

WHO RIDES PUBLIC TRANSPORTATION



AMERICAN
PUBLIC
TRANSPORTATION
ASSOCIATION

THE BACKBONE
OF A MULTIMODAL
LIFESTYLE

PASSENGER DEMOGRAPHICS & TRAVEL

Who Rides Public Transportation

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The American Public Transportation Association (APTA) is a nonprofit international association of 1,500 public and private sector organizations, engaged in the areas of bus, paratransit, light rail, commuter rail, subways, waterborne services, and intercity and high-speed passenger rail. This includes: transit systems; planning, design, construction, and finance firms; product and service providers; academic institutions; transit associations and state departments of transportation. APTA is the only association in North America that represents all modes of public transportation.

APTA members serve the public interest by providing safe, efficient and economical transit services and products.



This publication is dedicated to John Neff, the author of the first APTA Passenger Characteristics Report in 2007, and the developer of the methods that were adapted for this current publication.

Top Line Results

KEY DEMOGRAPHICS

Age - Of all transit riders, 79% fall into the most economically active age range from 25 to 54. The balance are divided between those younger than 25 (14%) and those in the age range generally thought of as the retirement years, 65 or older.

Ethnicity - The single largest group of riders consists of white or Caucasian riders (40%). Communities of color make up a majority of riders (60%), with African-American riders comprising the largest single group (24%) within communities of color. However, there are considerable variations in these characteristics among urban areas of differing sizes.

Household size - Transit riders come from a wide mix of household sizes. A two-person household is more common (31%) than other household size. However, single person households are also very common, with 26% of riders reporting households of that size. The balance consists of households of three persons (18%) and households of four or more persons (25%).

Employment - Of all riders, 71% are employed, while 7% are students. Thus more than three-fourths of transit riders (78%) are either currently employed or preparing for employment. The balance includes 7% retired persons, 6% unemployed, 3% homemakers. Another 6% were classified as “Other” in the reports.

Workers in the Household - Most transit user households (77%) include one or more working persons. This consists of 43% with one working person and another 34% with two or more working persons.

Income - According to the Census Bureau, a total of 13% of U.S. households have household incomes of less than \$15,000, but among transit using households, the comparable figure is 21%. On the other hand, at the top level of the income spectrum (\$100,000 or more), the percent of all U.S. households (23%) and transit-using households (21%), is very similar.

Education - More than half (51%) of transit riders hold a bachelor’s degree or some level of graduate education. Relatively few (8%) have less than a high school education. One percent (1%) were classified as “Other” in the reports. The balance, 40%, completed high school or some college.

Gender - Most transit riders in the United States are women (55%).

Vehicle Availability - Among all riders, 54% indicated there is a vehicle available to them on an ongoing basis, while 46% said there was no vehicle available.

Driver’s License - Almost two-thirds of transit users, 65%, have a driver’s license, an indication that they have some flexibility in travel mode even if a vehicle is not immediately available for a given trip.

Language - Among all transit users, 85% speak English as their primary language, while 12% speak Spanish and 3% speak other languages.



KEY TRAVEL CHARACTERISTICS

Trip Purpose - A total of 87% of public transportation trips involve direct economic impact on the local economy. This includes getting to or from work (49%) or shopping (21%) and recreational spending in the local economy (17%). Since we know that 71% of the riders are employed, clearly the fact that 49% of riders' trip purposes were getting to or from work means that many employed riders happened to be making trips for other purposes when surveyed. One indicator of these other uses of transit is an increase in trips for shopping since the 2007 study, when only 8.6% of trips were for shopping. Shopping trips increased to 21% in the current study.

Reasons for Using

Public Transit -

When asked to describe in their own words their reasons for using public transit, a total of 60% of the reasons given involve either a preference for using transit for the economy of it (16%) or just a preference for intangible benefits such as convenience (44%). The most frequent response (44% of reasons given) was that they simply prefer transit for a variety of intangible reasons, including that they find it more convenient than driving, that they save time, or help the environment

or they simply say that they "prefer it" without elaborating. In addition to these reasons, other motives cited involve a preference for transit based on cost savings (16%). In particular, they mention saving on gasoline and parking costs. Finally, 40% say they have no real alternative because they lack money or lack a vehicle, or that transit is the only transportation available to them.

Frequency of Using

Public Transit -

More riders use public transit five days a week (50%) than any other usage pattern. In addition, another 13% use it six or seven days a week. Studies tend to find that among the five day riders, commuting is the primary trip purpose, but it is among the primary trip purposes for many others as well.

Access Mode - More than two-thirds of transit users (69%) walk to their stop or station. Another 11% drive to their stop, while 10% indicate that they use another form of transit. The balance are either dropped off (6%) or use another mode.

Egress Mode - On alighting from their transit vehicles, most transit passengers walk to their destination (76%). Another 16% transfer to another transit vehicle, while 4% drive, 3% get a ride, and 1% could

not be classified except as "other."

Alternate Mode - Riders were asked what alternative mode they might use if transit service were not available. The most frequent responses were that they would not make the trip (22%) or that they would use other transit options (20%). The balance, 57%, say they would find a means of travel other than public transportation. More (17%) would drive than any other non-transit mode. However, a total of 16% would either car/vanpool, get a ride or take a taxi.

Fare Media Used - Most transit riders, 86%, use a pass medium of some type to pay their fares. The use of cash, once the common fare medium, has diminished to only 11% of the ridership nationally.

Transfer Rate - Annually, half of the trips made (50%) require a transfer during those trips, and half do not.

Duration of Using Transit -

Most riders (a total of 53%) are long-term riders in that they have used transit for five or more years. This includes 29% who have used transit for five or six years and 24% who have used it for seven or more years.

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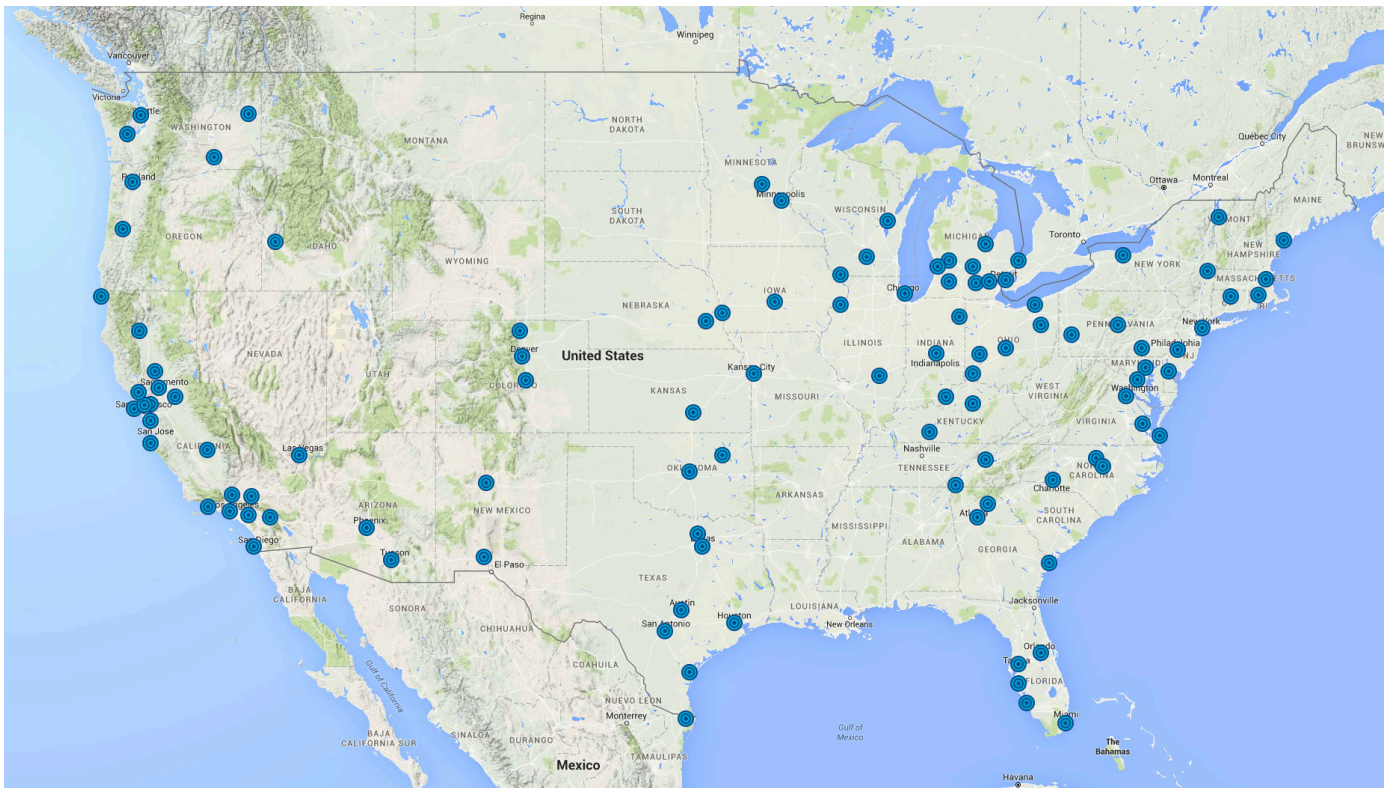
Introduction and Executive Summary

This summary of passenger characteristics of domestic United States public transit users was compiled from two hundred eleven separate passenger survey reports representing the services of one hundred sixty-three transit systems throughout the United States. The summary is based on a compilation of written reports, not a reanalysis of raw data. The surveys included were

conducted during the eight years from 2008 through 2015.

Some transit systems provided APTA with more than one report when their studies treated components of their systems such as different modes separately. Other reports prepared for Metropolitan Planning organizations (MPO's) contain data for several system operators within a single

Figure 1 Map of Locations Providing Studies for this Report



(Map courtesy of Zachary Kincade, RLS + Associates)



report. Such reports were divided by system and mode for inclusion in this summation. The 211 reports are based on a total of 695,748 respondent questionnaires. The systems reporting carry a total of 8,335,610,590 trips annually. These amount to 77% of the 10.6 billion transit trips made in the United States in 2015.

Key Elements in the Structure of this Report:

The methodology is described in full beginning on page 74. This introduction will present the reader with only a few key aspects of the report.

Results represent ridership, not individual persons.

It is important to understand that the results are based on trips taken by transit, not on individual persons. One person can, after all, make many or only a few transit trips in a given time frame. The results characterize the characteristics of the people making transit trips during a year's time. Since some people use transit often and others only a few times in a given time period, the former will be more likely than the latter to be sampled in a passenger survey. Thus they have a greater impact on the final result.

To take a simple, completely hypothetical example: If a transit system had 100 riders, 50 women and 50 men, the individual riders as a group would obviously be 50% female and 50% male. But if the women all used transit for ten trips a week and the men used it for only five trips a week, the surveys would capture responses from the women at that 2:1 ratio because the surveyors would encounter women riders at twice the rate as they encountered men. The ratio of trips in the example would be 10 female to 5 male, or 67% female and 33% male. We would correctly conclude that the ridership was 67% female, however, if survey techniques were able to observe riders as individuals, only 50% of the individual people using the transit service would be female.

Questions and responses included in the surveys meet local needs and are not uniform.

Because the surveys serve local needs, they differ from study to study in terms of whether a specific question was asked at all, the specific wording of questions, and the response ranges. Thus the effective number of respondents and riders represented vary from item to item. For this reason, four statistics are provided with each topic.

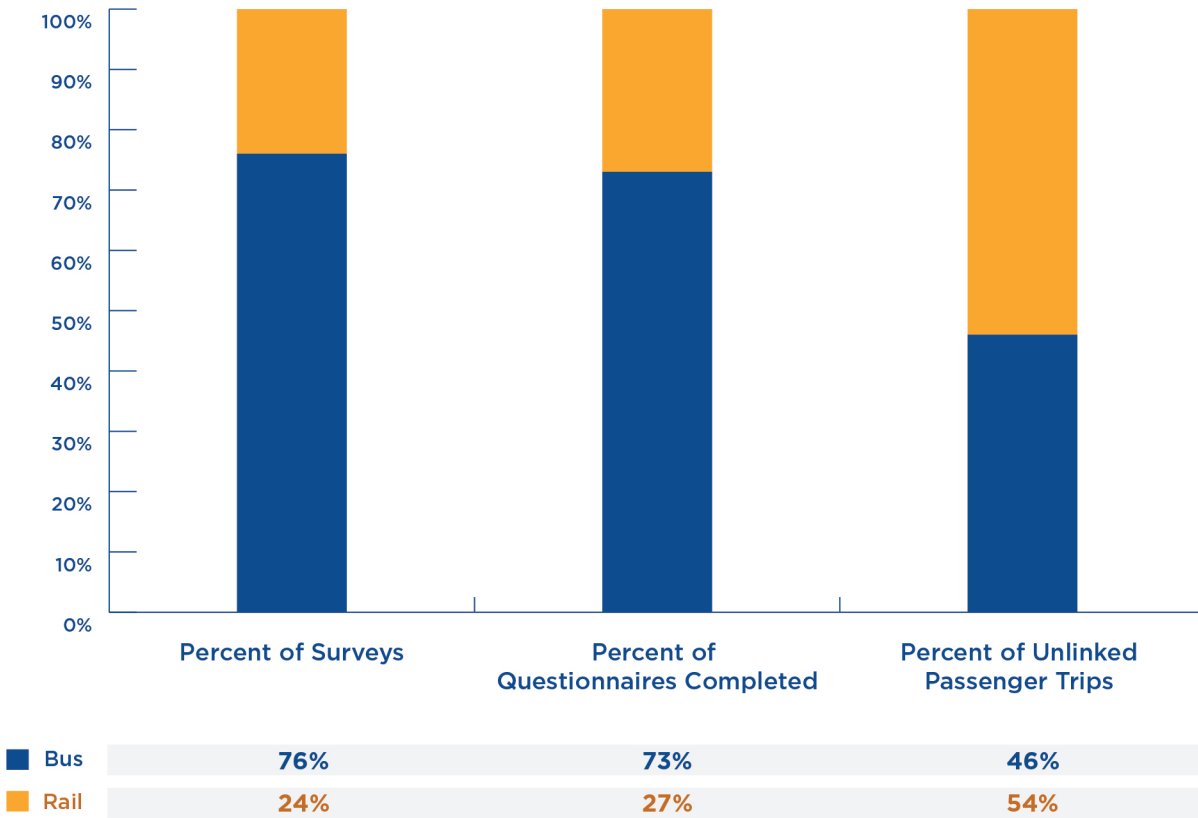
- 1.** Number of studies included in the tables and charts about the topic.
- 2.** Number of respondents surveyed in those studies.
- 3.** Average number of respondents per survey.
- 4.** Number of unlinked trips by the transit system in the year of the survey¹.

Rounding

Throughout the report, charts and tables include rounding, and thus may sum to 99% or 101% in a few cases. This is not an error and should be ignored.

Figure 2

The Sampled Reports - Transit Mode



Distribution of the Sample

The map in Figure 1 (page 10) illustrates the breadth of the geographic coverage of the surveys included in this report. The distribution between bus and rail modes and the distribution among three tiers of city sizes is shown in the following four tables and charts.

It is important for the reader to understand the effect of weighting the results of the compiled surveys. Surveys typically involve random sampling of riders. The survey sample sizes are dictated by research needs, and are not proportional to the ridership of the systems. For example, a system carrying five million trips a year may have a survey sample of similar size to a system carrying twenty million trips per year. That is simply the way survey sampling works. In

order to combine studies such as these in a meaningful way, we have to have proportionality among the studies and we cannot rely on the count of survey questionnaires to provide it. Instead we must weight the results. The only reasonable way to accomplish proper proportional weighting is to weight by the ridership numbers.

Profile of the Sample: Transit Mode

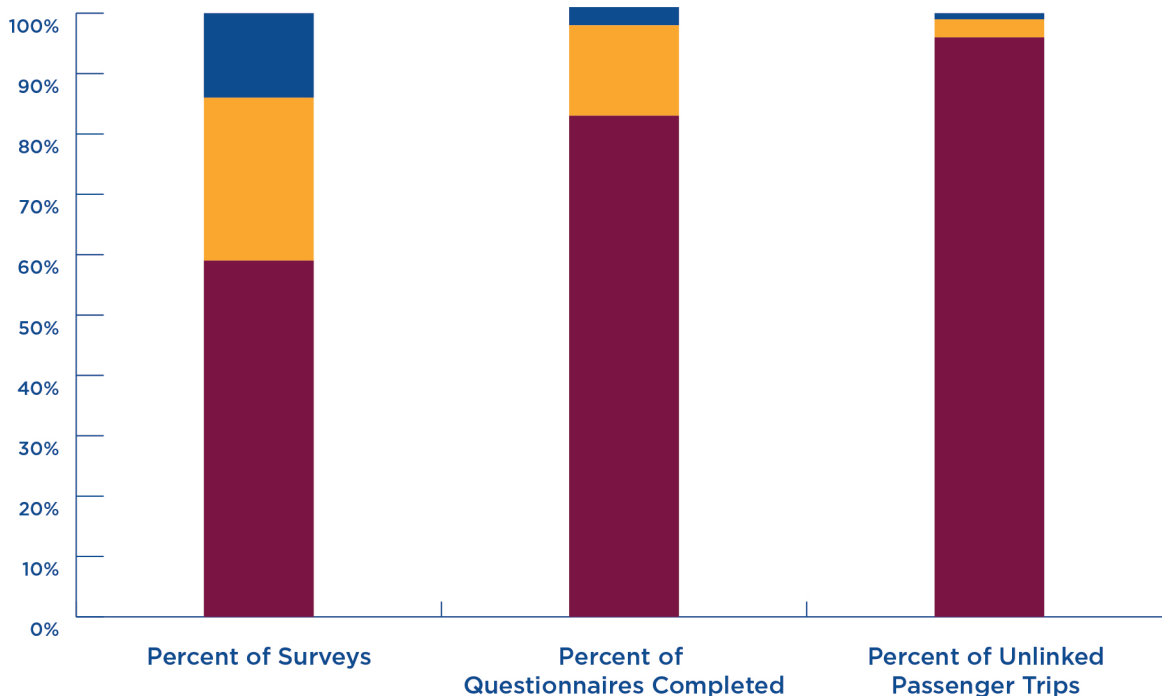
Surveys of rail modes account for only about one fourth (24%) of the surveys included in the study and 27% of the questionnaires completed in the course of those studies. However, because of their heavy ridership, they account for 54% of the passenger trips.

Table 1 - Profile of the Sample by Transit Mode - Rail and Bus

TRANSIT MODE	NUMBER OF SURVEYS	NUMBER OF QUESTIONNAIRES COMPLETED	UNLINKED PASSENGER TRIPS
Rail	50	189,055	4,574,243,003
Bus	161	506,693	3,875,638,085
Totals:	211	695,748	8,449,881,088

Figure 3

The Sampled Reports - Urban Population



■ < 200,000	14%	3%	1%
■ 200,000 to 999,999	27%	15%	3%
■ 1,000,000 and Over	59%	83%	96%

Profile of the Sample: Size of Urban Area

Most of the surveys included in this study (125 surveys or 59%) are from urban areas of one million or more residents. More importantly, they account for 96% of the passenger trips nationally.

Large communities, especially those that provide both bus and rail service, especially heavy rail, tend to have very large ridership. Thus,

when the results are presented as percentages of national ridership totals, the urban areas with populations of one million or more, which carry 96% of the trips included in this study, will tend to dominate the results, washing out differences among communities of differing sizes. Thus, although the reports from bus systems included

in the report are very robust and are more numerous, when the charts and tables examine national ridership as a whole, the weighting procedure tends to (rightly) emphasize larger urban areas.

This effect is especially pronounced in the data on ethnicity. For this reason, all results are presented in charts which first provide a national overview, then a view broken down by transit mode (rail or bus), and then by size of the urban area from which the survey data came. In this way, readers interested in the differences between the larger and smaller communities can easily see differences hidden in the overall national statistics.

Table 2 - Profile of the Sample of Surveys by Urbanized Area

POPULATION OF URBANIZED AREA	NUMBER OF SURVEYS	NUMBER OF QUESTIONNAIRES COMPLETED	UNLINKED PASSENGER TRIPS
Less than 200,000	30	18,110	47,092,036
200,000 to 999,999	56	103,413	268,258,249
1,000,000 or more	125	574,225	8,134,530,803
Totals:	211	695,748	8,449,881,088

Part 1:

DEMOGRAPHICS

Personal and Household Social Characteristics

Age of Transit Riders

Transit passengers are primarily people in the most economically active years of their lives, from 25 to 64. They account for a total of 79% of transit passengers. Those 65 or older account for only 7%.

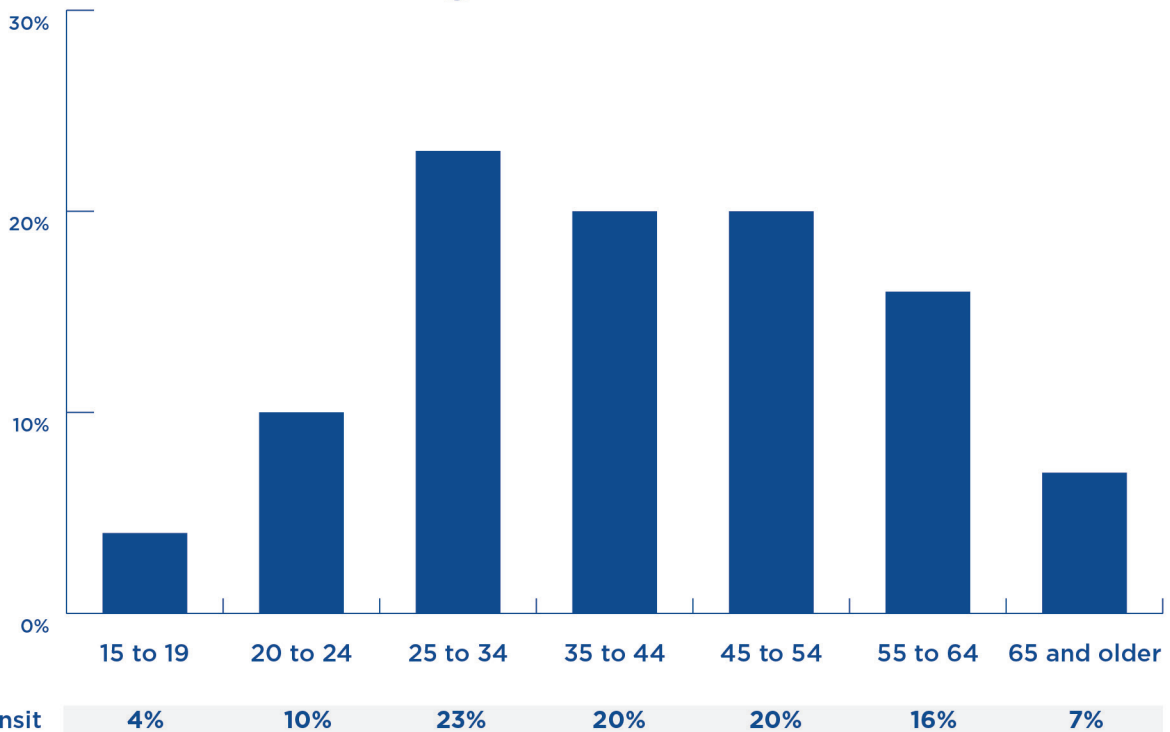
Those younger than 25 account for 14% of riders, and most of these riders are probably studentsⁱⁱ.

An onboard rider survey asks only those riders who appear to be of a minimum age to complete a questionnaire. This obviously causes the omission of young children from the age profile, and thus clearly, but for good reason, understates their numbers.

Furthermore, the minimum age considered appropriate for participation varies slightly

Figure 4

Age - All Transit Users



■ All Transit Users



among survey consultants. Typical age limits vary from twelve to sixteen. The judgment regarding who meets that criterion also undoubtedly varies among the personnel actually administering the surveys. For these reasons, not only very young children, but also preteen and early teen children at the margins of those ages are also likely to be underrepresented. The effect on the results of underrepresenting young children is minimal because the vast majority of riders are adults.

Age of the US Population Compared to Ridership

Table 3 compares the age distribution of riders to that of the general United States population. The latter data are drawn from the American Community Survey (ACS). To make the comparison, it is necessary to drop the category “Under 14” from both the general population data and the transit rider survey data because unlike the ACS, the transit surveys do not have reliable information on that youngest age group.

Limiting both the population and the ridership to the lower age limit of fifteen, we can see that transit users are more likely (63%) than the general population (50%) to fall into the age range from 25 to 54. They are also less likely (7%) than the general population (17%) to be 65 or older.

