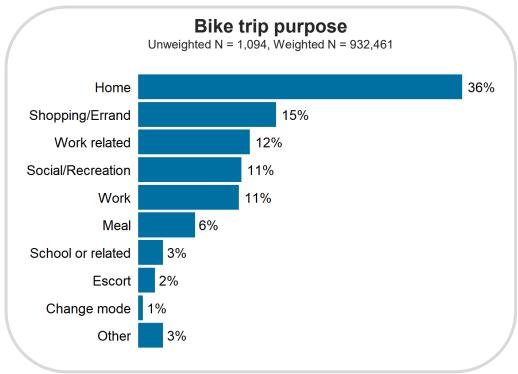


Bicycle Ownership and Use

40% of households in New York own a bicycle – in previous years, this proportion was 38% in 2018 and 48% in 2019.

The plurality of bike trips are trips home (36%), and 15% are for shopping or running errands.

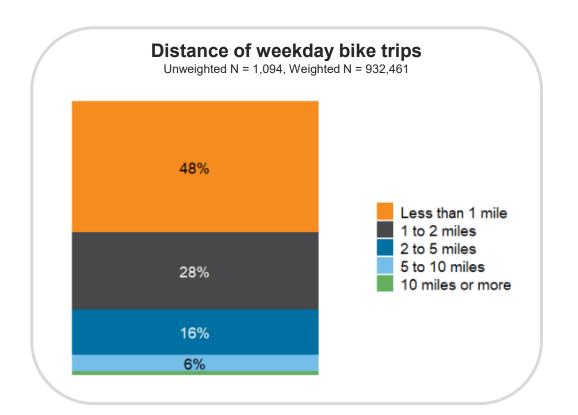


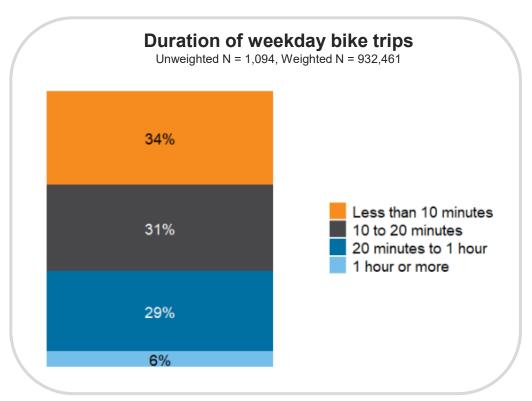




Bike Trip Distance and Duration

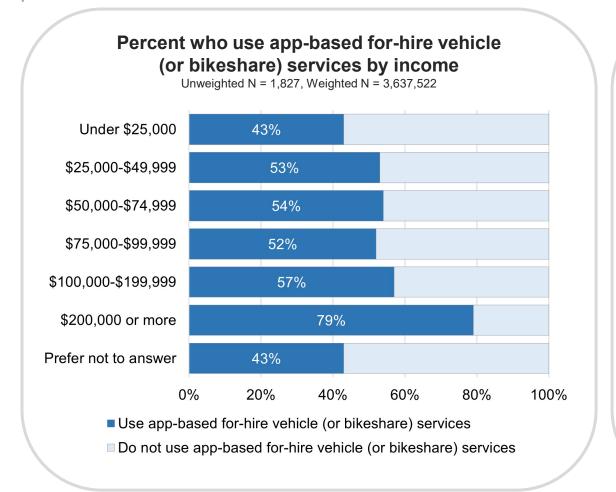
94% of weekday bicycle trips are 5 miles or less with 76% of trips under 2 miles. 94% of weekday bicycle trips are 60 minutes or less with 65% of trips under 20 minutes.

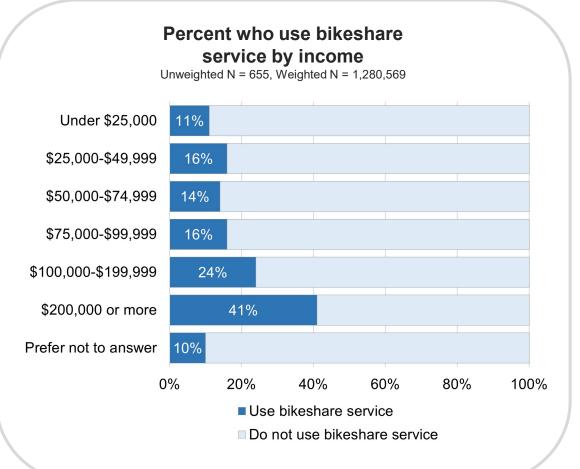






App-based Services Users By Income









Micromobility Usage

E-Bikes and Micromobility Devices

4% of New Yorkers **have** an e-scooter in their household.