Table 3 - Population & Riders 15 And Older

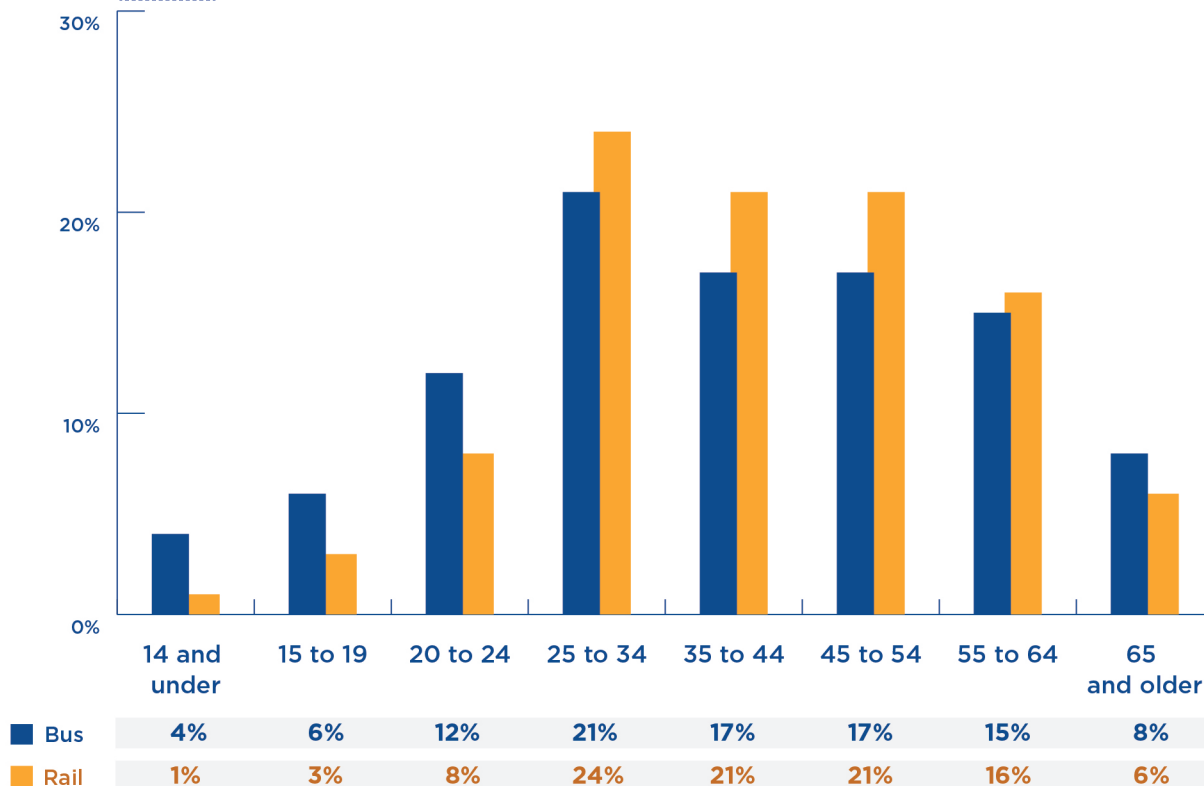
Age	U.S. Population	Transit Users
15 to 19	9%	4%
20 to 24	9%	10%
25 to 34	17%	23%
35 to 44	16%	20%
45 to 54	17%	20%
55 to 64	15%	16%
65 and older	17%	7%

of reports: **195**
 Average # of riders surveyed per study: **3,352**
 # respondents: **653,642**
 Annual ridership of systems responding: **8,144,397,645**

Source: American Community Survey, Five year estimates, 2014

Figure 5

Age - Transit Mode



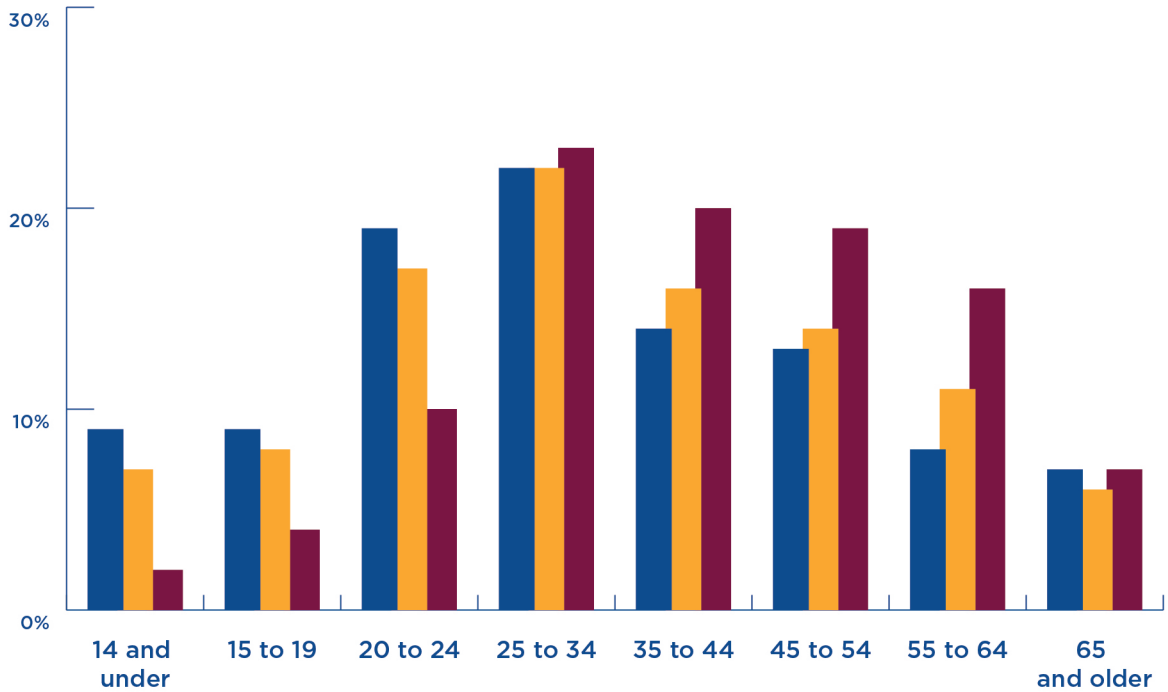
Age of Bus & Rail Riders

There are general similarities in the age distributions of bus and rail riders, but bus riders tend to be somewhat younger than rail riders. For example, while 22% of bus riders are under the age of 25, only 12% of rail riders surveyed are that young. Conversely, while 82% of rail riders are in the age range from 25 to 64, fewer bus riders (70%) fall in that age range.



Figure 6

Age - Urban Population



■ < 200,000	9%	9%	19%	22%	14%	13%	8%	7%
■ 200,000 to 999,999	7%	8%	17%	22%	16%	14%	11%	6%
■ 1,000,000 and Over	2%	4%	10%	23%	20%	19%	16%	7%

Age by Urban Population

For cities in each of the three size-strata, the percent of riders in the range from 25 to 34 is essentially the same, 22% or 23%. Above and below that age range, however, there are significant differences in the age composition of the bus and rail riders. Essentially, the smaller the city, the more likely riders are to be younger than 35, and conversely, the larger the city, more likely riders are to be in the age 35 to 64.

Age is related to employment characteristics. For example, riders in the small and mid-size cities are several times more likely to be students than are those in the largest cities (see Figure 16, Page 31). Conversely, riders in the largest cities are much more likely to be employed.

While in the largest cities, a total of only 16% of the ridership is under the age of 25, in the smallest cities the comparable total is 37%. The mid-size cities, at 32%, fall between those figures. However, in the largest cities, 55% are between 35 and 64, while in the smallest cities, 35% are in that age range. Again, mid-size cities fall in between, at 41%.

Ethnicity & Race

Table 4 - Ethnic Composition of Riders and of the Population of the United States

Ethnicity	U.S.	Transit
White/Caucasian	63%	40%
Black/African American	12%	24%
Hispanic (of any race)	17%	19%
Asian/Asian American	5%	7%
Pacific Islander	<1%	2%
Multi-ethnic	<1%	1%
Native American	1%	1%
Other	<1%	6%

of reports: 168
 Average # of riders surveyed per study: 3,563
 # respondents: 598,662
 Annual ridership:
 7,841,207,954

The single largest group of riders consists of White/Caucasian riders (40%). However, when combined, communities of color make up a majority of riders (60%), with Black/African-American riders comprising the largest single group (24%) within communities of colorⁱⁱⁱ.



Figure 7

Ethnicity - All Transit Users

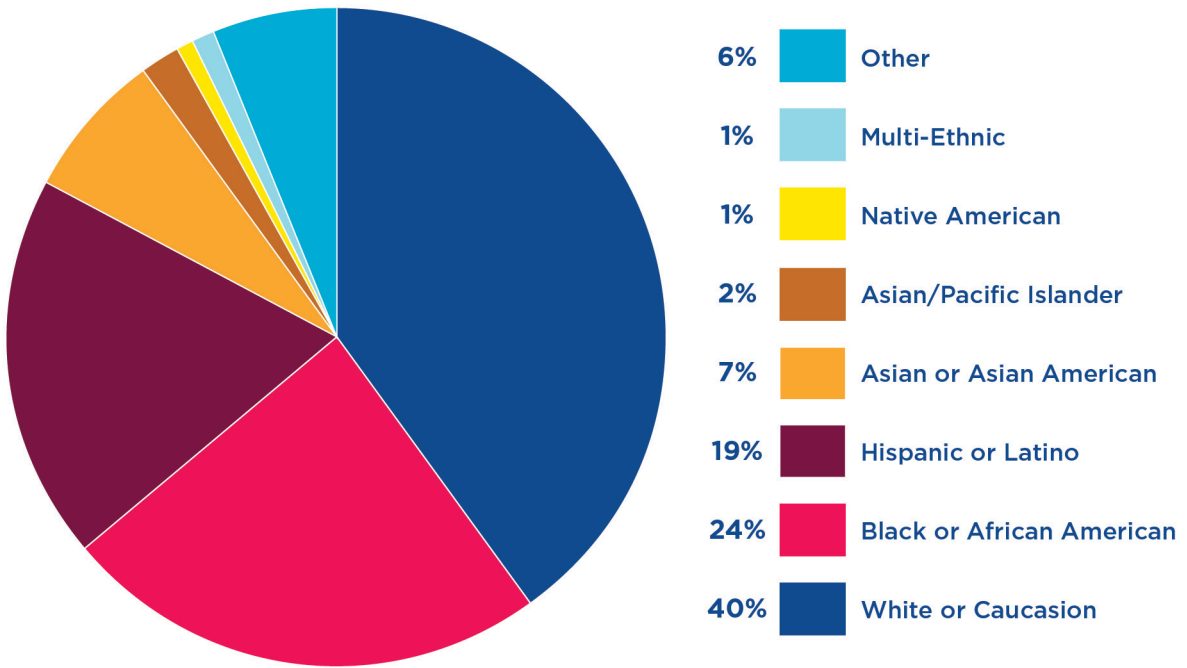
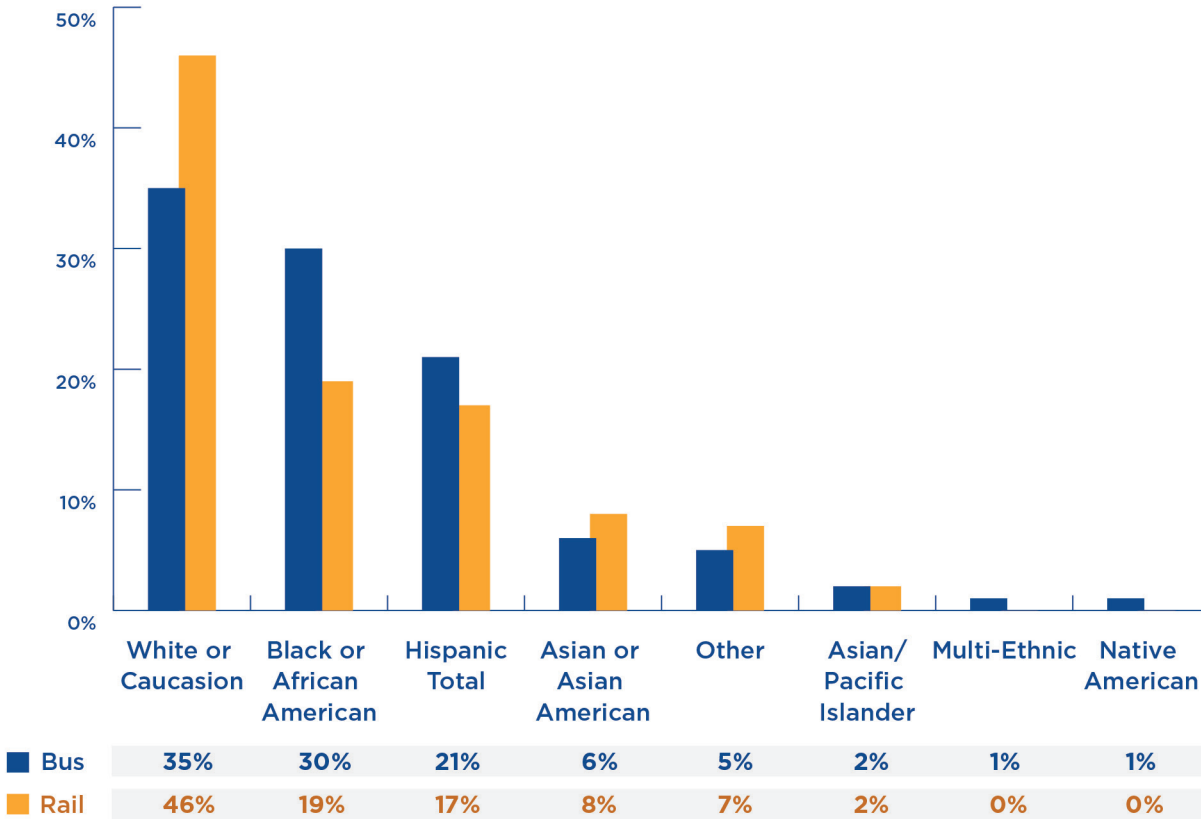


Figure 8

Ethnicity - Transit Mode



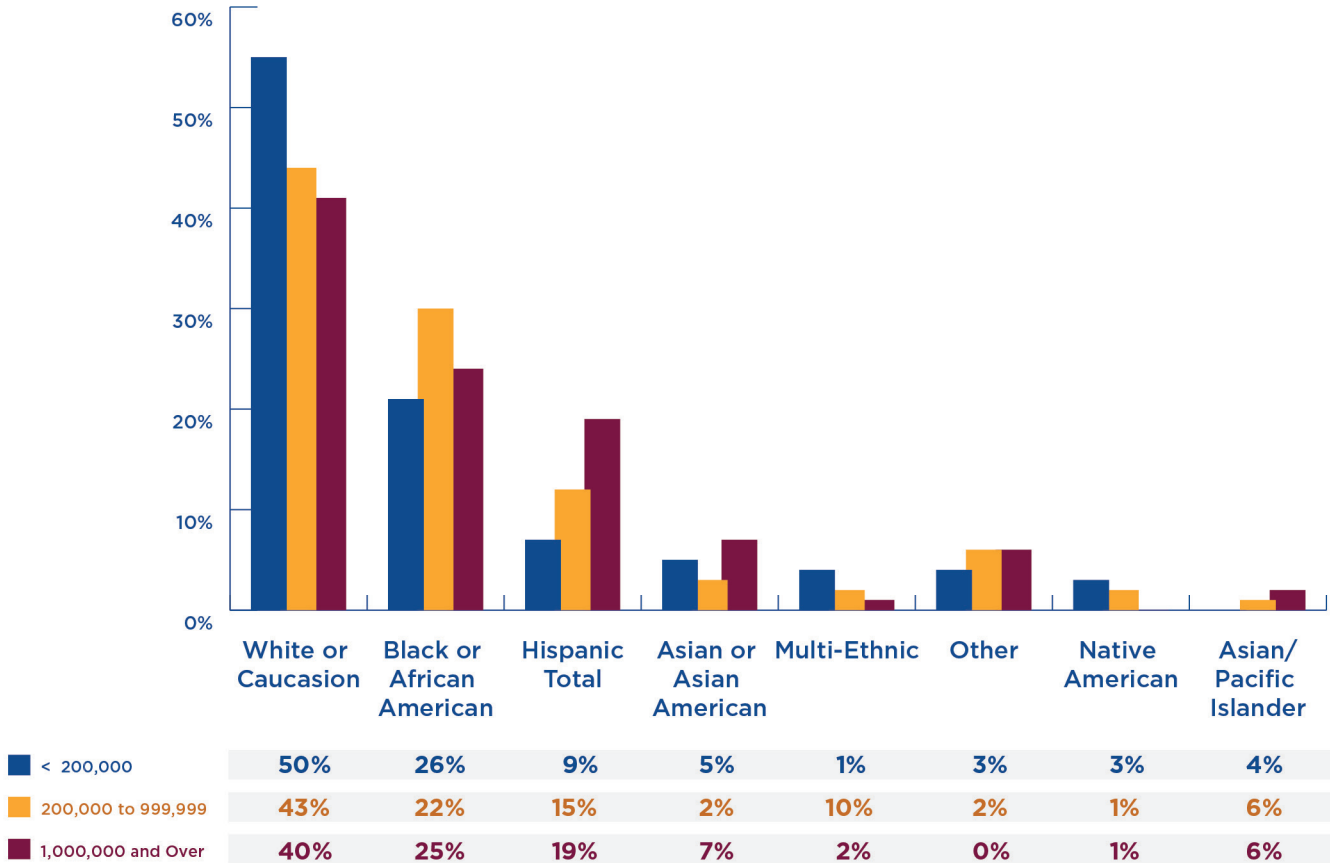
Ethnic/Racial Characteristics Among Bus and Rail Riders

Bus and rail riders differ somewhat in their racial/ethnic characteristics. Rail riders are more likely to identify as White/Caucasian (46%) than as Black/African American (19%). However, bus riders are split nearly equally between Caucasian (34%) and African American (31%).

Of all bus riders, 21%, and of all rail riders, 17%, identified themselves as Hispanic/Latino^{iv}. More rail riders (9%) than bus riders (6%) identified themselves as Asian/Asian American, but that difference is marginal.

Figure 9

Ethnicity - Urban Population



Ethnic/Racial Characteristics and Urban Population

The ethnic makeup of ridership varies with the size of the urban area served. Compared to the smaller cities, the largest cities have ridership less likely to identify as White/Caucasian and more likely to identify as Hispanic/Latino. For example, in cities of under two hundred thousand, 50% identify as White/Caucasian and 9% and as Hispanic/Latino. But, in cities of one million or more, 40% identify

as White/Caucasian, and 19% as Hispanic/Latino.

The percentage of riders identifying themselves as Black or African American differs with the size of the urban area in the narrower range of 22% to 26%, with the highest proportion appearing in the smallest cities of less than two hundred thousand.

Household Size

Table 5 - Household Size - U.S. Population, and Transit Riders

NUMBER IN HOUSEHOLD	% OF U.S. POPULATION*	% OF TRANSIT RIDERS
1	28%	26%
2	34%	31%
3	16%	18%
4 or more	23%	25%

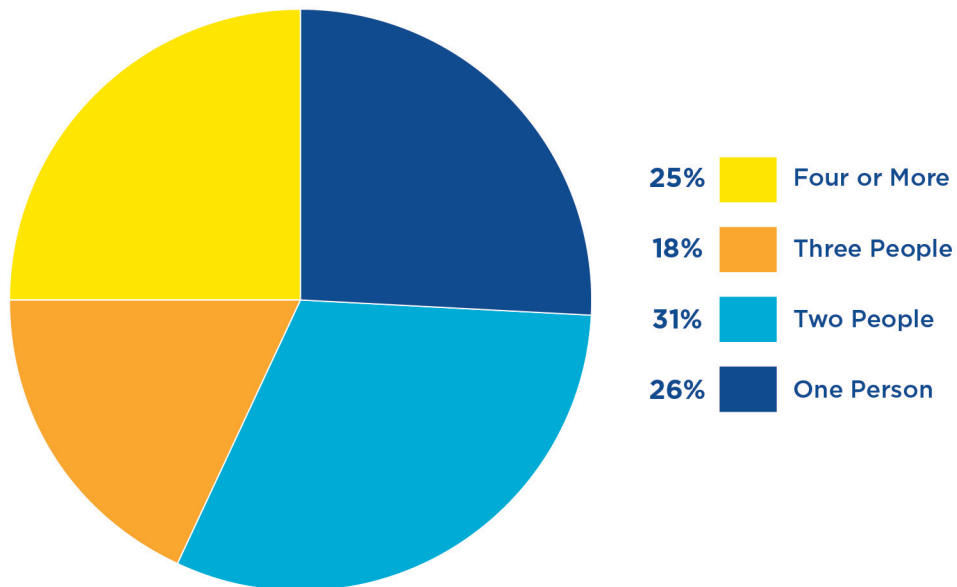
*American Community Survey, 5 year estimates, 2010-2014

Number of Reports: **77 surveys**
 Riders Surveyed: **335,236**
 Average # of riders surveyed per study: **3,747**
 Annual ridership:
5,110,472,210

In terms of household size, transit riders look very much like the general United States population. Roughly one-fourth (26%) of riders live alone as do 28% of the general population. Almost one third (31%) of transit riders, and just over one third (34%) of the general population, live in two person households. The balance of transit riders live in households of three persons (18%) or four or more persons (25%). The latter compare to 16% and 23% respectively for the general population.

Figure 10

Household Size - All Transit Users



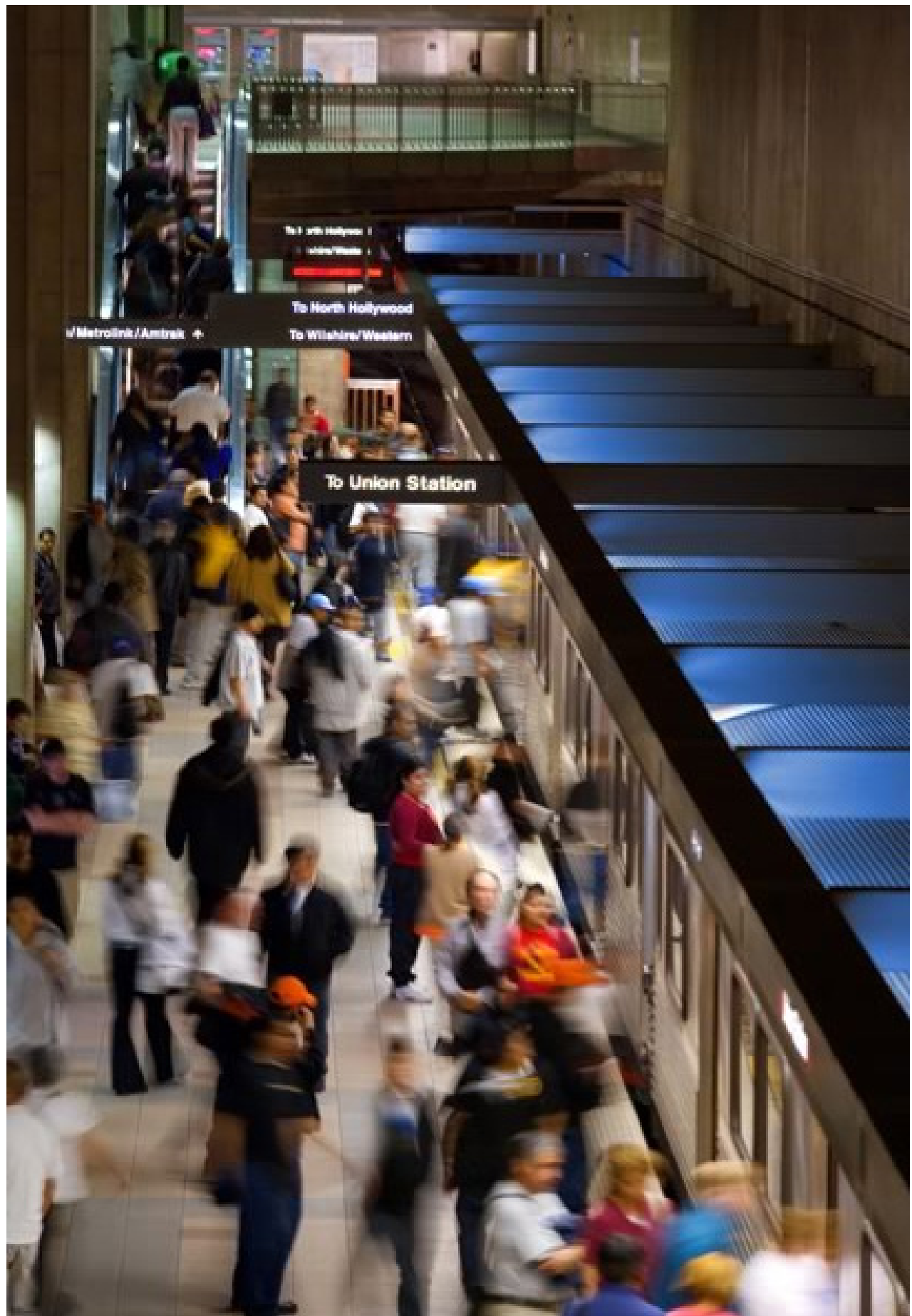
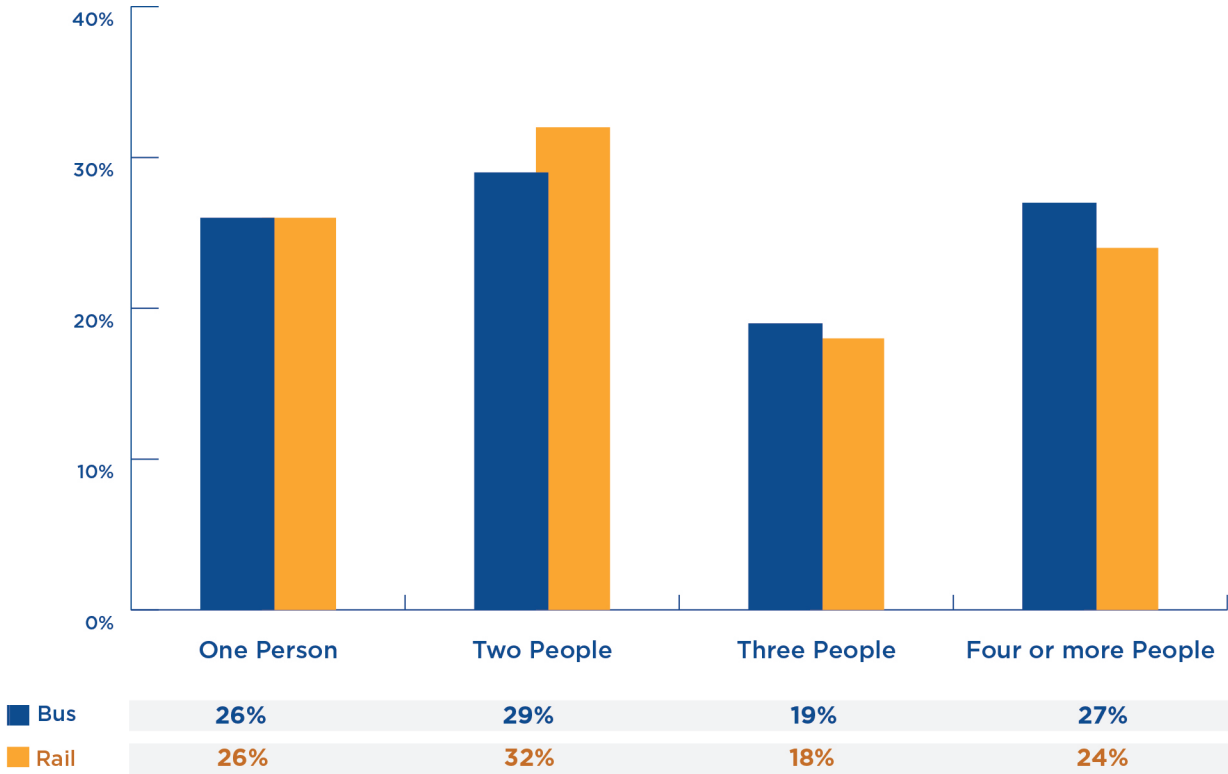


Figure 11

Household Size - Transit Mode



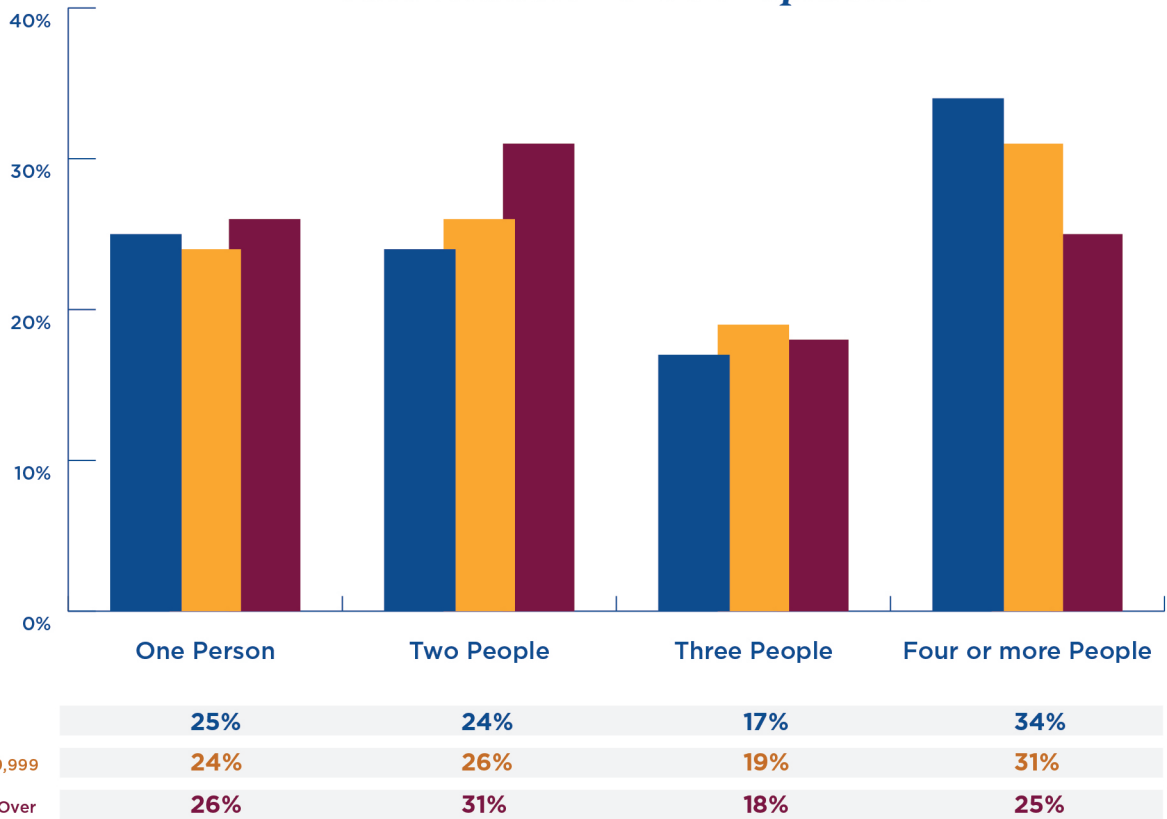
Household Size Characteristics of Bus and Rail Riders

Bus and rail riders do not differ greatly in their relative household sizes. Compared to rail riders, bus riders appear to be only very slightly more likely to reside in households of four or more persons (27% v 24%) and slightly less likely to live in households of only two persons (29% v 32%).



Figure 12

Household Size - Urban Population



Household Size Characteristics of Riders in Urban Areas of Varied Size

Riders living in cities of less than two hundred thousand are more likely (34%) than those in urban areas of more than one million (25%) to reside in households of four or more persons. Conversely, riders in cities of more than one million are more likely (31%) than those in cities of less than two hundred thousand population (24%) to reside in two-person households.

Employment

Most transit riders (71%) are employed full or part time. Many (7%) are students. Retirees make up 7% of the ridership and homemakers 3%. Riders listing themselves as unemployed comprise 6% of the ridership, and those shown as “Other” in the various reports, also 6%.

National Unemployment Rates During the Period Covered by Reports in this Study

The transit passenger studies included in this report cover the period 2008–2015, a period of considerable change in employment levels. In order to

put the unemployment figure in perspective, figure 14 provides national unemployment figures from the Bureau of Labor Statistics (BLS) for the entire adult population during this period. The mean unemployment for that period was 7.6%.

The transit figures (figure 13) represent ridership rather than individual persons, thus emphasizing more frequent riders who are more likely to be employed. Unemployed riders tend to be less frequent riders, thus the percentage of unemployed riders is probably somewhat understated.

Nevertheless, comparing the 6% of ridership unemployment to the national unemployment figure of 7.6% suggests that the percent of unemployed transit riders is reasonably in line with national norms.

Number of Reports: **110**
Riders Surveyed: **314,509**
Average Riders Surveyed per Study: **2,859**
Annual ridership: **5,261,660,423**

Figure 13

Employment - All Transit Users

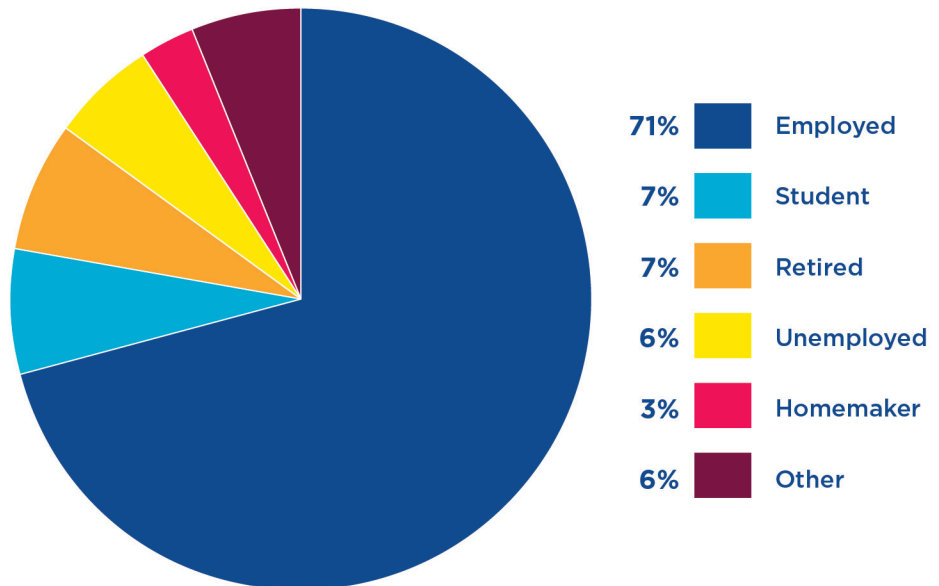


Figure 14

Unemployment Rate for All U.S. Adults 16 and Older, 2008 to 2015

(Source: US Bureau of Labor Statistics, <http://data.bls.gov/timeseries/LNS14000000>)

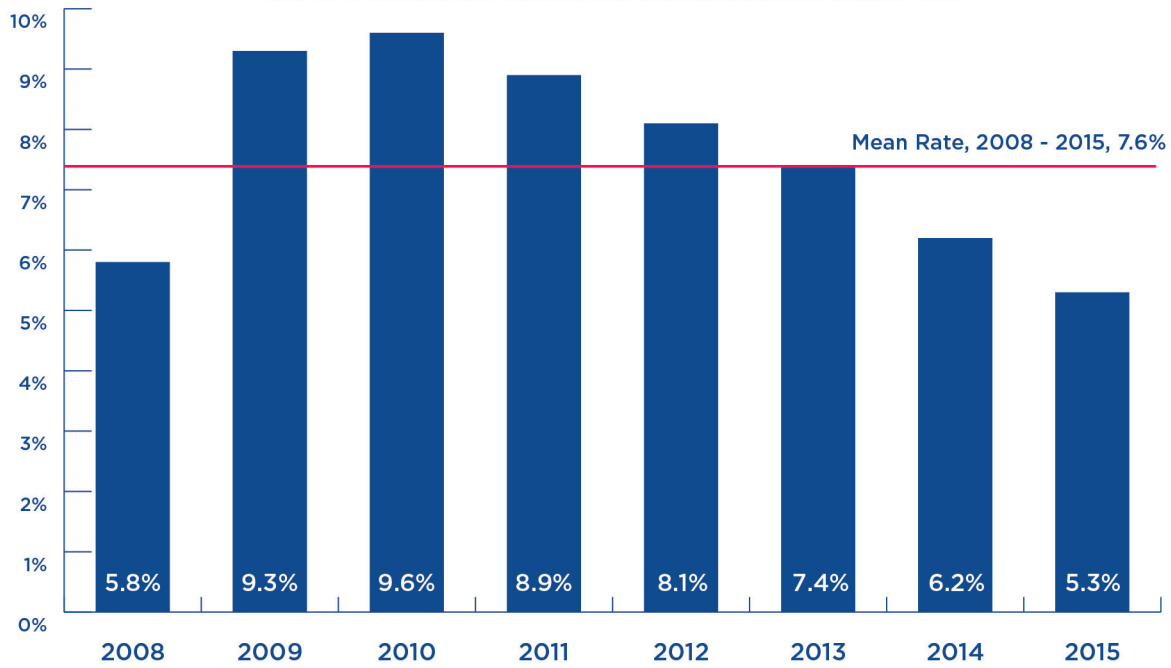
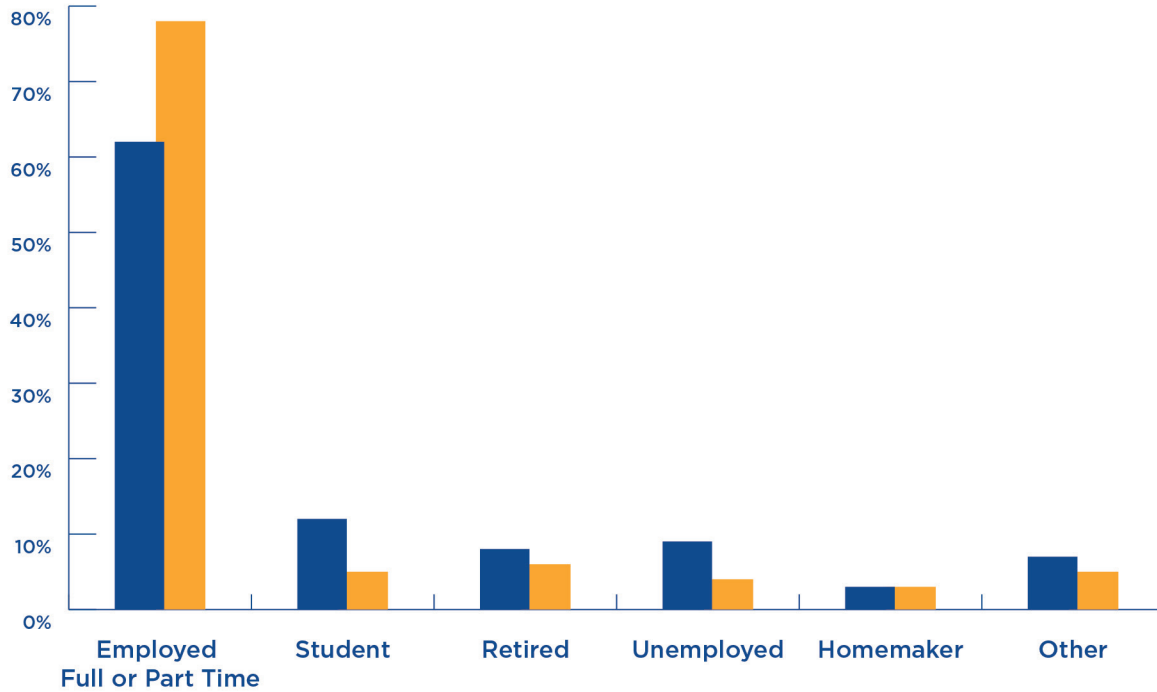


Figure 15

Employment - Transit Mode



■ Bus	62%	12%	8%	9%	3%	7%
■ Rail	78%	5%	6%	4%	3%	5%

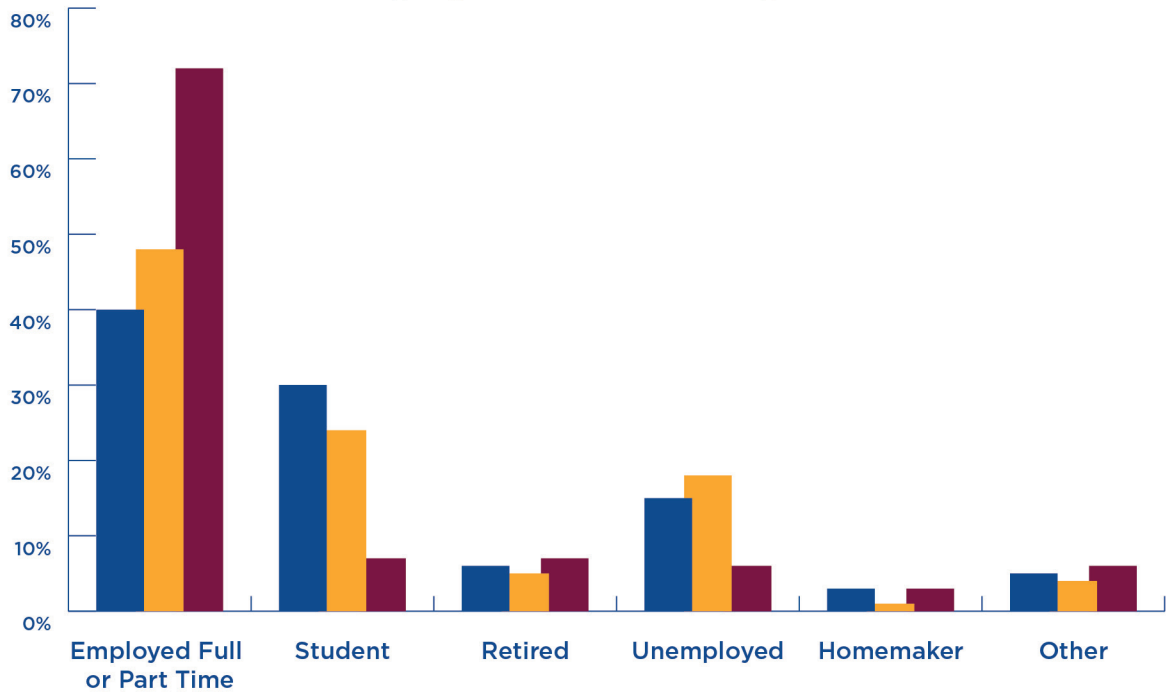
Employment Among Bus and Rail Riders

Rail riders (78%) are more likely than bus riders (62%) to be employed. The difference is accounted for in part by the fact that 7% more bus riders than rail riders are students. They are also more likely (9%) than rail riders (4%) to be unemployed.



Figure 16

Employment - Urban Population



■ < 200,000	40%	30%	6%	15%	3%	5%
■ 200,000 to 999,999	48%	24%	5%	18%	1%	4%
■ 1,000,000 and Over	72%	7%	7%	6%	3%	6%

Employment and Urban Population

In the largest urban systems 72% of riders report that they are employed, compared to only 48% in the mid-sized cities, and 40% in the smaller urban areas. The percentage of students and unemployed riders is, conversely, much greater in small and mid-size urban areas than in the largest ones.

Rail service generally operates in large and densely populated urban areas. Rail is also heavily used for commuting. It is thus not surprising to find that the percentage of riders who are employed is higher in the largest urban areas than in smaller communities.

Workers in the Household

A total of 77% of transit user households include one or more working persons, this consists of 43% with one working person and another 34% with two or more working people.

Workers Among Bus and Rail Rider Households

Households of bus and rail transit users are very similar in terms of the number of workers in their households. Slightly more households of bus riders (36%) than

rail riders (33%) have two or more workers, but the difference is small.

Workers in the Household and Urban Population

In terms of the number of workers in a household, households of transit riders in mid-size cities are distinctly different from those in the larger or smaller cities. In the mid-size cities, almost half, 47%, indicate that their households include two or more workers. This compares to about one-third in the smaller cities

(32%) and the largest cities (34%). Conversely, the mid-size cities also have fewer households with no workers (14%) than the smaller cities (36%) or the largest cities (23%).

Number of Reports: 31
Riders Surveyed: 150,224
Average Riders Surveyed per Study: 4,846
Annual ridership: 3,918,153,848