9% of New Yorkers **use** some type of micromobility device, standing e-scooters being the most common (5%).

4% of New Yorkers **have** an e-bike in their household.

Micromobility Device	% of NYC households that own a micromobility device		
E-scooter	3.6%		
Electric bicycle	3.8%		

Types of micromobility devices used

(Select all that apply)

Unweighted N = 2,938, Weighted N = 6,455,933

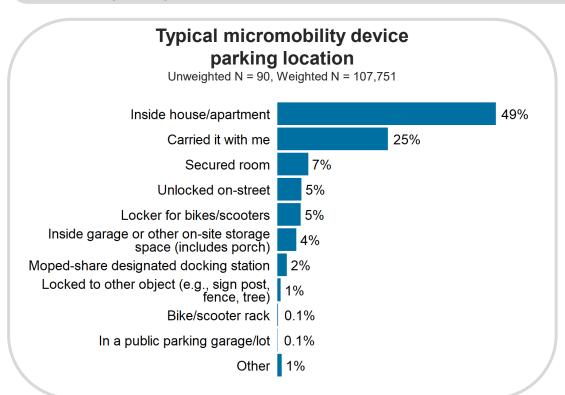
Types of Micromobility Devices Used	% of NYC residents	
Standing e-scooter (e.g., Ninebot, GOTRAX)	4.6%	
Standing e-scooter share (e.g., Bird, Lime)	0.9%	
Moped (not shared)	0.6%	
Moped-share (e.g., Revel)	1.0%	
Other electric (e.g., e-skateboard, hoverboard, e-unicycle, or other small electric device)	1.4%	
Other non-electric (e.g., personal kick scooter, skateboard, rollerblade, or other small device)	1.6%	
None of the above	91.1%	

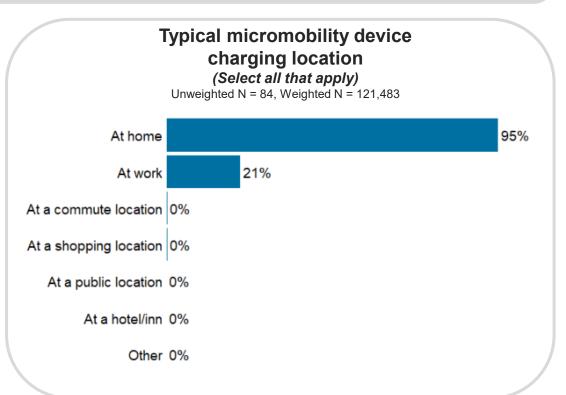


Micromobility Device Parking and Charging

49% of New Yorkers who own a micromobility device typically park it inside their home.

The primary places New Yorkers reported charging their micromobility device were at home (95%) and at work (21%)



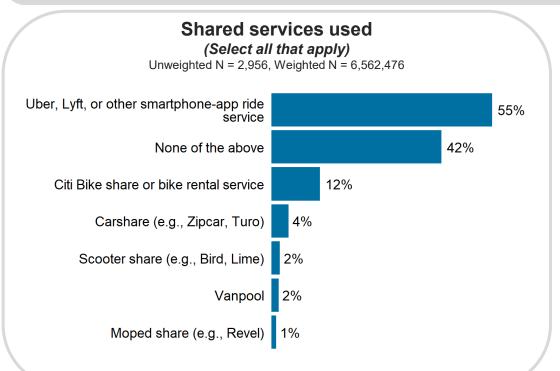


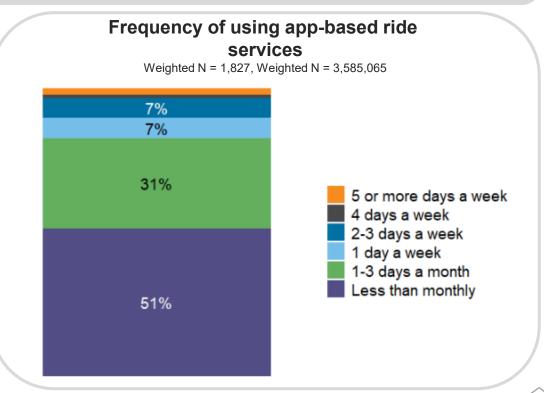


Shared Services

58% of New Yorkers use smartphone app-based ride services, a slightly lower share than in previous years.

61% reported using app-based ride services in 2019 and 50% in 2018. Among the 46% of New Yorkers that do not use app-based for-hire vehicles, 21% do not own smartphones.