Workers in the Household - All Transit Users

Figure 17

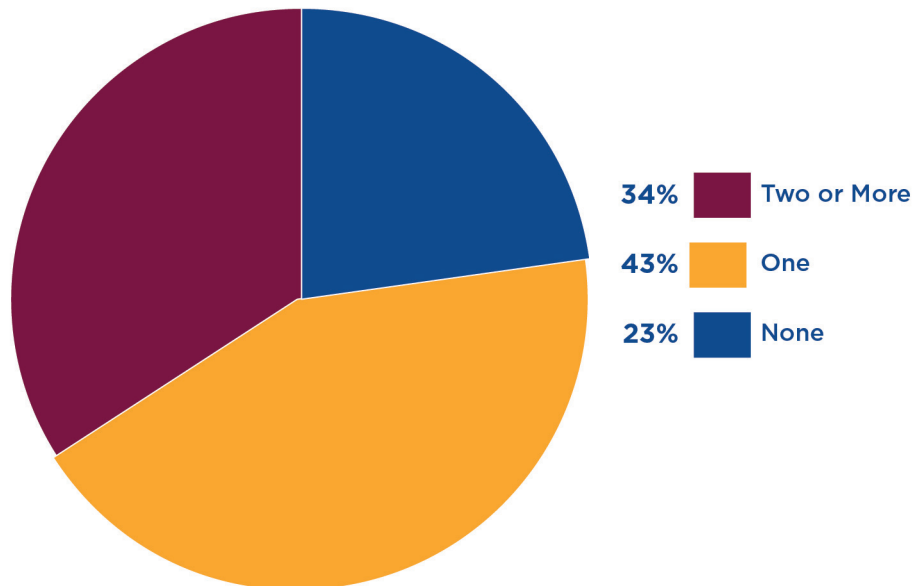


Figure 18

Workers in the Household - Transit Mode

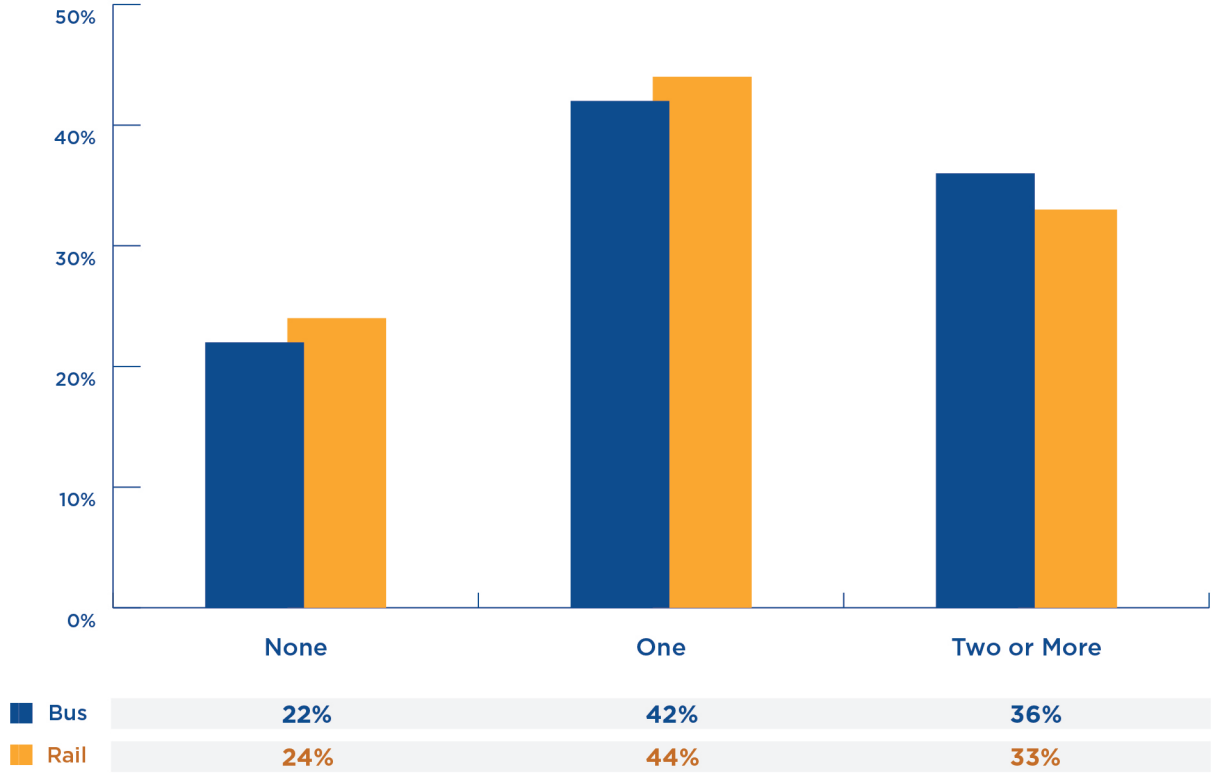
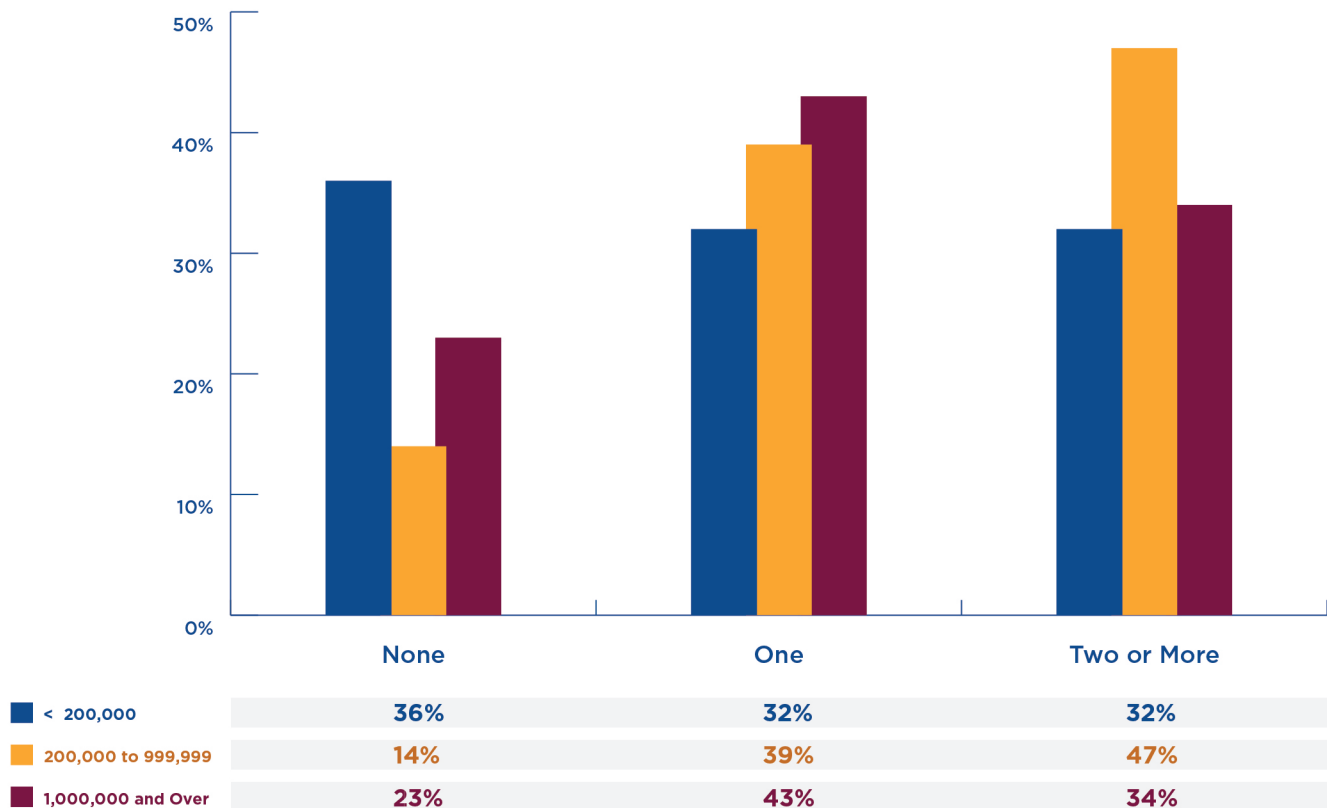


Figure 19

Workers in the Household - Urban Population



Household Income

Table 6 - Income of General U.S. Households and Transit Rider Households

	All U.S. Households	Transit Users
Less than \$15,000	13%	21%
\$15,000 to \$24,999	11%	12%
\$25,000 to \$49,999	24%	22%
\$50,000 to \$74,999	18%	15%
\$75,000 to \$99,999	12%	10%
\$100,000 or more	23%	21%

Number of reports: 188
 Riders surveyed: 631,419
 Average # of riders surveyed per study: 3,358
 Annual ridership: 8,092,931,161

Source: U.S. Figures from American Factfinder, ACS 5 year estimates in 2014 inflation adjusted dollars. Transit rider incomes were inflation adjusted for 2015 dollars.

A total of 13% of U.S. households have household incomes of less than \$15,000, but among transit-using households the comparable figure is 21%. On the other hand, at the top level of the income spectrum (\$100,000 or more), the percent of all U.S. households (23%) and transit using households (21%), is very similar. (See Table 6)



Figure 20

Household Income - All Transit Users

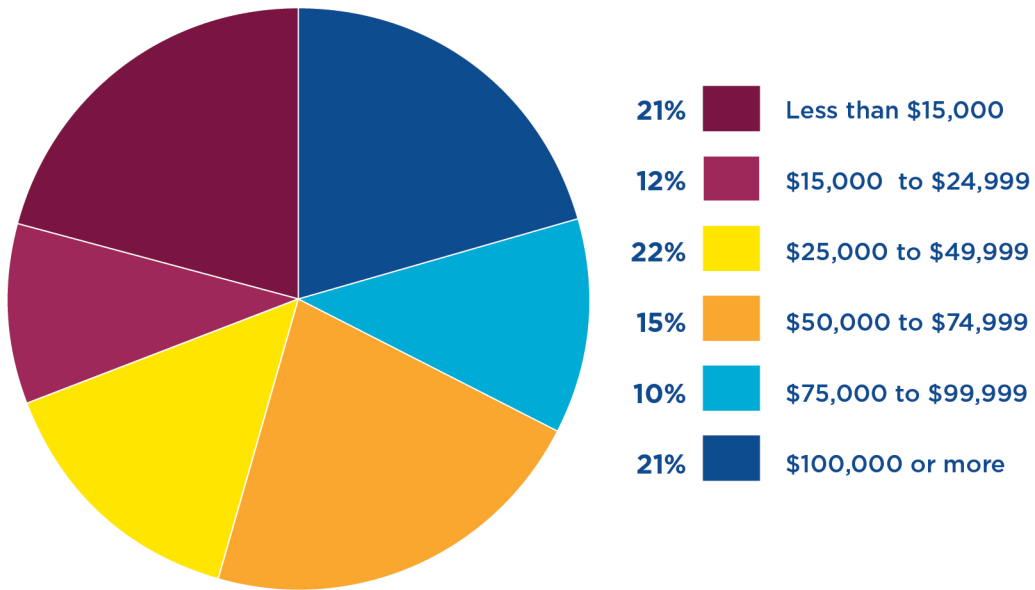
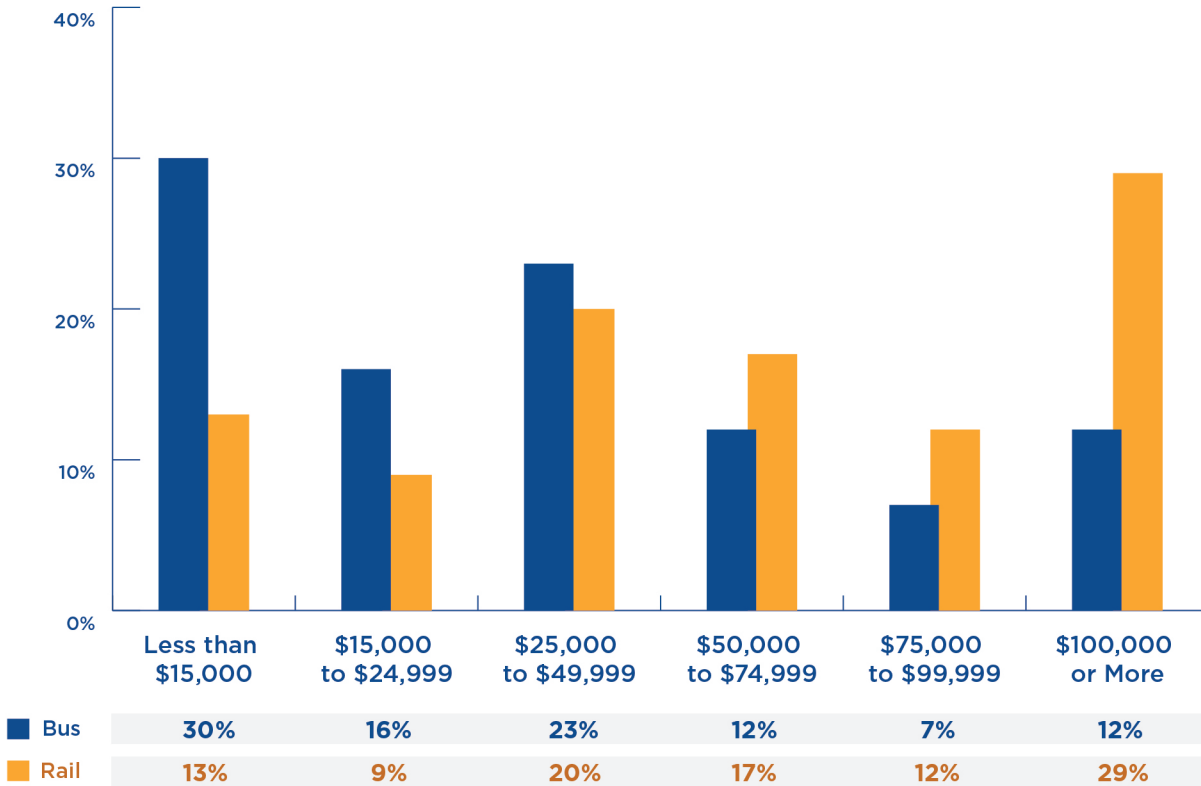


Figure 21

Household Income - Transit Mode



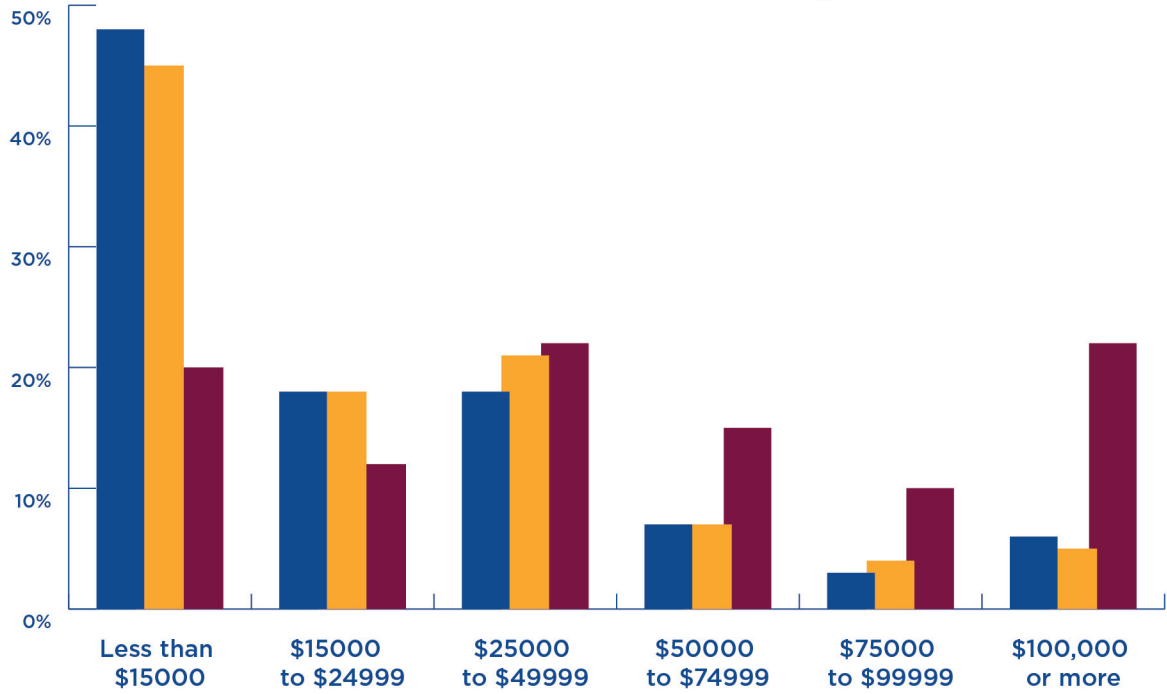
Household Income Among Bus and Rail Riders

The incomes of rail rider households tend to be greater than the incomes of bus rider households. For example, while 30% of bus riders report household incomes of less than \$15,000, that is true for only 13% of rail riders. Conversely, while only 12% of bus riders report household incomes of \$100,000 or more, 29% of rail riders report such incomes.



Figure 22

Household Income - Urban Population



■ < 200,000	48%	18%	18%	7%	3%	6%
■ 200,000 to 999,999	45%	18%	21%	7%	4%	5%
■ 1,000,000 and Over	20%	12%	22%	15%	10%	22%

Income and Urban Population

Household incomes vary widely among transit users in cities of different sizes. Riders in the largest cities tend to have higher incomes than riders in small and mid-size cities. For example, in the smallest cities, 48% of riders report incomes of less than \$15,000, while the comparable figure for mid-size cities is 45%. By contrast, in the largest cities only 20% report having

incomes that low. While the transit users in small and mid-size cities have an income distribution that is very skewed to the low end of the national income distribution, the incomes of rider households in the largest cities follow a pattern very much like that of the general population nationally.

Education

Table 7 - Educational Attainment

Level of Education Attained	U.S. Population 18 or Older	All Transit Users
Less than High School	14%	8%
High School Graduate	28%	16%
Some College/Assoc. Degree	31%	24%
Bachelor's Degree or higher	27%	51%

Number of reports: 34
 Riders surveyed: 108,330
 Average # of riders surveyed per study: 3,186
 Annual ridership: 1,398,206,467

* 1% "Other" are omitted

Source for U.S. Population Figures:
 ACS Five Year Estimates, 2014

More than half (51%) of transit riders hold a bachelor's or degree or more education. Relatively few (8%) have less than a high school education. One percent (1%) were classified as "Other" in the reports. The balance, 40%, completed high school or some college.

Comparing the educational attainment of transit riders with the general population is challenging because data on educational attainment among the general public is limited to those 18 and older, while transit surveys typically include some riders younger than 18". Obviously, a rider who is, for example, 16 when surveyed, is unlikely to have completed high school. Nevertheless, because the percentage of riders in the category younger than 18 is small, an approximate comparison can be made if we simply ignore that difference.

Transit riders are more likely (51%) than the general population (27%) to have a bachelor's degree or more education. We shall see in Figure 24 that this difference is based primarily on the educational level of rail riders.



Figure 23

Education - All Transit Users

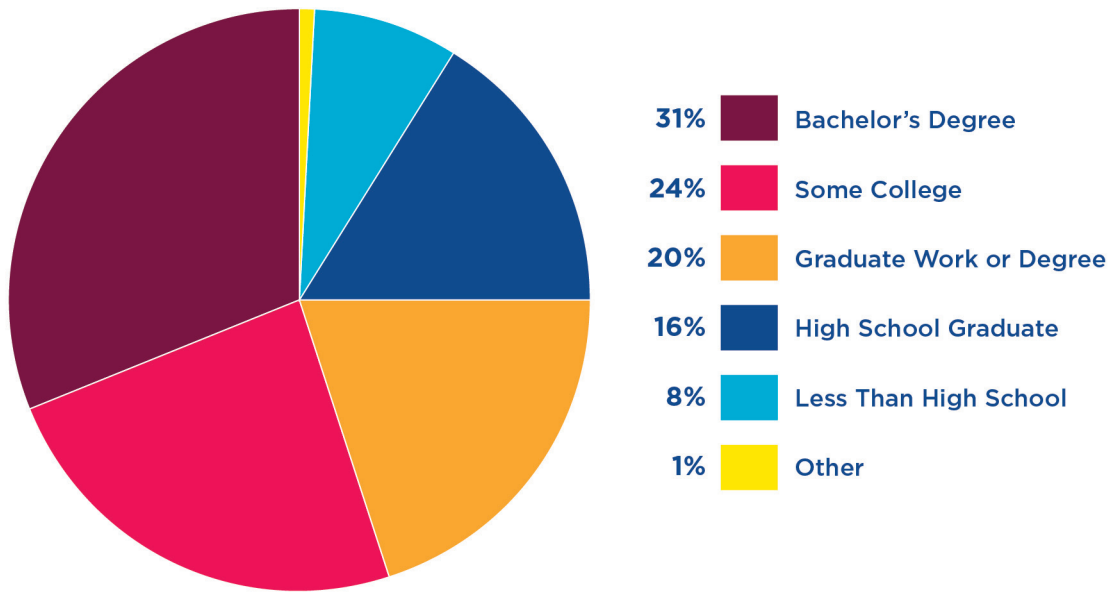
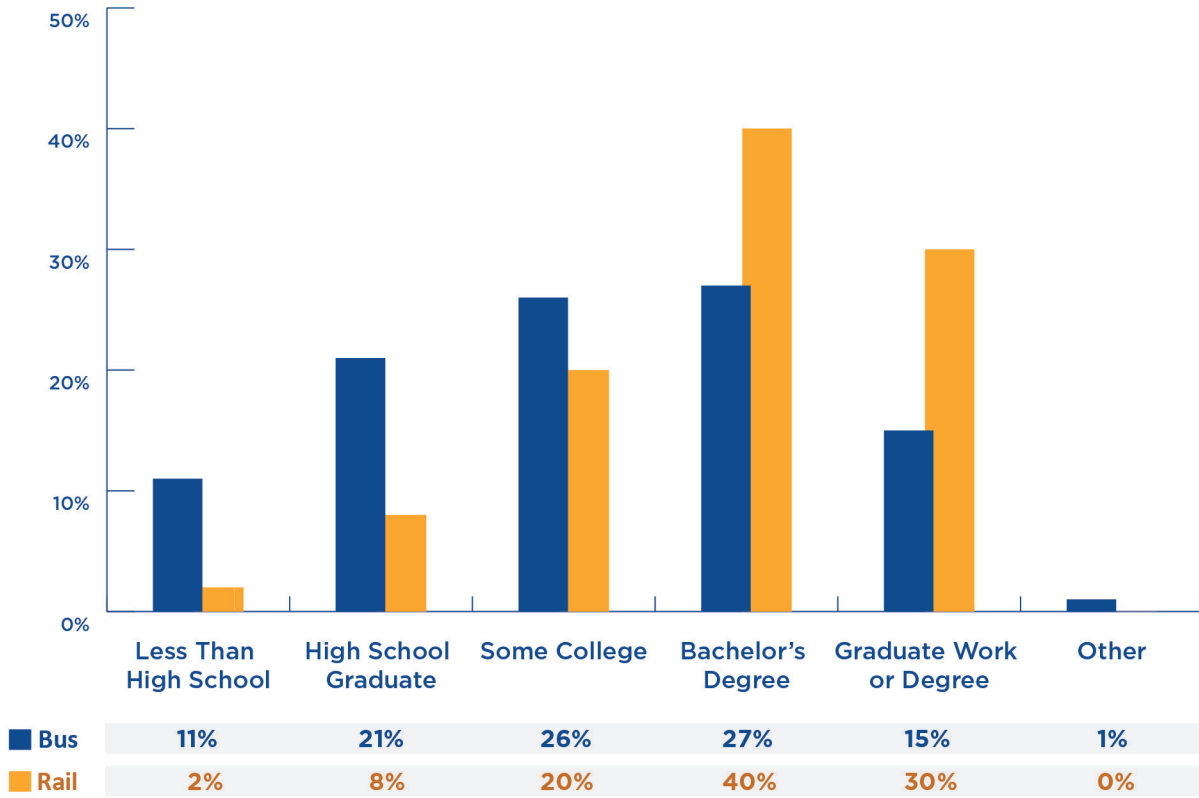


Figure 24

Education - Transit Mode



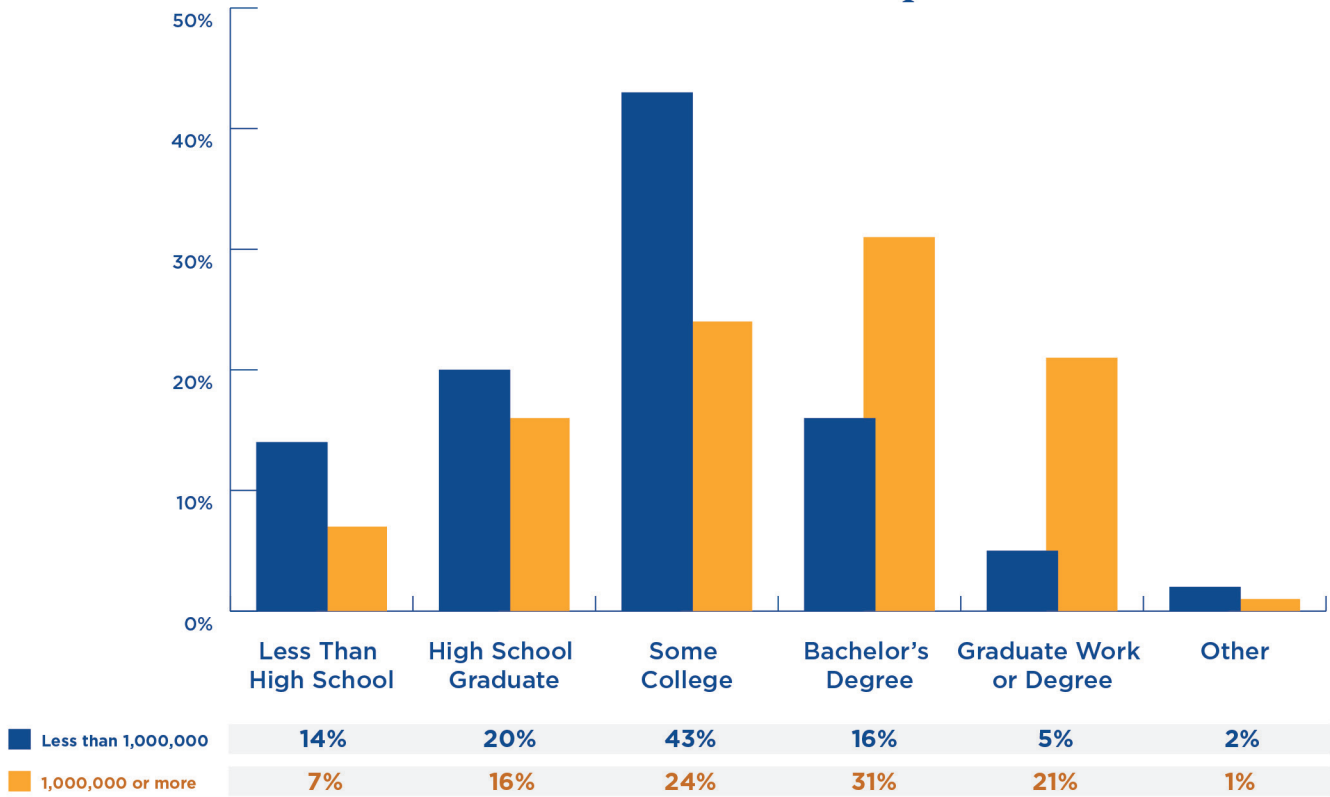
Education Among Bus and Rail Riders

Not surprisingly, given the known relationship between income and education, the level of education among rail riders is greater than that of bus riders. Among rail riders, for example, 70% have completed a bachelor's degree (40%) or have also done graduate level studies or hold a graduate

degree (30%). The comparable percentage of bachelor's degree or graduate work or degree among bus riders is 42%. While much lower than the 70% among rail riders, this is still very substantial, given the fact that nationally, 27% of adults have this level of education.

Figure 25

Education - Urban Population



Education and Urban Population

In Figure 25, the data from the smallest urban centers have been merged with those from the mid-size areas to create a category of cities of less than one million. The reason for combining these categories is that too few of the surveys in the smallest cities asked about education level to draw conclusions about them.

Higher levels of education are associated with larger population centers. While a total of more than half (52%) of the transit users in the largest cities completed college or some graduate work, that was true of fewer (21%) of those living in cities of less than one million.

Gender

Most transit riders in the United States are women (55%). This is true for both bus and rail users, though the bus riders may be slightly more likely than rail riders to be female. The difference of 1% is not meaningful in the context of this study.

Gender of Riders and Urban Population

The gender difference is greatest in the largest cities where it is 45% male to 55% female.

Number of Reports: 163
Riders Surveyed: 571,344
Average Riders Surveyed per Study: 3,505
Annual ridership: 7,440,834,684

Figure 26

Gender - All Transit Users

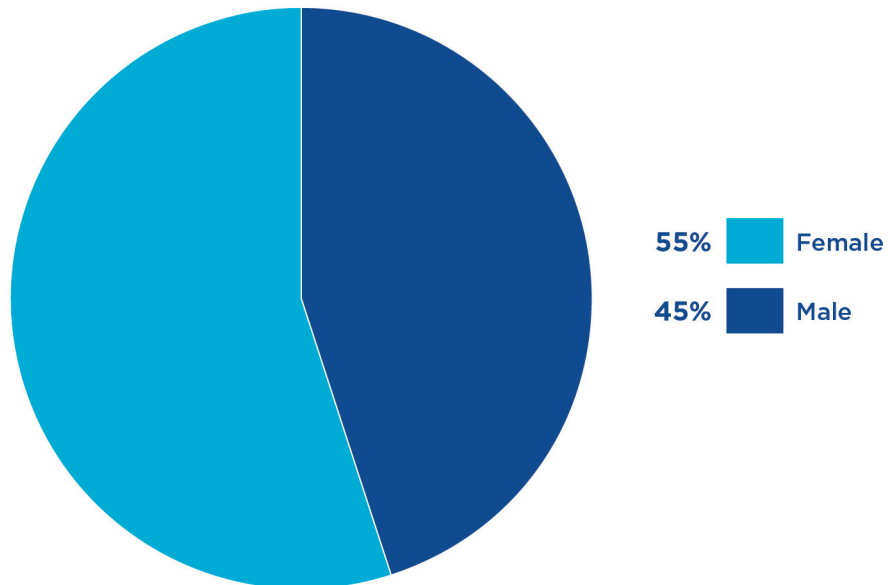


Figure 27

Gender - Transit Mode

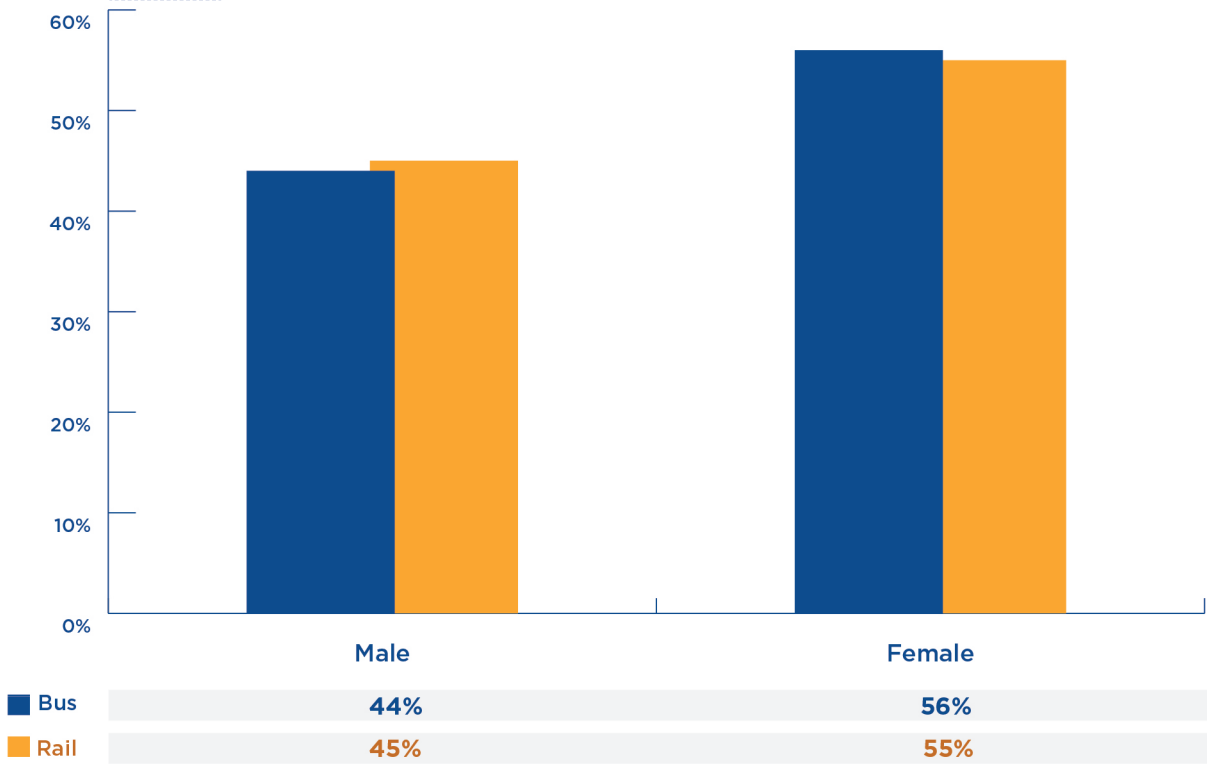
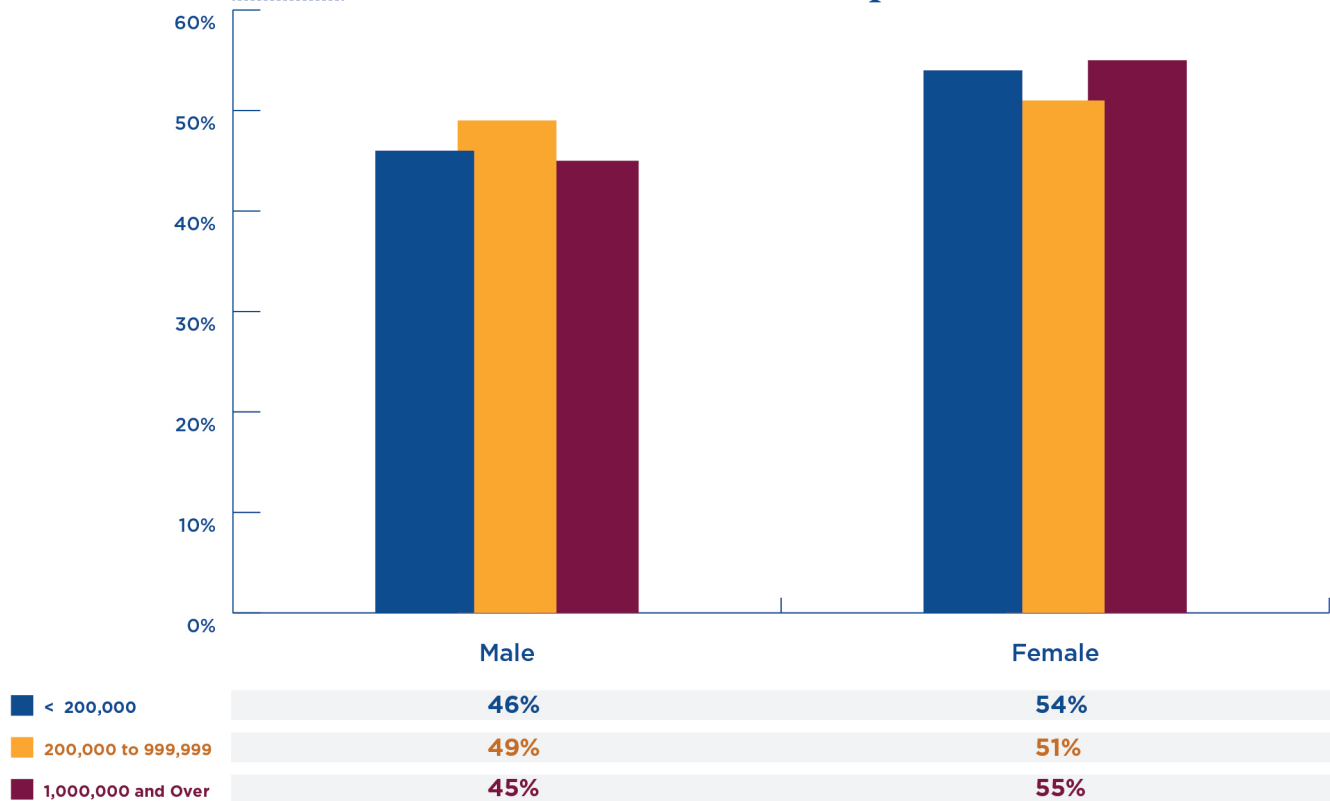


Figure 28

Gender - Urban Population



Vehicle Availability

Vehicle Availability for the Current Trip Specifically and on an Ongoing Basis for the Household

Many of the surveys (a total of 67) included in the study asked whether a vehicle had been available for the current trip during which they were surveyed. In other surveys (a total of 124), the question was asked differently and was more general, having to do with ongoing household availability of one or more vehicles, which may or may not have been available for the current trip.

Because of the two quite different approaches to this question, current trip as opposed to ongoing, the results are presented here in both ways separately, first as availability for the current trip and then for ongoing general availability. Some studies (a total of 35) asked the question both ways and thus are included in both charts below.

Current trip - Among all riders, 61% said there was no vehicle available to them for the current trip, while 39% said a vehicle was available.

Ongoing basis - When asked how many vehicles, if any, were available on an ongoing basis for the household to use in general, most respondents (54%) who were asked this question indicated that they had one or more vehicles, and only 46% said they had none. Most of those with a vehicle had only one (36%), but some had two (14%) and a few had three or more (4%).

Defining dependence on public transportation depends on which of these definitions is used. Given the different percentages for availability for the current trip (39%) as opposed to ongoing basis (54%) it is apparent that many of the riders for whom a vehicle was unavailable for their current trip nevertheless had availability on an ongoing basis, and cannot be considered transit-dependent.

Vehicle Availability for This Trip Among Bus and Rail Riders

Bus transit users are somewhat less likely (32%) than rail users (50%) to have a vehicle available for the trip they were on when surveyed.

Vehicles for Ongoing Use of the Household, Among Bus and Rail Riders

Bus and rail transit users are not substantially different in terms of having one or more vehicles available to the household on an ongoing basis.

Vehicle Availability for This Trip and Urban Population

Riders in the smallest cities are least likely (25%) to have had a vehicle available for the trip they were on when surveyed. Transit users in the mid-size (36%) to large cities (39%) tend to be more affluent, and thus more likely to have a vehicle.

Vehicles for Ongoing Use of the Household, and Urban Population

Riders in the smallest cities are more likely (60%) to lack possession of one or more vehicles for their household's use. Transit users in the mid-size (50%) to large cities (46%) tend to be more affluent, and thus, more likely to have vehicles.

Conversely, transit users in the largest cities are more likely to reside in households with one (36%), two (14%) or three or more vehicles (4%), for a total of 54% compared to a total of 50% for mid-size cities, and 40% for the smallest cities.



Figure 29

Was a Vehicle Available for You to Use for This Trip? - All Transit Users

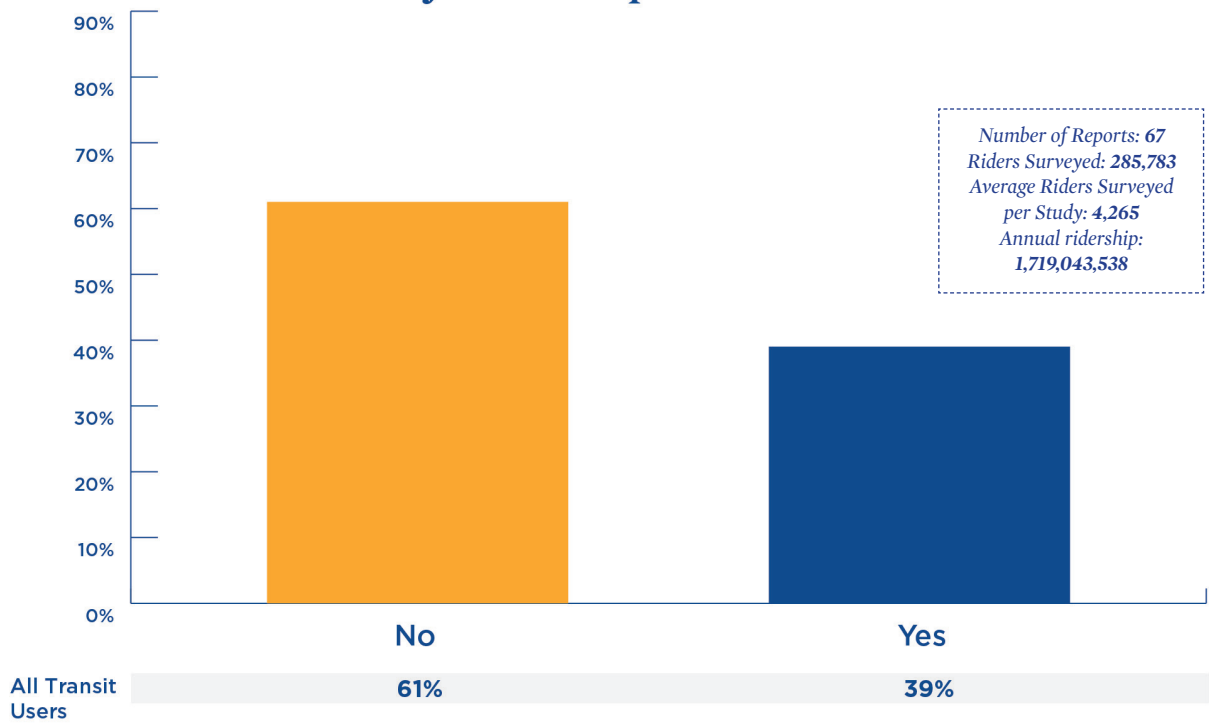


Figure 30

Vehicles Available for Use by Your Household on an Ongoing Basis - All Transit Users