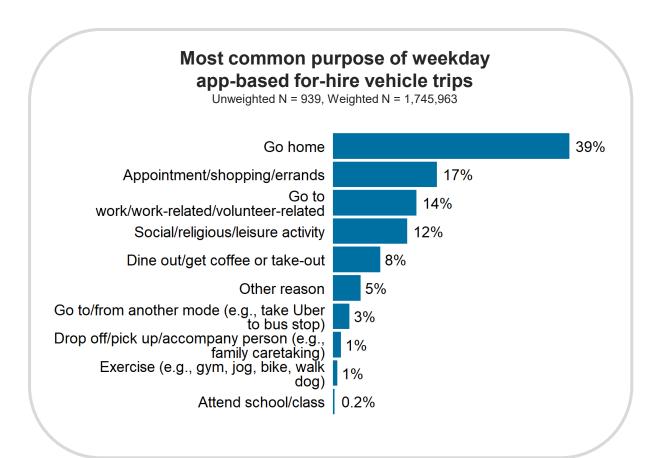






App-based For-hire Vehicle Behavior

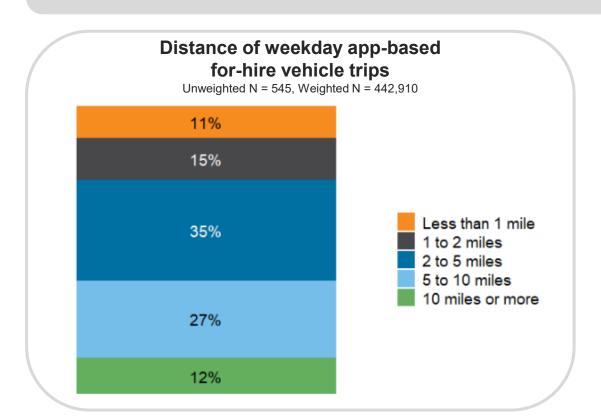
New Yorkers use app-based for-hire vehicles primarily for making trips home (39%) followed by going shopping and running errands (17%), going to work, work-related, or volunteer-related (14%), and for social, religious, or leisure activities (12%) during the weekdays.

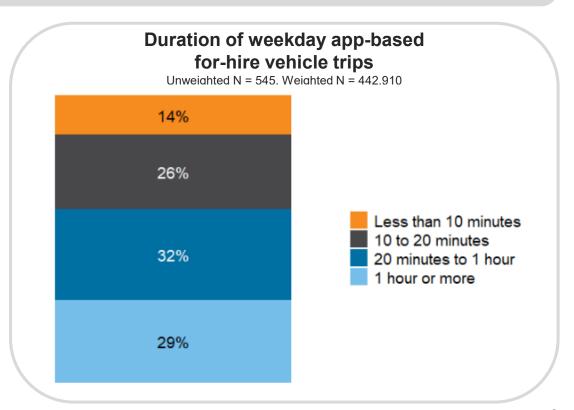




App-based For-hire Vehicle Distance And Duration

61% of app-based for-hire vehicle trips are 5 miles or less with 26% of trips under 2 miles.
71% of app-based for-hire vehicle trips are 60 minutes or less with 40% of trips under 20 minutes.









Delivery Services Usage

Changes in Deliveries and online shopping

New Yorkers are receiving more packages at home and shopping online more often than in 2019. On a typical day, 32% of New Yorkers received a package at home in 2022, up from 20% in 2019.

Delivery services used and online shopping

2019: Unweighted N = 17,194, Weighted N = 6,670,182 2022: Unweighted N = 15,734, Weighted N = 6,599,811

Type of Delivery	2019 %	2022 %	% Change 2022 vs. 2019
Had deliveries on travel day	32%	42%	+10%
Take-out/prepared food delivered to home	4%	8%	+4%
Someone came to do work at home	4%	3%	-1%
Groceries delivered to home	2%	3%	+1%
Received package at home	20%	32%	+12%
Received person packages at work	2%	1%	-1%
Received packages at another location	2%	2%	0%
Other item delivered to home	2%	1%	-1%
Bought goods online and then picked up in store	n/a	1%	n/a
None of the above	68%	58%	-10%
Made an online purchase	16%	18%	+2%