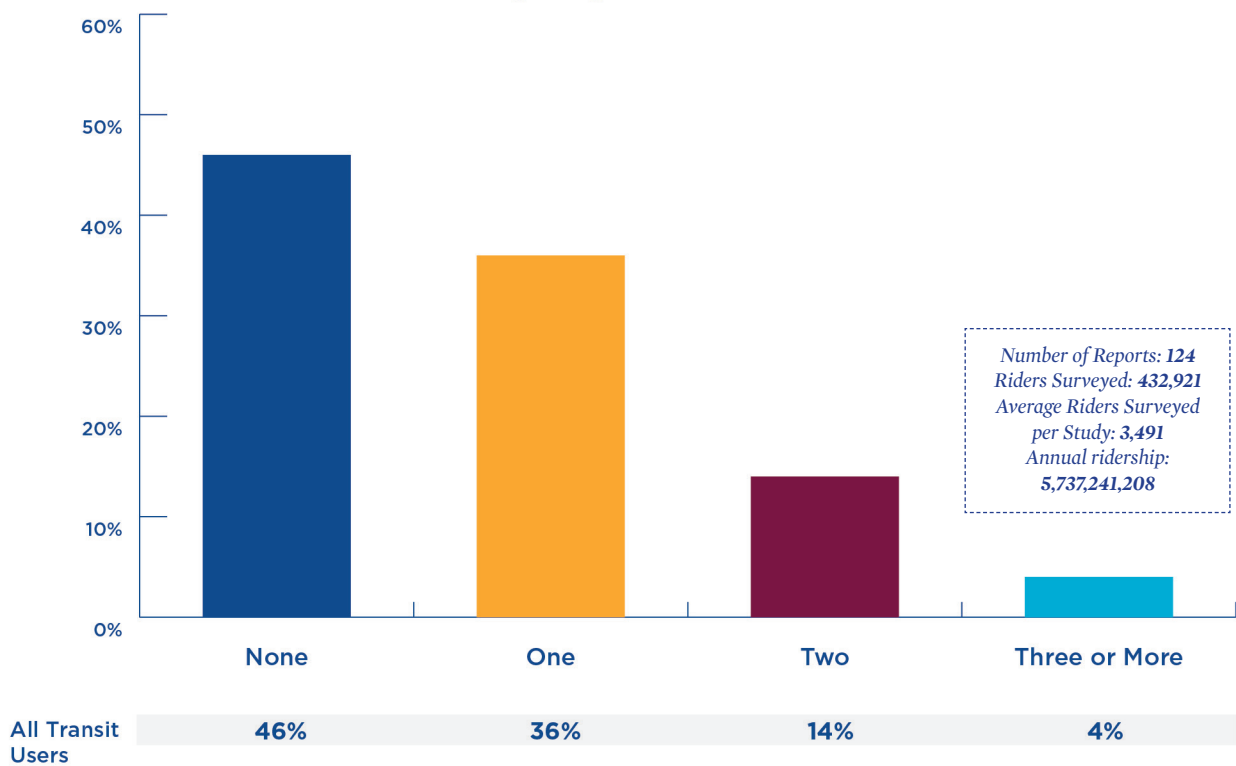


Figure 31

Vehicle Availability - Transit Mode

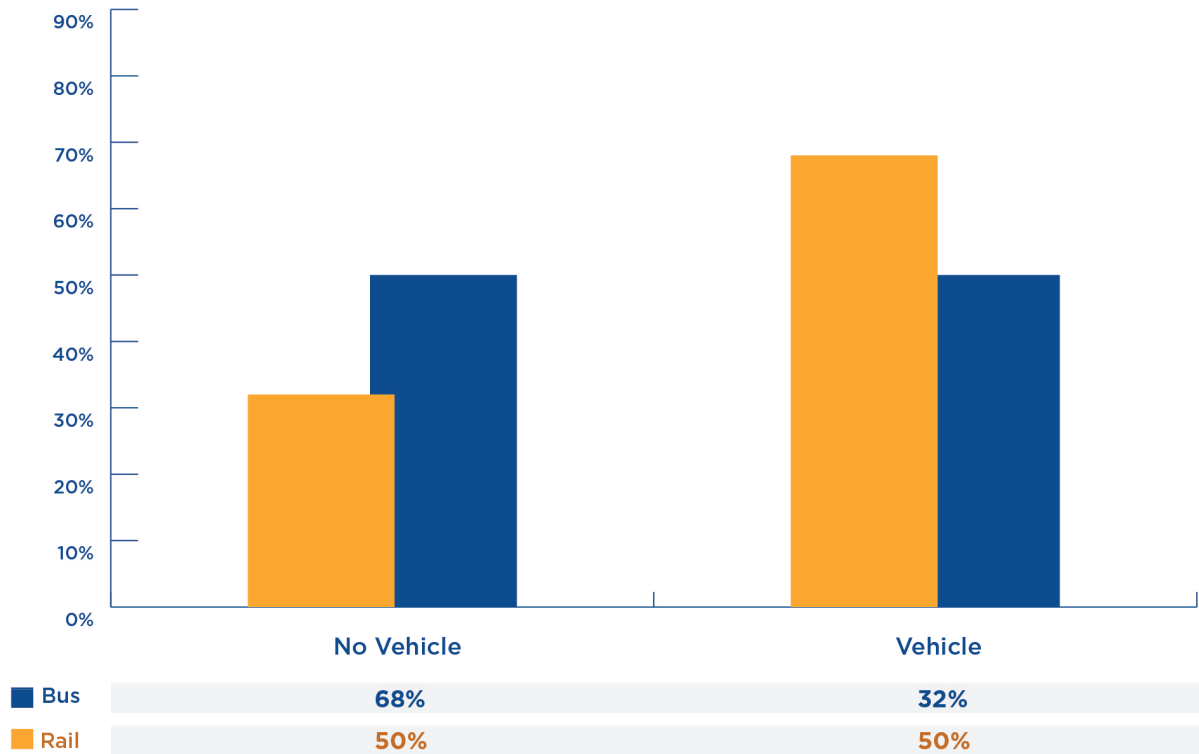


Figure 32

Vehicle Available for This Trip - Urban Population

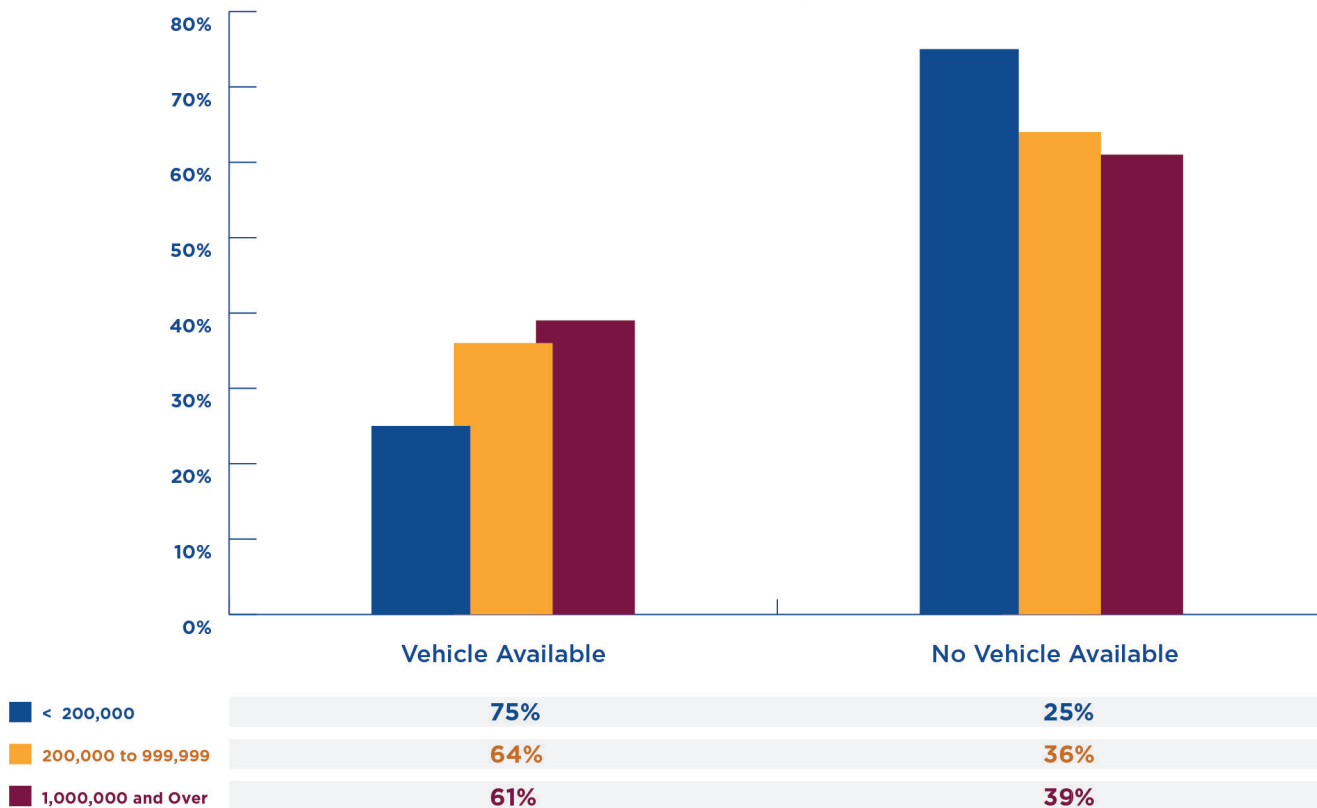


Figure 33

Number of Vehicles Owned/Leased by the Household - Transit Mode

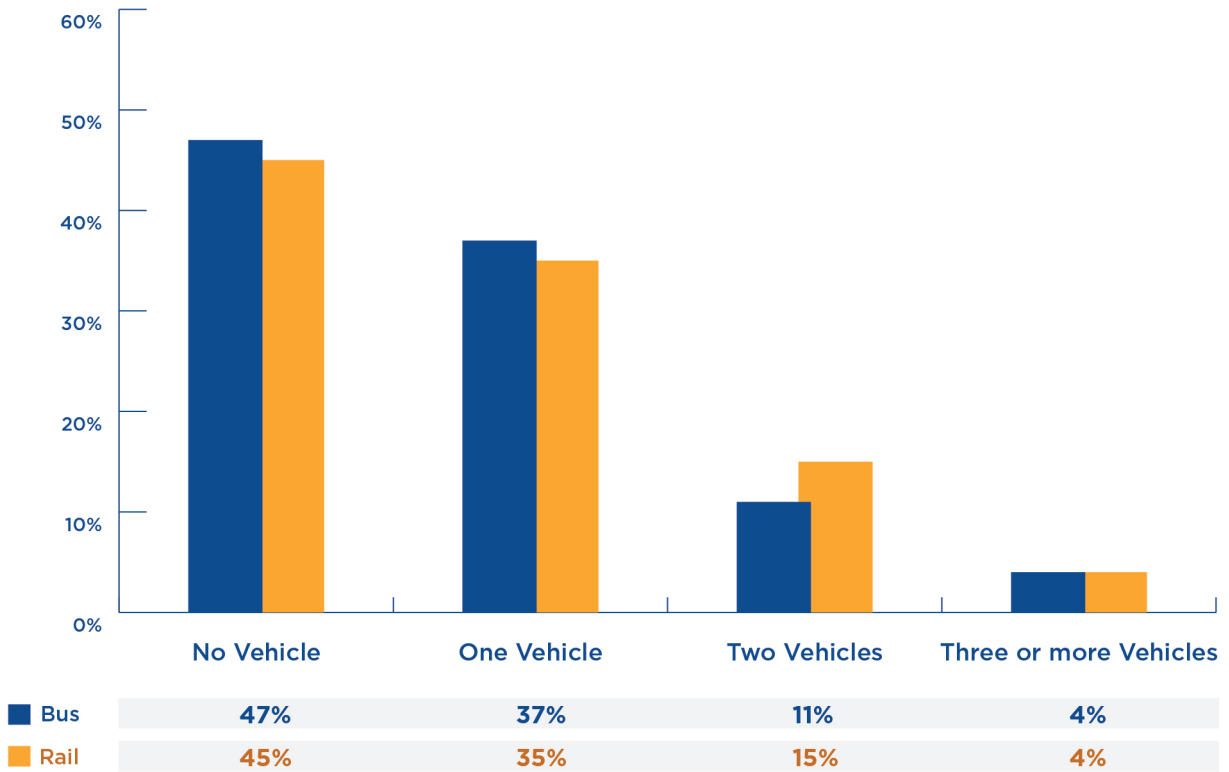
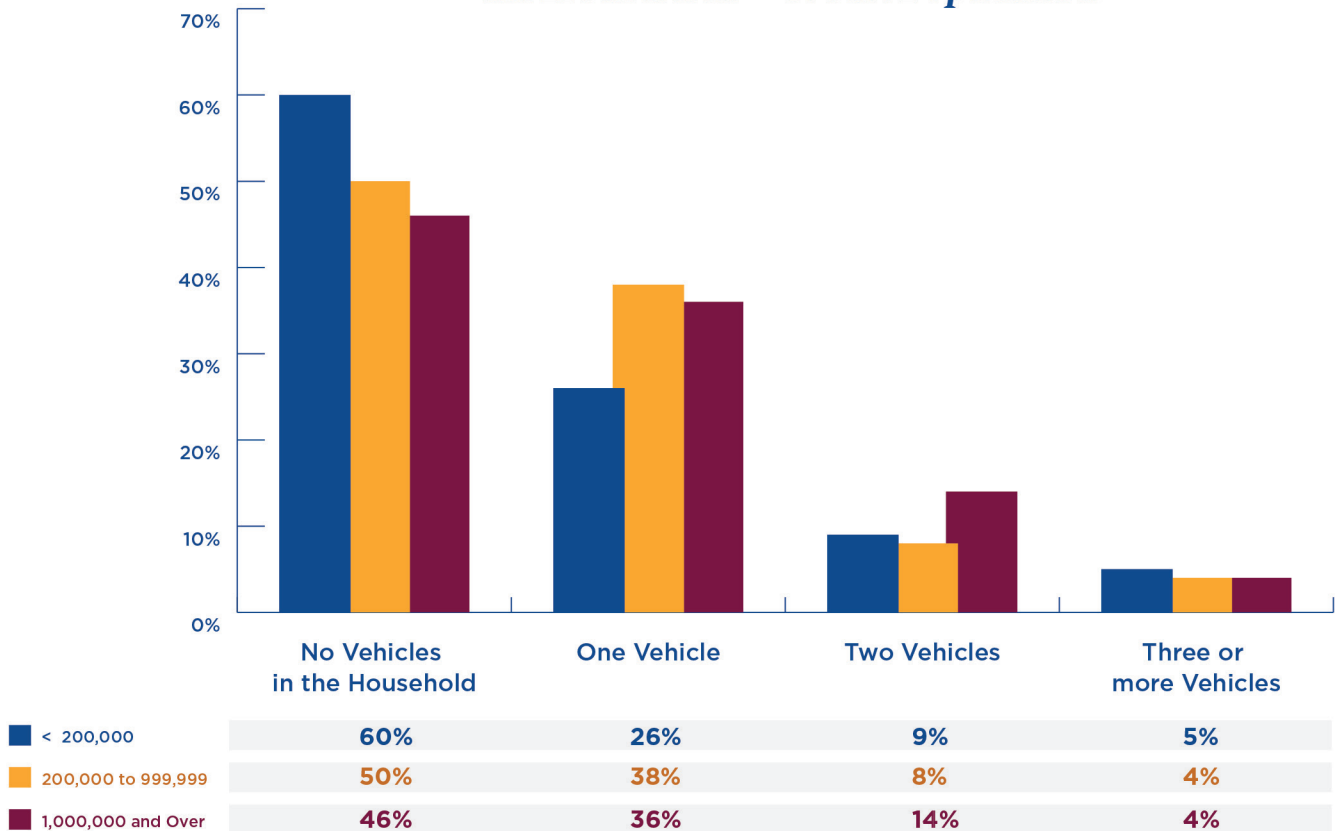


Figure 34

Number of Vehicles Owned/Leased by the Household - Urban Population



Driver's Licenses

Of all transit riders, 65% have a driver's license. Of all transit riders, 43% have a vehicle available to them. Many transit riders have rather limited incomes, and find it difficult to own and maintain a vehicle. Other riders choose to be without a vehicle for various reasons - dislike of driving in traffic, the cost of vehicle ownership, and environmental concerns are often cited. According to various studies, the tendency of persons 16 to 44 years of age to have a driver's license has declined in recent years^{vi}. The greater tendency of

young people to use transit may be a factor contributing to the lower percentage of young adults who feel they need a license.

Driver's Licenses Among Bus and Rail Riders

More rail riders (69%) than bus riders (56%) are licensed to drive. Like the somewhat greater availability of a vehicle to rail riders, this difference is probably related to the fact that rail riders have higher household incomes.

Driver's Licenses and Urban Population

In each set of city sizes, license holders are a strong majority. They are slightly more so in the largest cities where those with a license comprise 65% of the transit users compared to 58% and 59% in the mid-size and smaller cities, respectively.

Number of Reports: 93
Riders Surveyed: 311,151
Average Riders Surveyed per Study: 3,345
Annual ridership: 4,668,019,788

Figure 35

Drivers License - All Transit Users

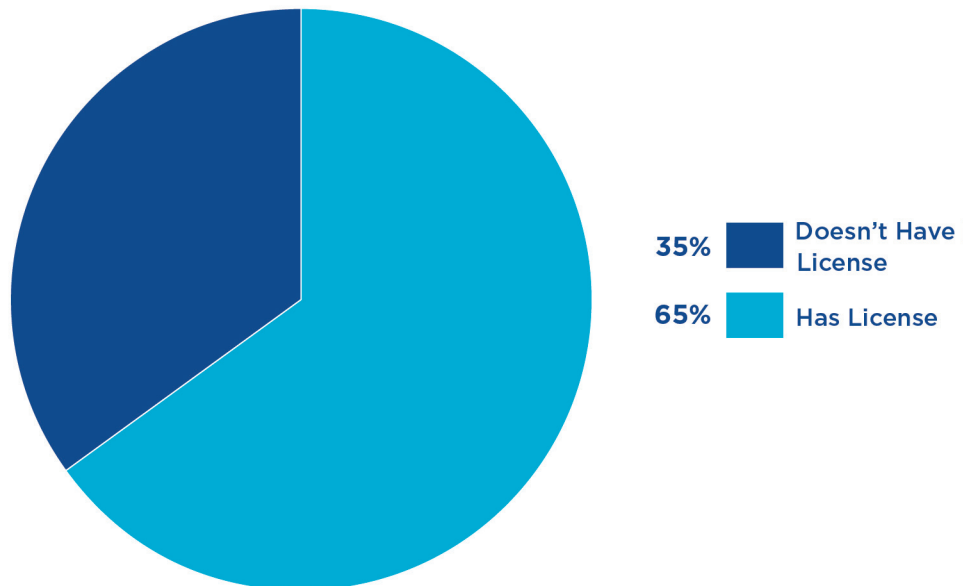


Figure 36

Drivers License- Transit Mode

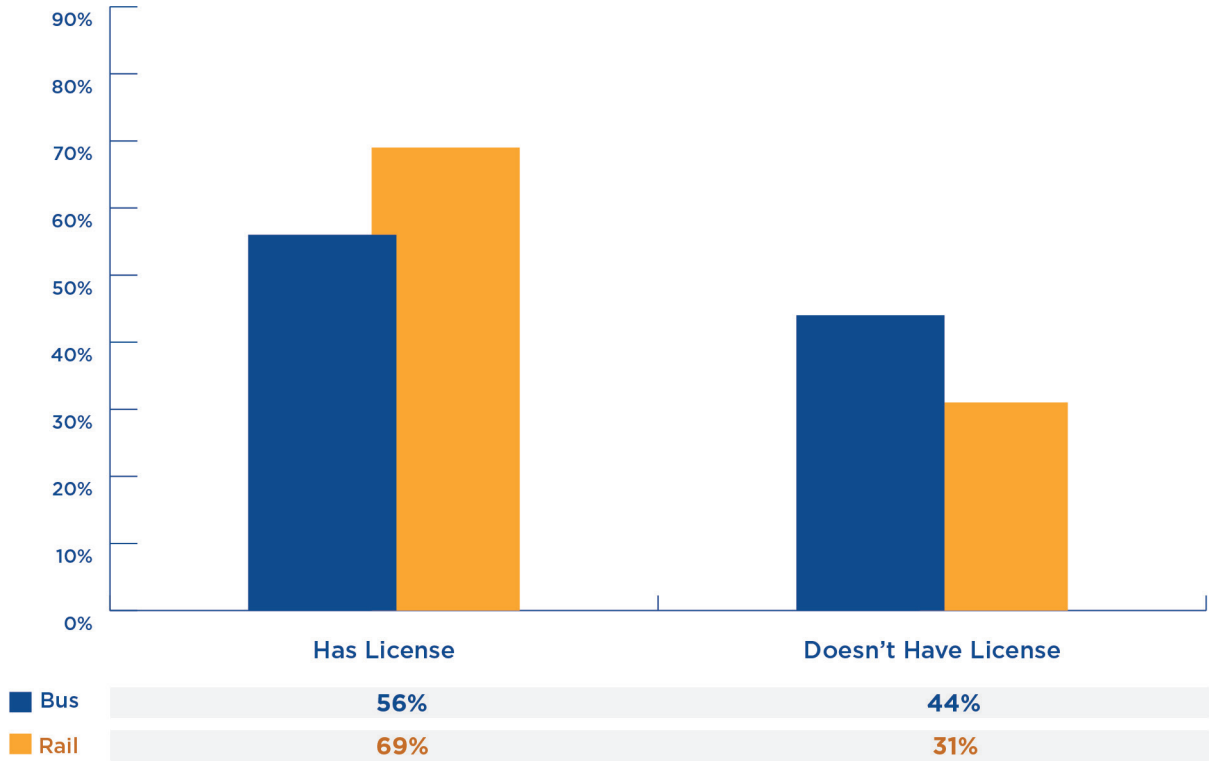
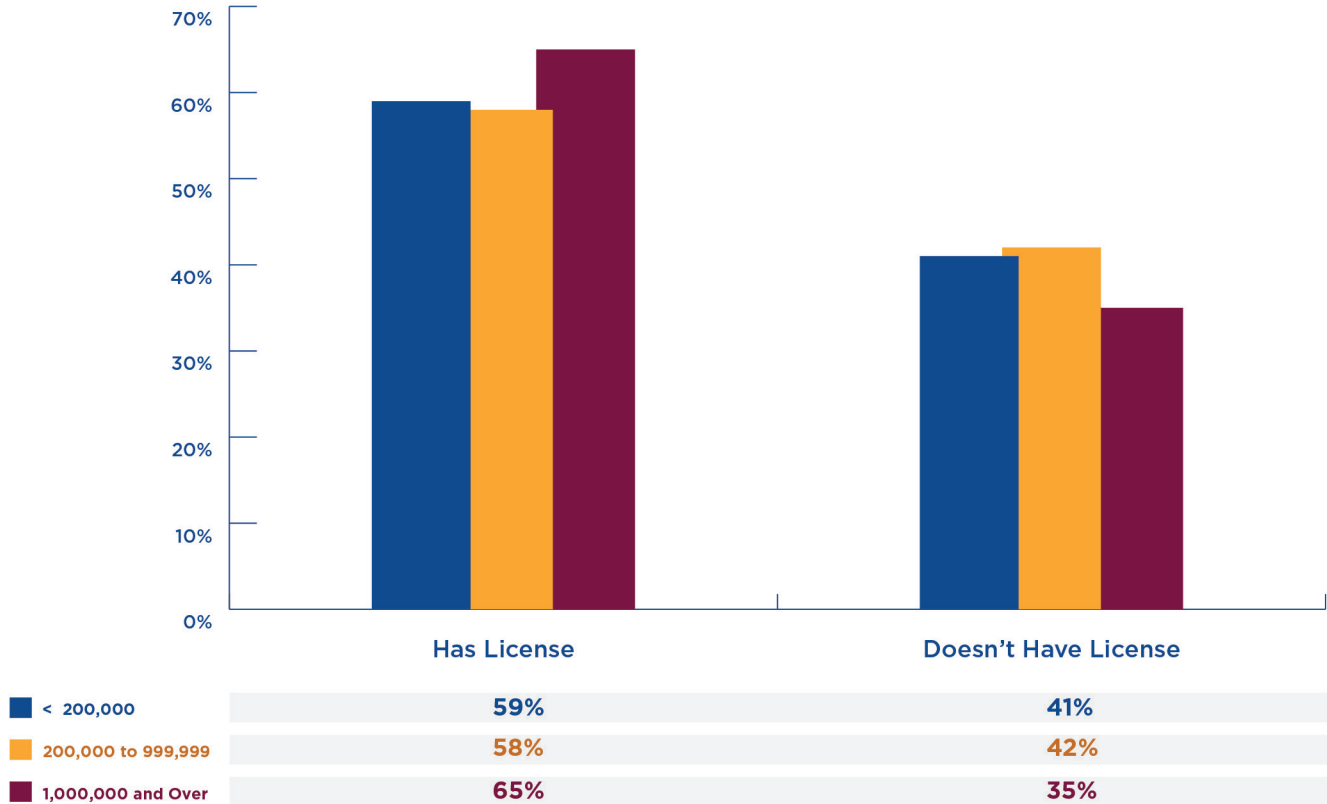


Figure 37

Drivers License - Urban Population



Primary Language

Among all transit users, 85% speak English as their primary language, while 12% speak Spanish and 3% speak other languages. Some transit users may also speak more than one language, but the surveys typically allow for only a single response such as “...the language most often spoken at home.”

The American Community Survey puts the percent of persons eighteen or older in the general population who speak only English at 86%, Spanish speakers at 8% and other languages at 6%. (American Community Survey, Five Year Estimates, 2010-2014). Thus the transit ridership appears similar to

the total U.S. adult population in this respect, although among transit users, the prevalence of Spanish speaking persons is somewhat higher and speakers of other languages somewhat lower.

Primary Language Among Bus and Rail Riders

English is the language spoken by the overwhelming majority of both bus and rail riders, 79% and 88%, respectively. Bus riders (17%) are more likely than rail riders (9%) to speak Spanish.

Number of Reports: 72
Riders Surveyed: 282,258
Average Riders Surveyed per Study: 3,920
Annual ridership: 4,818,978,688

Primary Language and Urban Population

There is very little difference in the distribution of primary language among transit users in cities of various sizes. English dominates at all population levels, varying within a range of only 82% to 88%. However, this means that in the largest cities 15% speak a language other than English. And in the mid-size and smaller cities 18% and 12% respectively, speak a language other than English. Given that there are more than ten billion transit trips annually in the United States, these relatively small percentages nevertheless represent hundreds of millions of riders.

Figure 38

Primary Language - All Transit Users

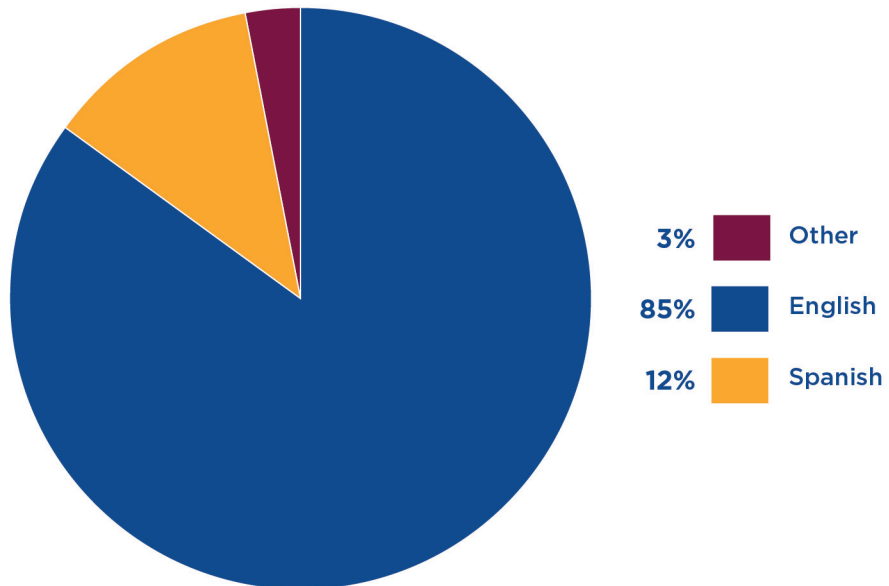


Figure 39

Primary Language - Transit Mode

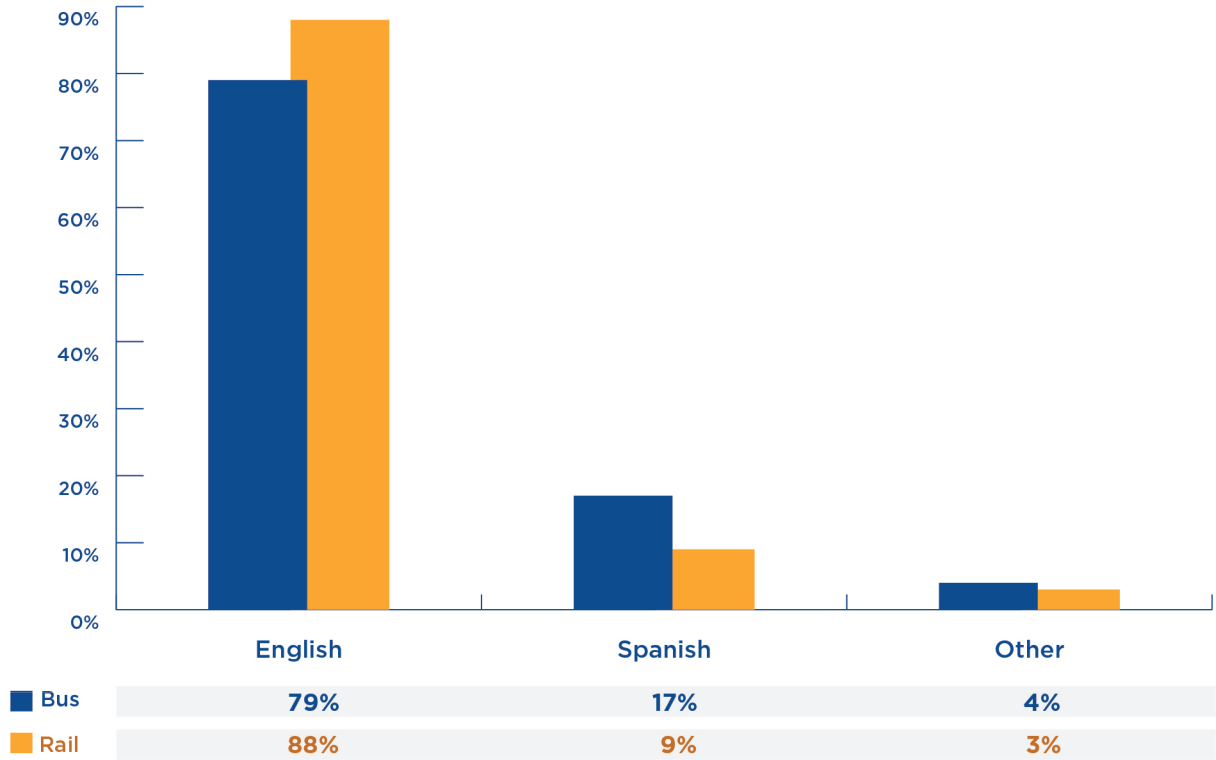
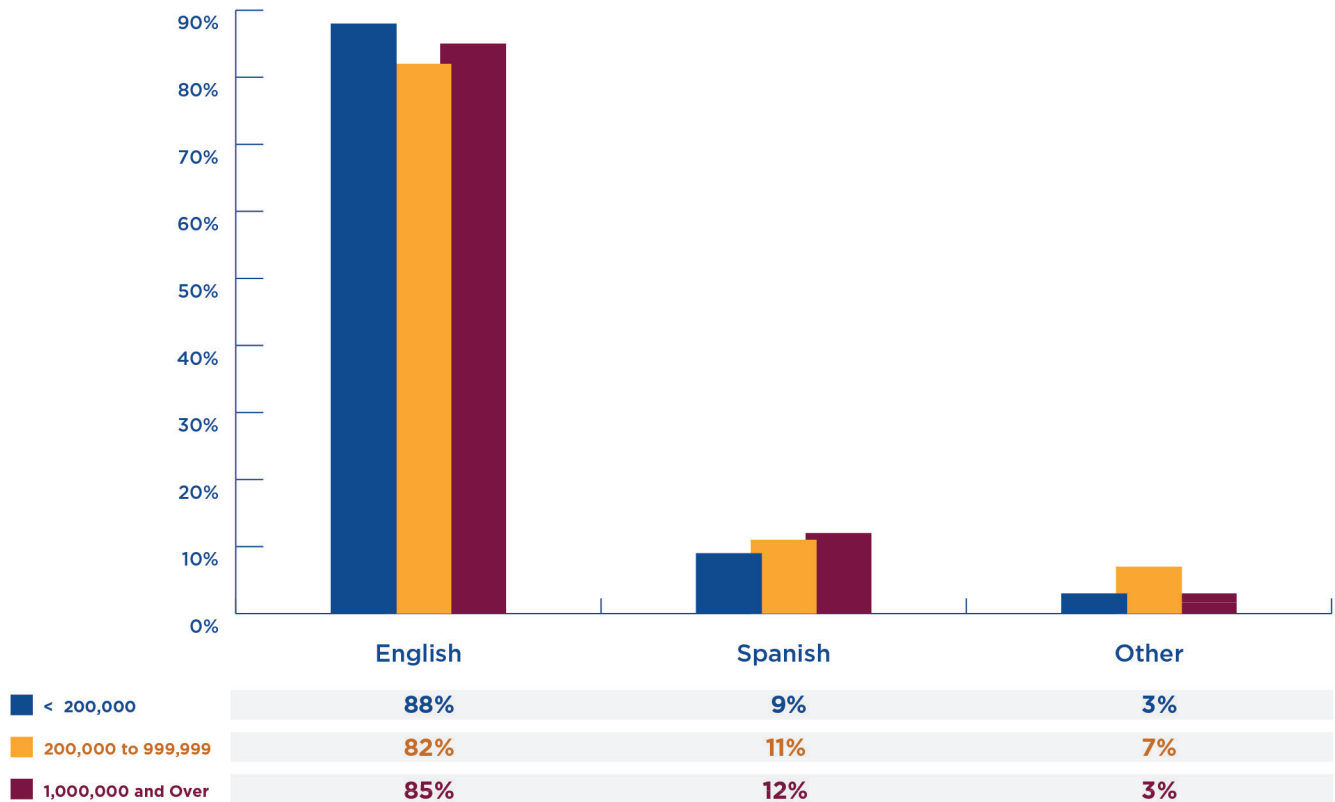


Figure 40

Primary Language - Urban Population



Part 2:
TRAVEL CHARACTERISTICS
How Riders Use Public Transit

Trip Purpose

Trip purpose was asked in various ways among the studies. In some cases, riders were asked the purpose of the trip they were on when surveyed. In other studies, the question involved the “usual” or “most frequent” trip, or “...the main purpose of your transit trip today.” In other surveys, riders were asked where they were coming from and going to with response options such as work, school, shopping, and so forth, and purpose was inferred from those responses.

A total of 87% of the trip purposes involve direct economic impact on the local economy. This includes getting to or from work (49%) or shopping (21%) and recreational spending in the local economy (17%). Since we know that 71% of the riders are employed, clearly many of the employed riders happened to be making trips for other purposes the time they were surveyed. This is one indication of the multiple uses for which riders utilize public transit. Another 6% indicated they were going to or from school or college. A few (1%) were making trips for social visits or church attendance, while 2% were traveling for personal business and 2% for medical/dental visits. A tiny segment, .03%, indicated they were going to or from a visit to a social services office or program.



Number of Reports: 170
Riders Surveyed: 563,774
Average Riders Surveyed per Study: 3,316
Annual ridership:
6,755,298,896

Figure 41

Trip Purpose - All Transit Users

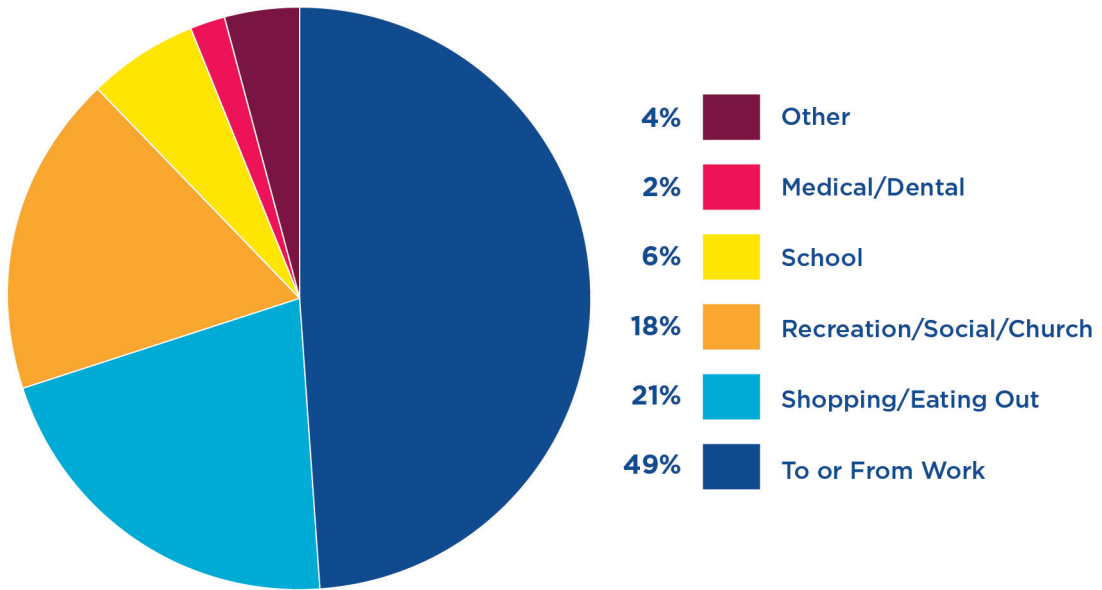
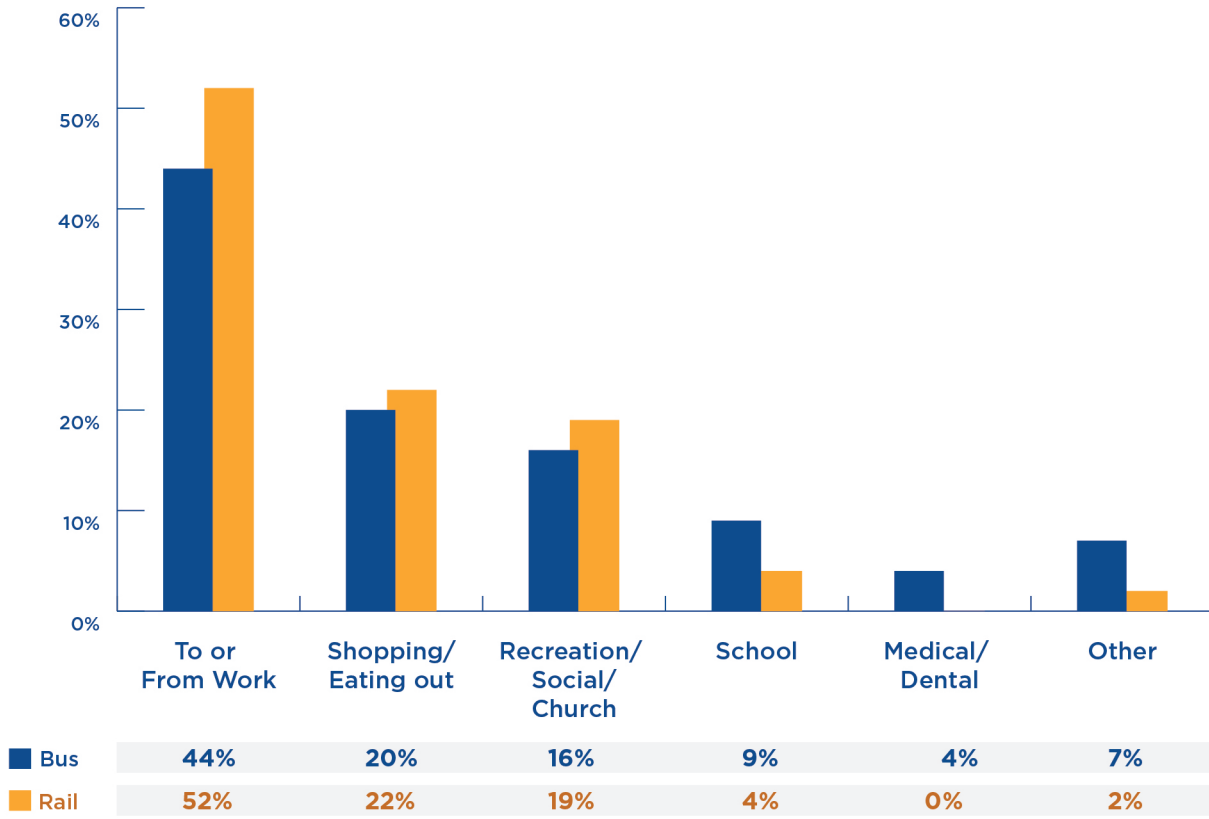


Figure 42

Trip Purpose - Transit Mode



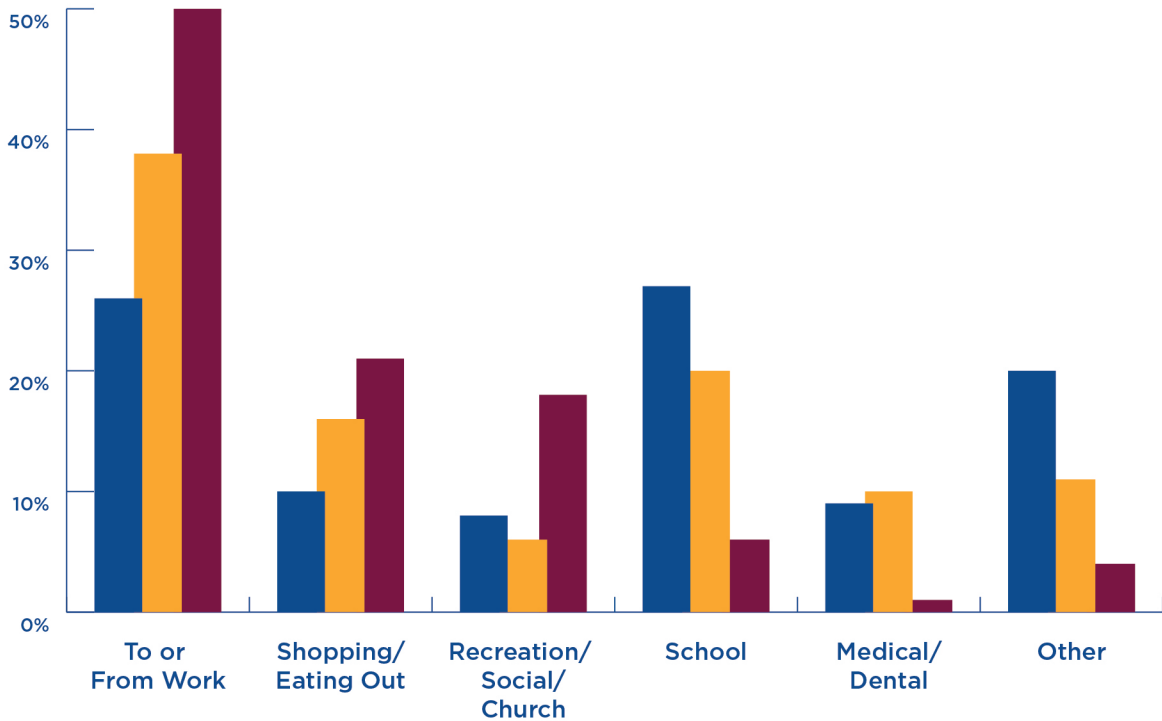
Trip Purpose Among Bus and Rail Riders

Given that rail riders are more likely than bus riders to be employed and to have higher incomes (see Figure 15 and Figure 21), it is not surprising that more rail than bus riders (52% to 44%) indicate that their trip purpose was getting to or from work. Rail riders are also more likely to say they are traveling for theater, concerts, sports events or similar recreational activity.

Bus riders, on the other hand are more likely than rail riders (9% v. 4%) to be making trips to or from school, or medical or dental appointments (4% v. 0%). They are also more likely to be traveling for a variety of miscellaneous reasons which generally include errands such as business appointments, picking a car up from a service appointment, interaction with social services, and the like.

Figure 43

Trip Purpose - Urban Population



■ < 200,000	26%	10%	8%	27%	9%	20%
■ 200,000 to 999,999	38%	16%	6%	20%	10%	11%
■ 1,000,000 and Over	50%	21%	18%	6%	1%	4%

Trip Purposes Among Urban Areas of Varied Size

Work trips are much more frequent among transit users in the largest cities (50%) than in the mid-size (38%) or smaller cities (26%). Similarly, the large city transit users are more likely to cite shopping as the primary trip purpose (21%) than are their counterparts in mid-size (16%) or smaller cities (10%). The large city transit riders are also

much more likely than others to be making a trip for recreational or social purposes (17% compared to 2% and 7% for mid-size and small cities). On the other hand, travel related to school or for personal business and medical dental visits is much more common among riders in the mid-size and smaller cities than in the largest ones.

Reason for Using Public Transit

Respondents in forty-nine of the studies were asked their motivations for using public transit. This refers to their motives for using transit, as opposed to the purpose of a specific trip.

In most of the surveys, respondents were asked the single main reason for using transit, but in some surveys they were allowed multiple responses. In those studies, a respondent could give more than one answer such as "...the train is more convenient and I save on parking." In order to maximize the number

of studies that could be included in the analysis of the reasons for using public transit, the two approaches had to be reconciled. This was done by including all responses in the computation of the percentages. If a given report included multiple responses, all were used. If it included only the single most important reason, that one response was used.

Percentages were computed on the basis of all responses not all individuals. Technically, then, Figure 40 is a chart of percentages of all of the "reasons mentioned" by riders rather than a table showing the percent of riders mentioning a particular reason. However, the pattern of multiple answers closely parallels the patterns of single answers, and it is reasonable to assume that had only single answers been accepted by all of the survey projects, the results would be approximately the same.

The reasons riders give for using public transit can be broken into three general categories, reasons of simple preference not

involving money, reasons of preference for the economy of using transit, and reasons of need. The largest single category is preference for intangible aspects of travel by public transit (44%) such as convenience, saving time, saving the environment, and avoiding traffic. Neither need nor economy is involved - they simply prefer to use public transit.

In addition to those who simply prefer to use public transit, many riders (16%) offer reasons for preferring public transit that have to do with economy, including saving money on parking and gas, and, for a few, taking advantage of an employer transit subsidy. Finally, a substantial number of responses involve a lack of alternatives, including having "no car," "no money," or "...only transportation available." These responses total 40%.

Number of Reports: 49
Riders Surveyed: 140,899
Average Riders Surveyed per Study: 2,875
Annual ridership: 842,366,329



Figure 44 Reason for Using Transit - All Transit Users

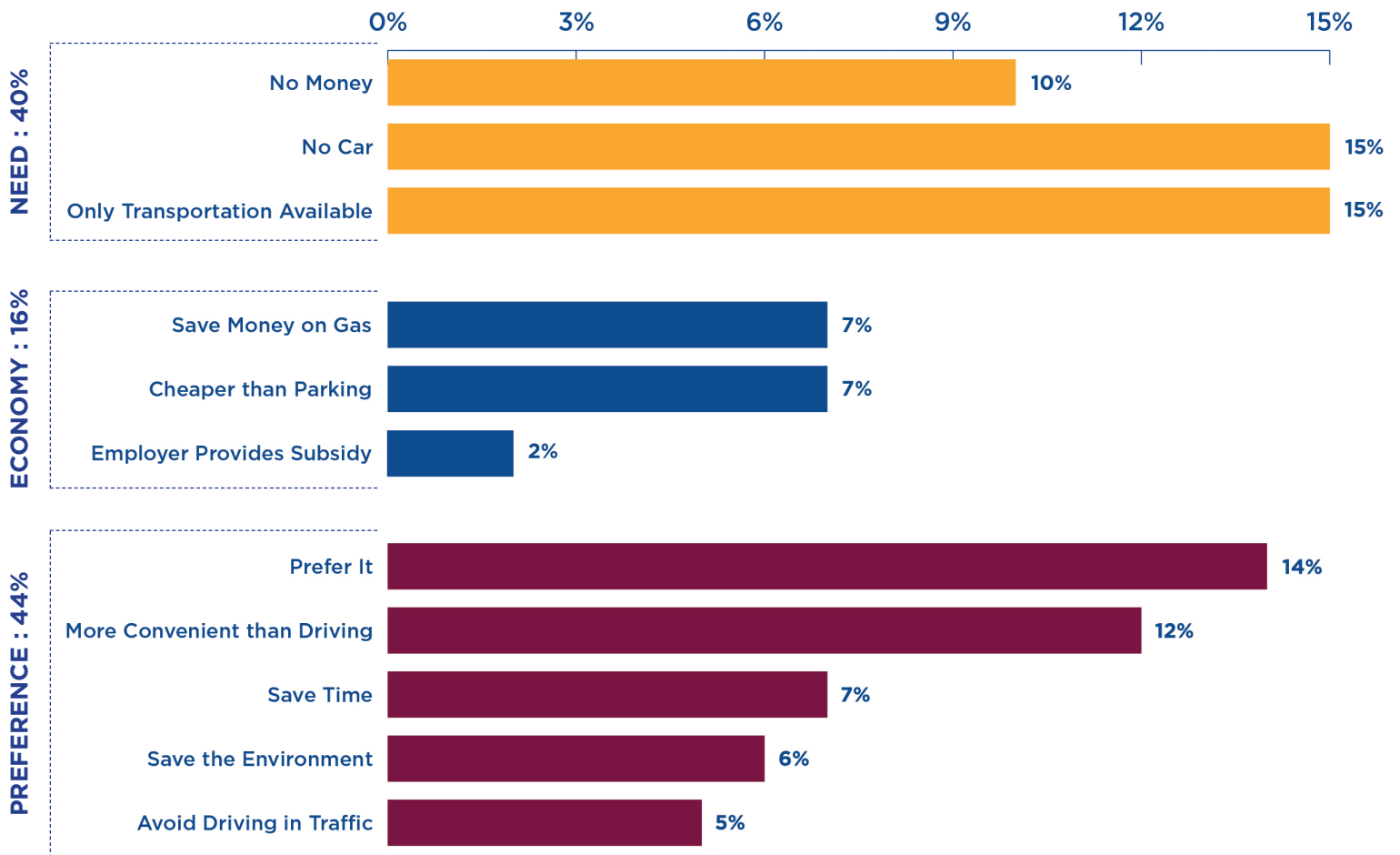
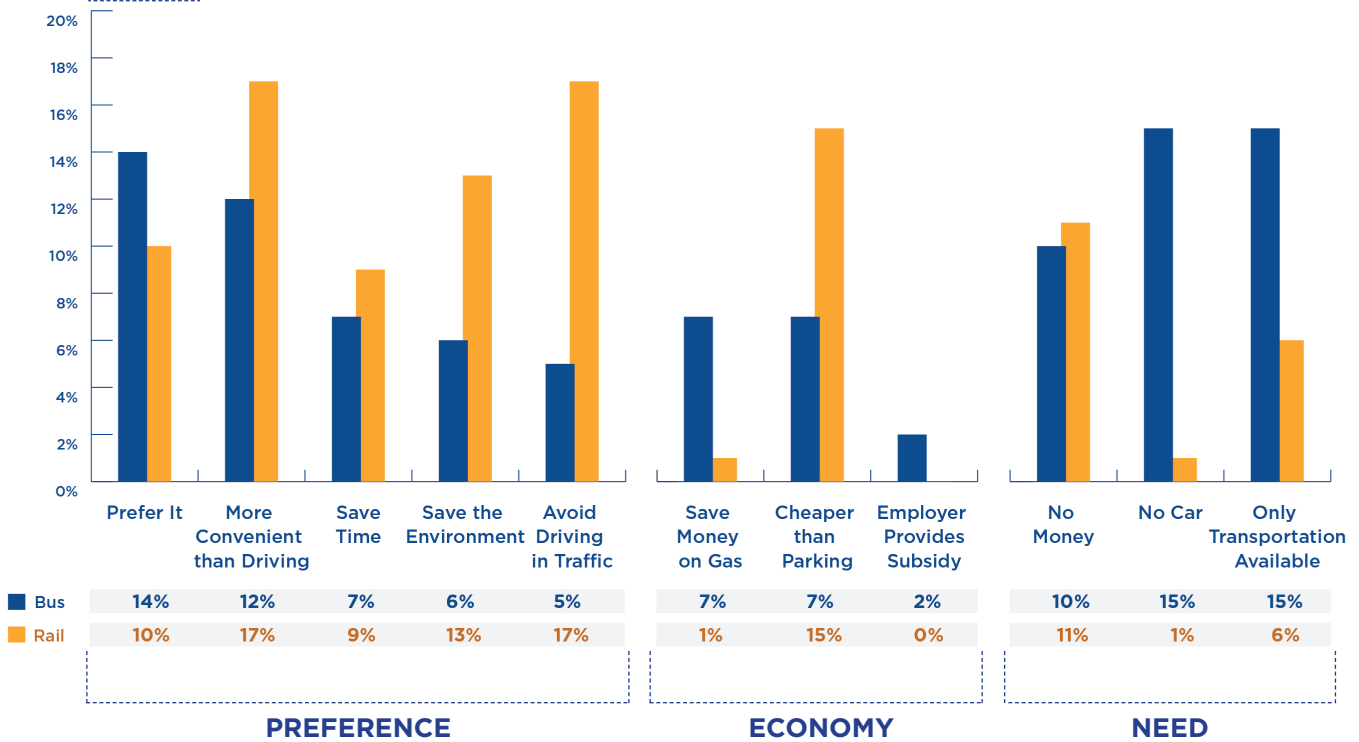


Figure 45

Reason for Using Transit - Transit Mode



Reasons Given by Bus and Rail Riders for Using Transit

The reasons riders give for choosing to use transit vary substantially between bus and rail modes. For example, because they as a group tend to have higher incomes, rail riders are much less likely to state a need-based reason for using public transit than are bus riders. Rail riders tend to give reasons of preference – convenience, avoiding traffic, helping the environment, and preferring to save on parking costs (which may mean they have a vehicle as a transportation option or that they choose not to have a vehicle because of parking costs).

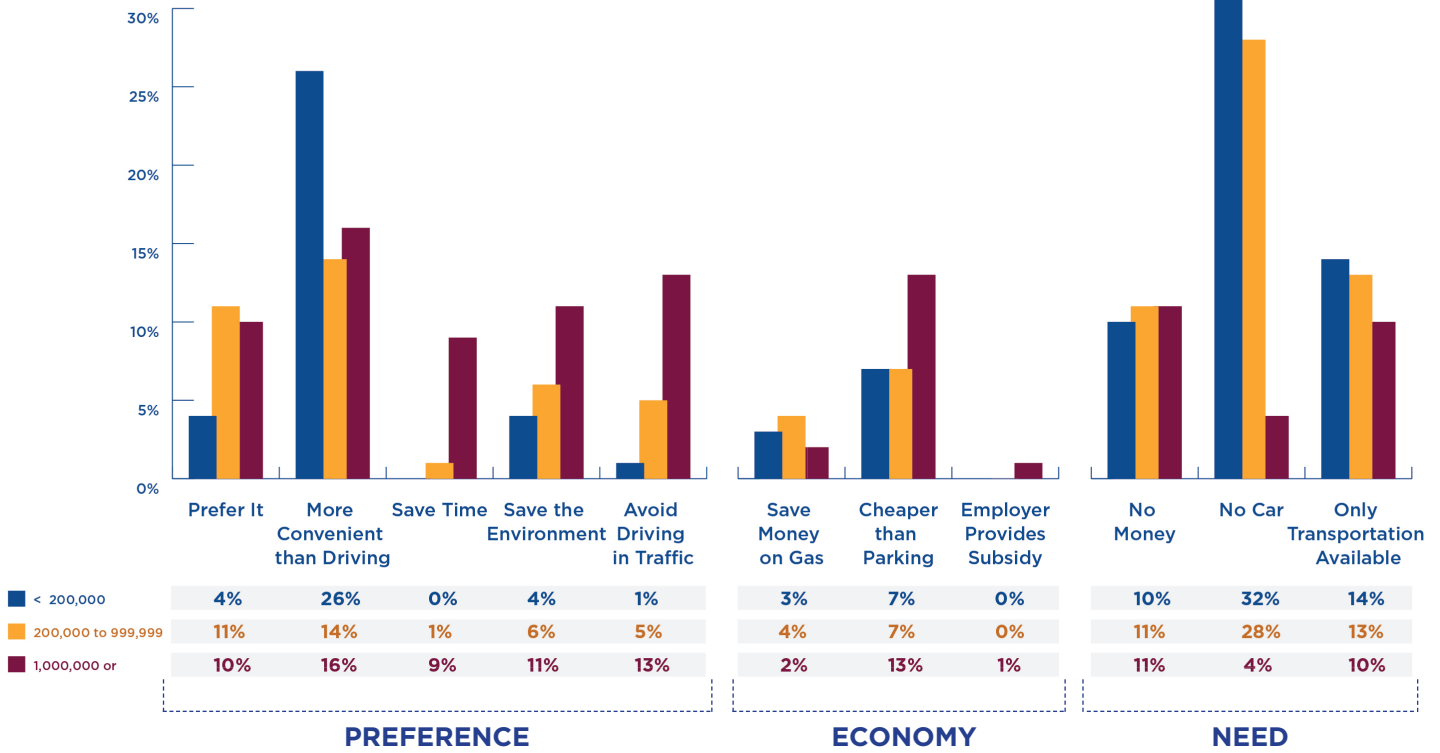
Parking costs are important to them because areas with rail service tend to be high density urban areas where parking is costly. On the other hand, some of the reasons given by rail riders are focused on the necessity of using transit, including the reason of having no money (11%) and lacking a transportation alternative (6%).

Bus riders also frequently say they simply prefer to use the bus, or that it is more convenient than driving. Of the reasons given by bus riders, 14% are simple preference, and 12% convenience

compared to driving. However, they are also more likely to offer reasons focused on need. For example, of the reasons given by bus riders, 15% involve having no car and another 15% having no transportation alternative, and 10% having no money. Like rail riders, 16% of the reasons given by bus riders focus on the economy of using public transit. But bus riders' reasons split between saving on gasoline and parking (7% each) while rail riders focus on saving on parking (15%).

Figure 46

Stated Reason for Using Transit



Reasons Given for Using Transit by Riders in Urban Areas of Varied Size

Riders in the smallest cities (42%) and mid-size cities (39%), where riders tend to have lower household incomes, are much more likely than those in the largest cities (15%) to cite needs, specifically lack of a car or funds or a lack of an alternative mode, as reasons to use transit. Compared to riders from the smallest cities, those from the largest cities are more likely to say they ride because they prefer to use

transit for its convenience (16%), avoiding traffic (13%), aiding the environment (11%), saving time (9%) or just because they prefer it (10%), and they save money on parking (13%).

Among riders in the smallest urban areas, one reason given - that using transit is more convenient - is notable because the percent citing is so much greater (26%) than cite it in the

mid-size (14%) or largest (16%) cities. One reason for this may be that a substantial number of the transit systems in the small communities are located in cities with proportionally large college student populations who may consider using transit to be a convenience.

Days per Week Using Transit

More riders use public transit five days a week (50%) than any other usage pattern. In addition, another 13% use it six or seven days a week. Studies tend to find that among the five day riders, commuting is the primary trip purpose, but it is among the primary trip purposes for many others as well. Although those using transit more or less than five days may also be commuters, their purposes are usually more diverse.