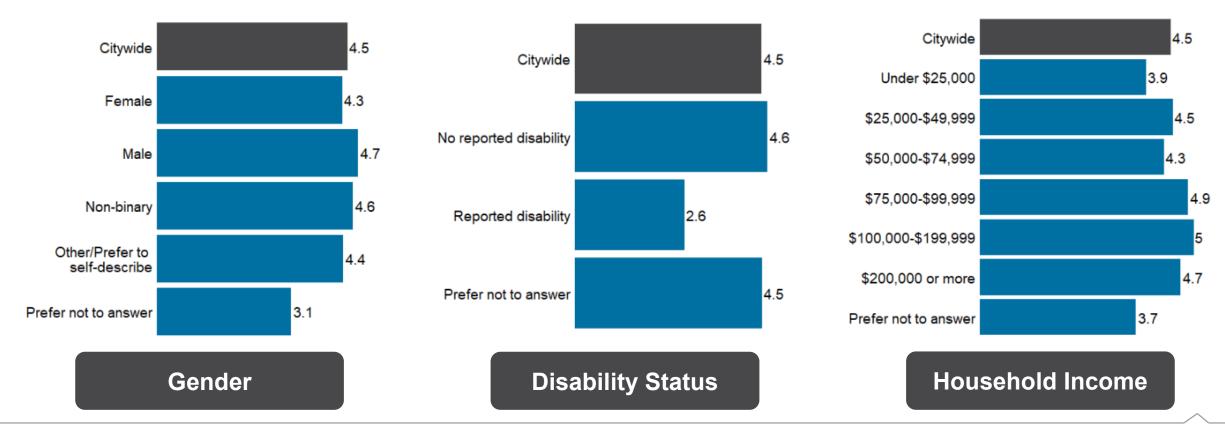




Equity Analysis

Equity Analysis of Daily Trip Rates

Daily trip rates differ from the citywide average across key demographic measures.



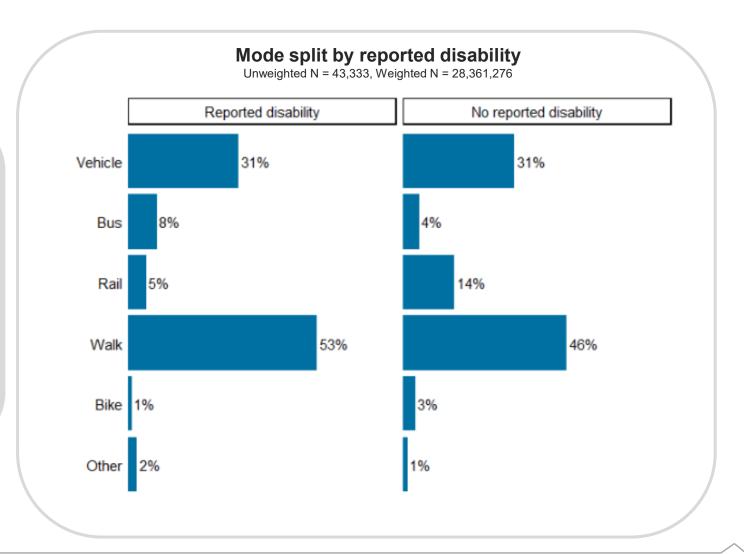


Effects of Disability Status on Travel Behavior

Participants who reported a disability make:

- more trips by bus
- fewer rail trips
- more walking trips

in comparison to all participants.

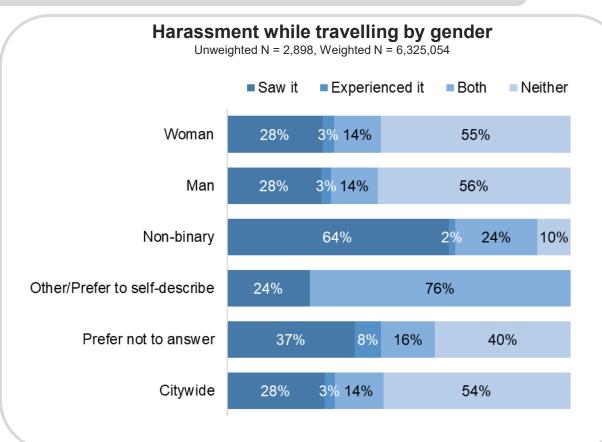




Frequency Of Harassment While Traveling

In the past week, have you seen and/or experienced visual, verbal, or physical harassment/violence when traveling?

Harassment while traveling by home survey zone Unweighted N = 2,898, Weighted N = 6,325,054 ■ Saw it Experienced it Both Neither Inner Brooklyn 35% 4% 14% 47% Northern Manhattan 29% 21% 48% Manhattan Core 48% 34% 2% 16% Outer Brooklyn 30% 2% 15% 52% Inner Queens 27% 6% 12% 55% Middle Queens 26% 9% 10% 56% Southern Bronx 28% 3% 12% 57% Northern Bronx 23% 4% 15% 58% Outer Queens 22% 2%12% 64% Staten Island 2%11% 64% 22% Citywide 28% 3% 14% 54%





Changes in Street Harassment When Travelling

Compared to 2019, in 2022 more New Yorkers has either seen or experienced some form of street harassment or violence (up to 46% from 33%).

28% of New Yorkers have seen street harassment or violence in 2022, up from 20% in 2019.