Frequency of Using Transit Among Bus and Rail Riders

Both bus (47%) and rail (55%) riders are more likely to use transit five days a week than to use it more often or less often. Rail riders are more likely than bus riders to use it five days, presumably because more of them are commuting to or from work. Bus riders are more than twice as likely as rail riders (15% to 7%) to use transit six or seven days a week, and conversely, they are less likely to use transit less than one day a week.

Frequency of Using Transit and Urban Population

Transit users in the largest cities are considerably more likely (51%) to use transit five days a week than riders in mid-size cities (40%) or small cities (30%). Conversely, riders in the mid-size and small communities are more likely (23% and 25%, respectively) to use transit six or seven days a week.

Number of Reports: 147
Riders Surveyed: 560,628
Average Riders Surveyed per Study: 3,813
Annual ridership: 3,340,635,488

Figure 47

Days Using Transit Each Week - All Transit Users

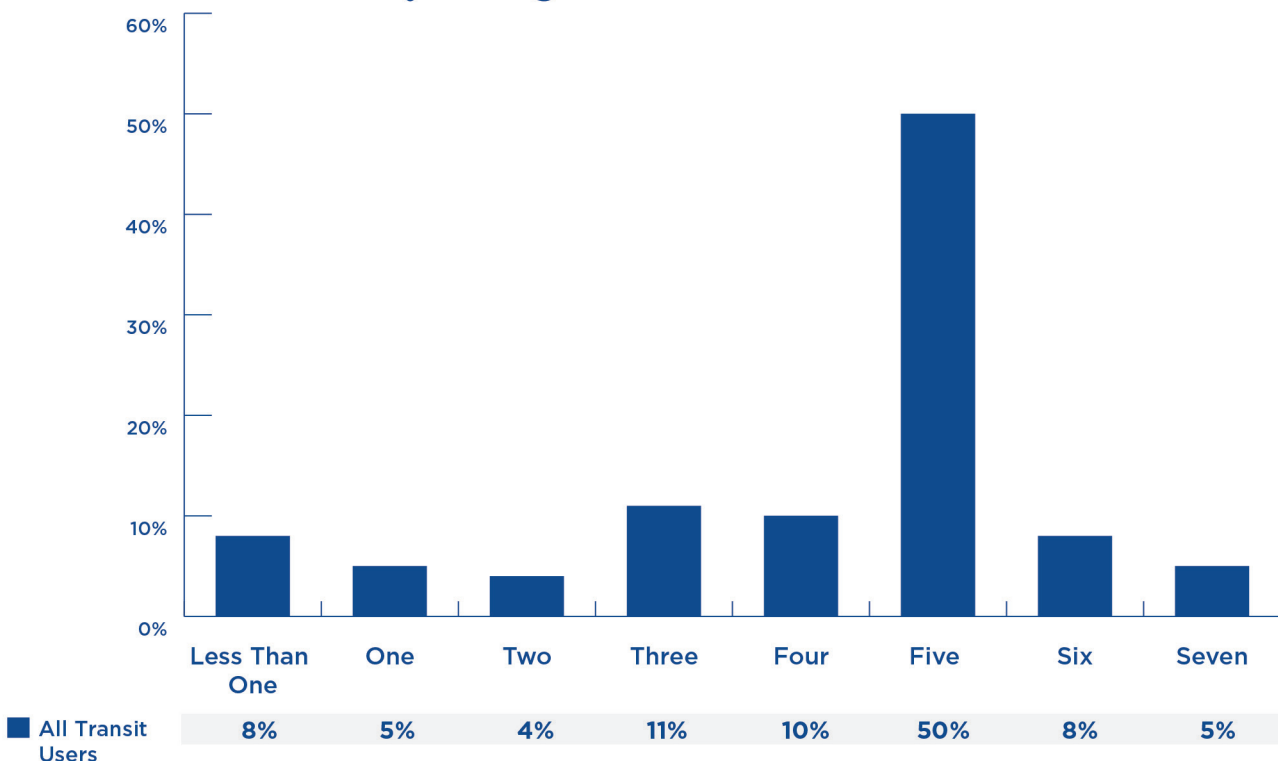


Figure 48

Days Using Transit Each Week - Transit Mode

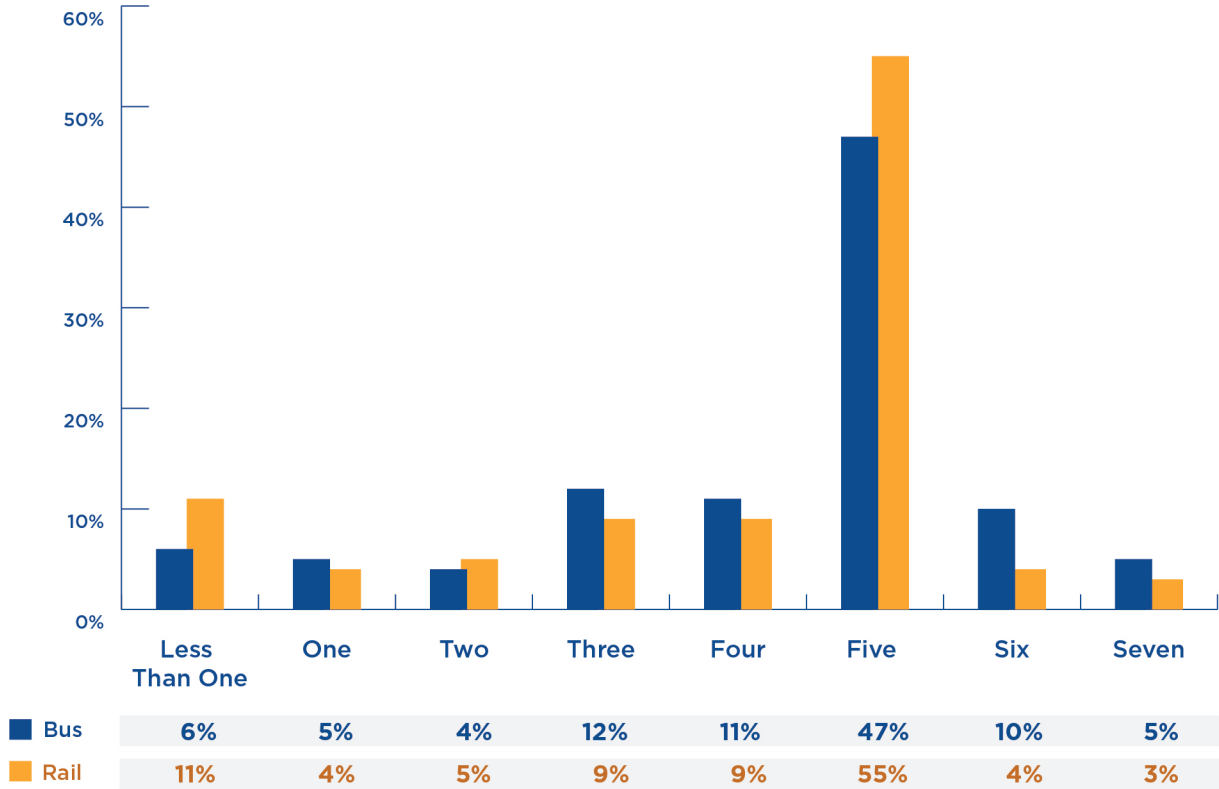
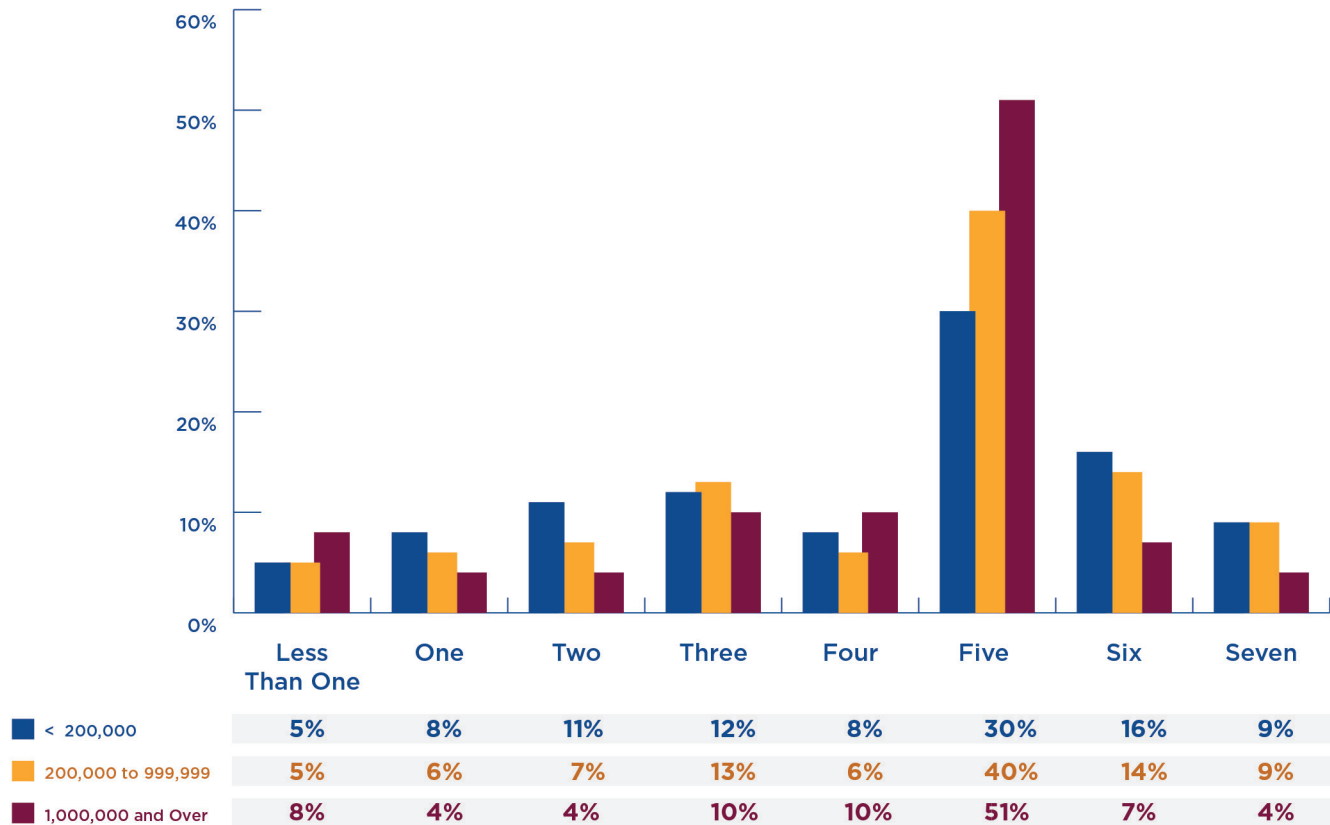


Figure 49

Days Using Transit Each Week - Urban Population



Access Mode

More than two-thirds of transit users (69%) walk to their stop or station. Another 11% drive to their stop, while 10% indicate that they use another form of transit. The balance are either dropped off (6%) or use another mode.

Access Mode Among Bus and Rail Riders

While most rail as well as bus passengers walk to their station or stop (55% and 81%, respectively), rail passengers are much more likely

than bus passengers to drive to their station or stop (21% to 3%), or to be dropped off (8% to 4%).

Access Mode and Urban Population

Given that rail service is associated with larger cities, the relationship between urban size and access mode is not surprising. The smaller the city, the greater the proportion of passengers who walk to their stop. In the smallest cities, 90% walk, while in the mid-size cities, 79% walk, and in the

largest cities, 68% walk. Conversely, the larger the city, the more likely passengers are to drive or take another transit mode to the first stop on the system being studied. In cities of one million or more, 11% drive to their boarding point, while in the smallest cities, only 1% do so.

Number of Reports: 130
Riders Surveyed: 553,335
Average Riders Surveyed per Study: 4,256
Annual ridership: 3,481,730,346

Figure 50

Access Mode - All Transit Users

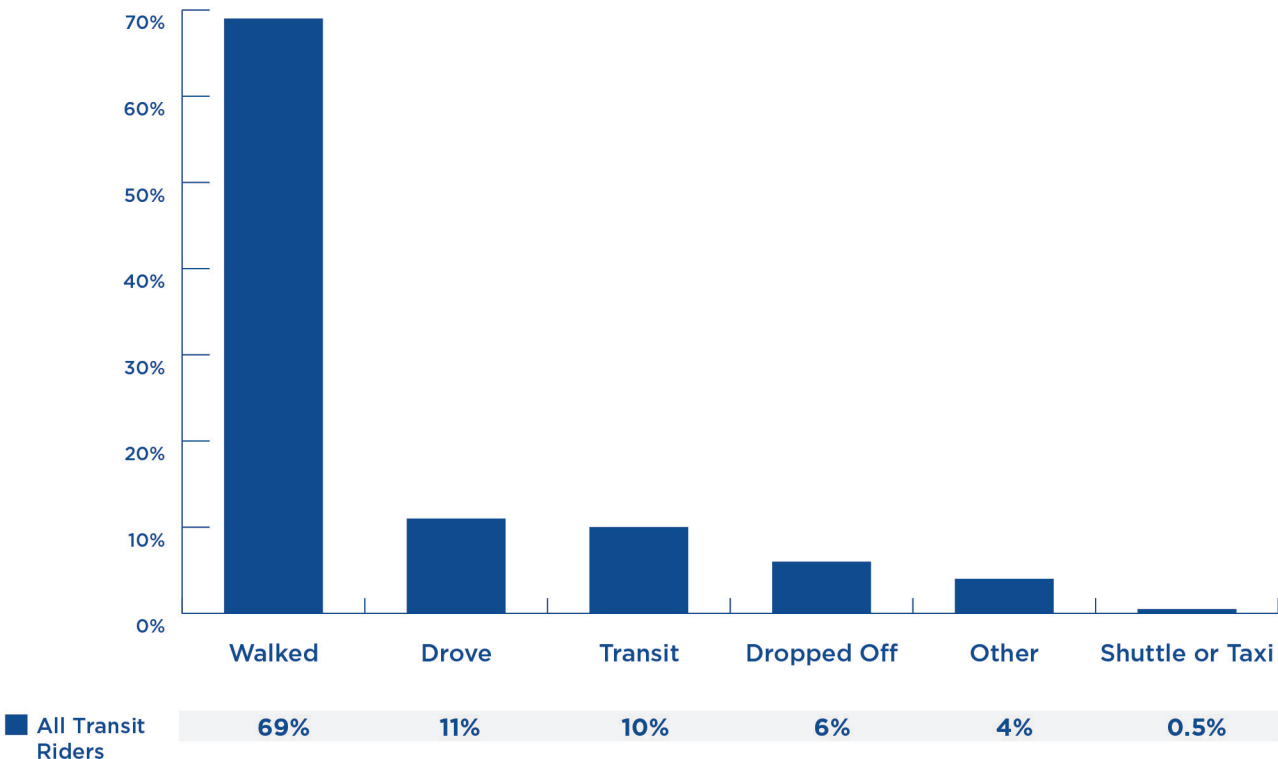


Figure 51

Access Mode - Transit Mode

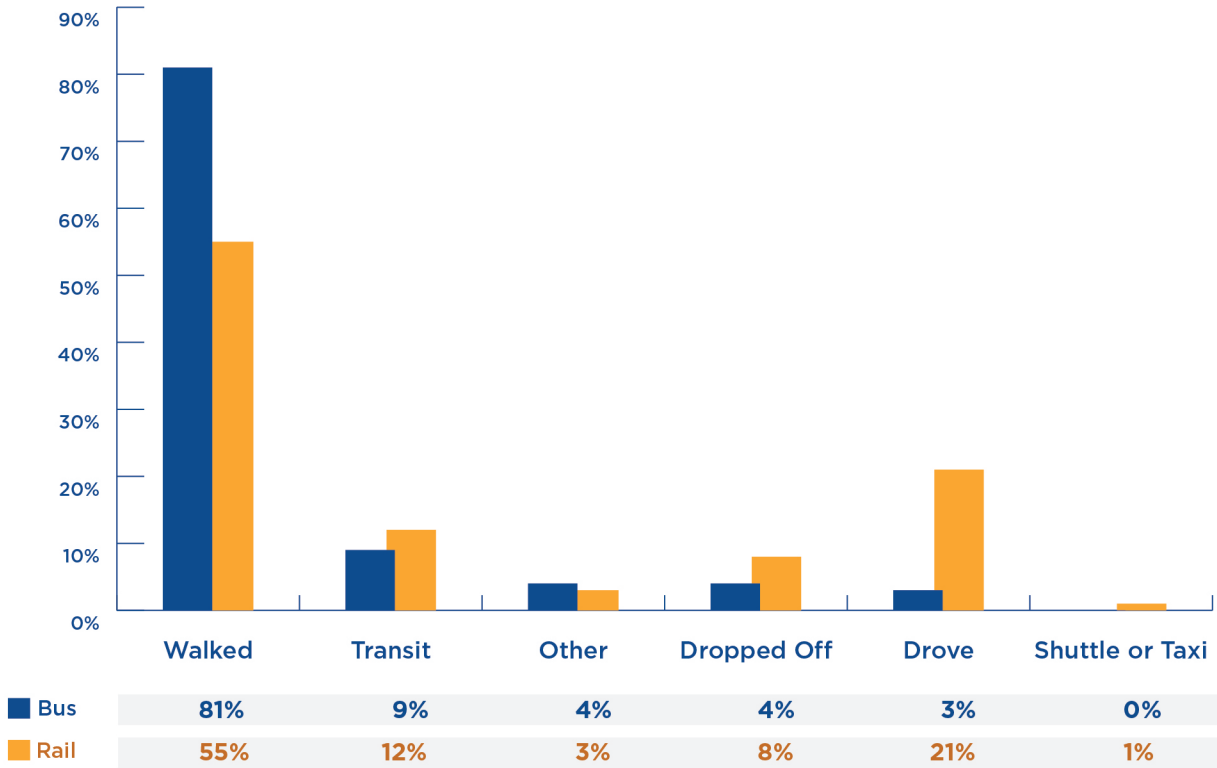
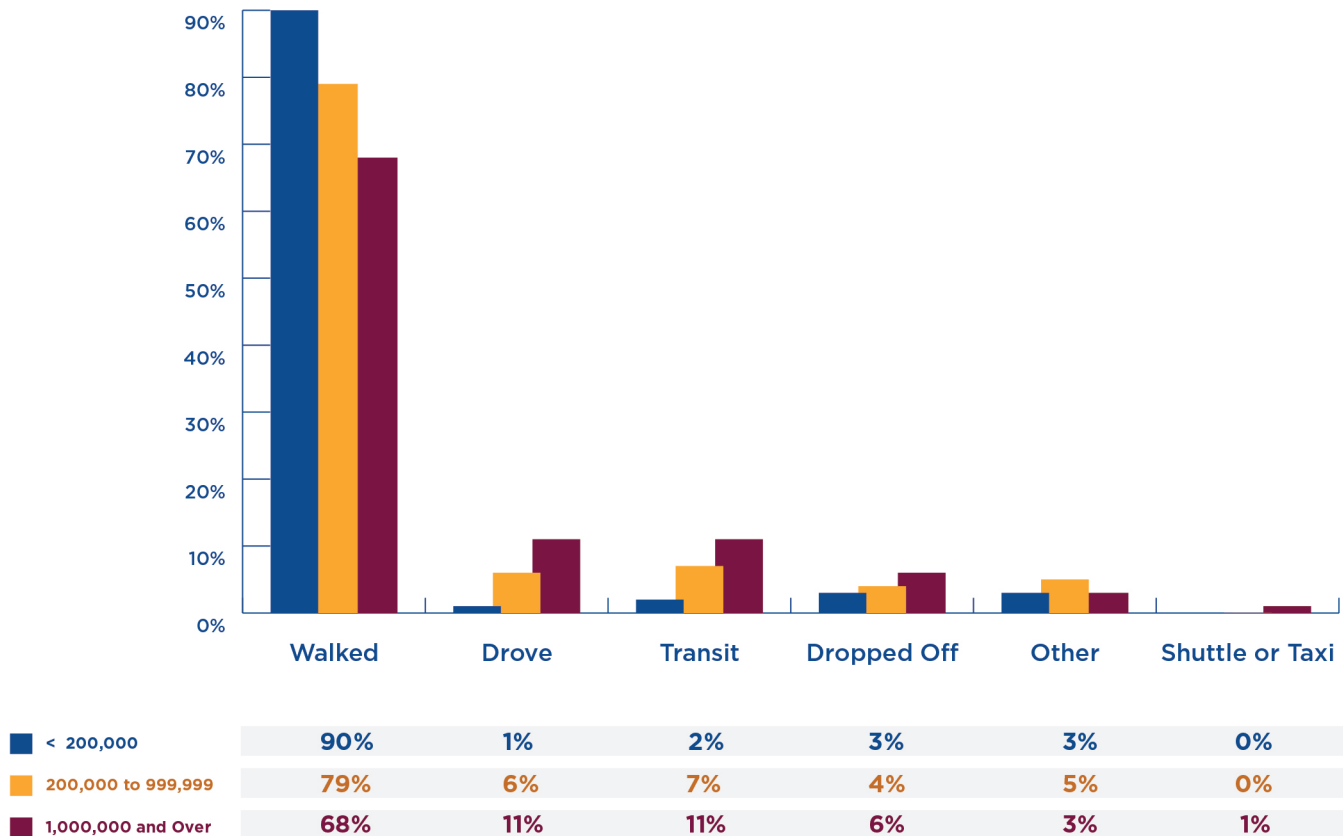


Figure 52

Access Mode - Urban Population



Egress Mode

On alighting from their transit vehicles, most transit passengers walk to their destination (76%). Another 16% transfer to another transit vehicle, while 4% drive, 3% get a ride, and 1% could not be classified except as “other.”

Number of Reports: 97
Riders Surveyed: 422,078
Average Riders Surveyed per Study: 4,351
Annual ridership: 2,781,848,045

Egress Mode Among Bus and Rail Riders

Most bus and rail passengers walk to their destination upon alighting. This is true of 80% of bus passengers and 72% of rail passengers. Although the overwhelming majority of rail passengers walk to their destination, they are somewhat less likely than bus passengers to do so, and somewhat more likely to transfer to another form of transit (19% v. 13%) or to drive (6% v. 4%).

Egress Mode and Urban Population

Regardless of the size of the city, more than three-fourths of the transit riders walk to their destinations from their transit vehicles. However, the larger the urban area, the more likely the passengers are to get a ride. In the smallest cities, only 7% get a ride, but in the largest cities, 16% say they get a ride from the transit stop to their eventual destination.

Figure 53

Egress Mode - All Transit Users

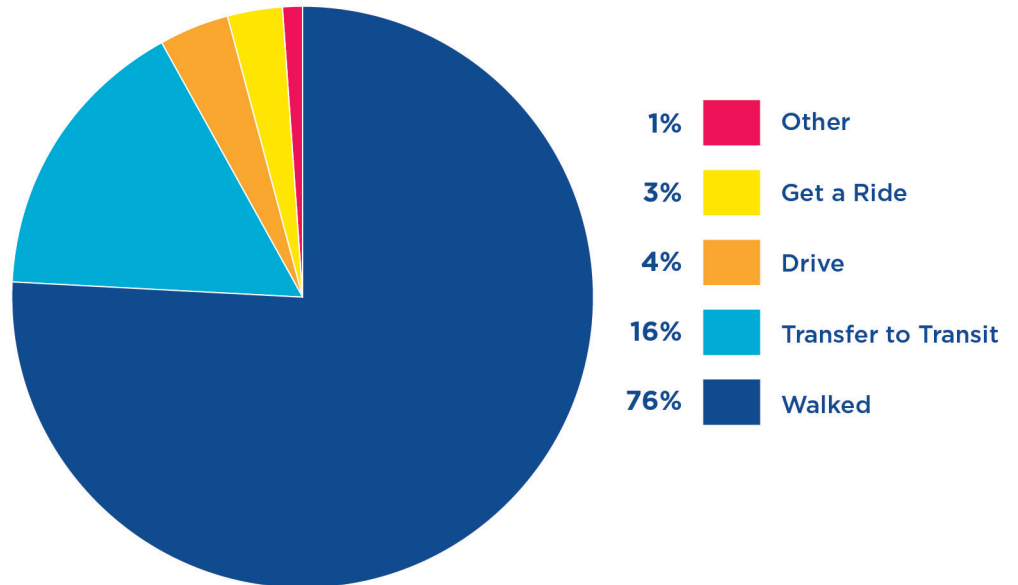


Figure 54

Egress Mode - Transit Mode

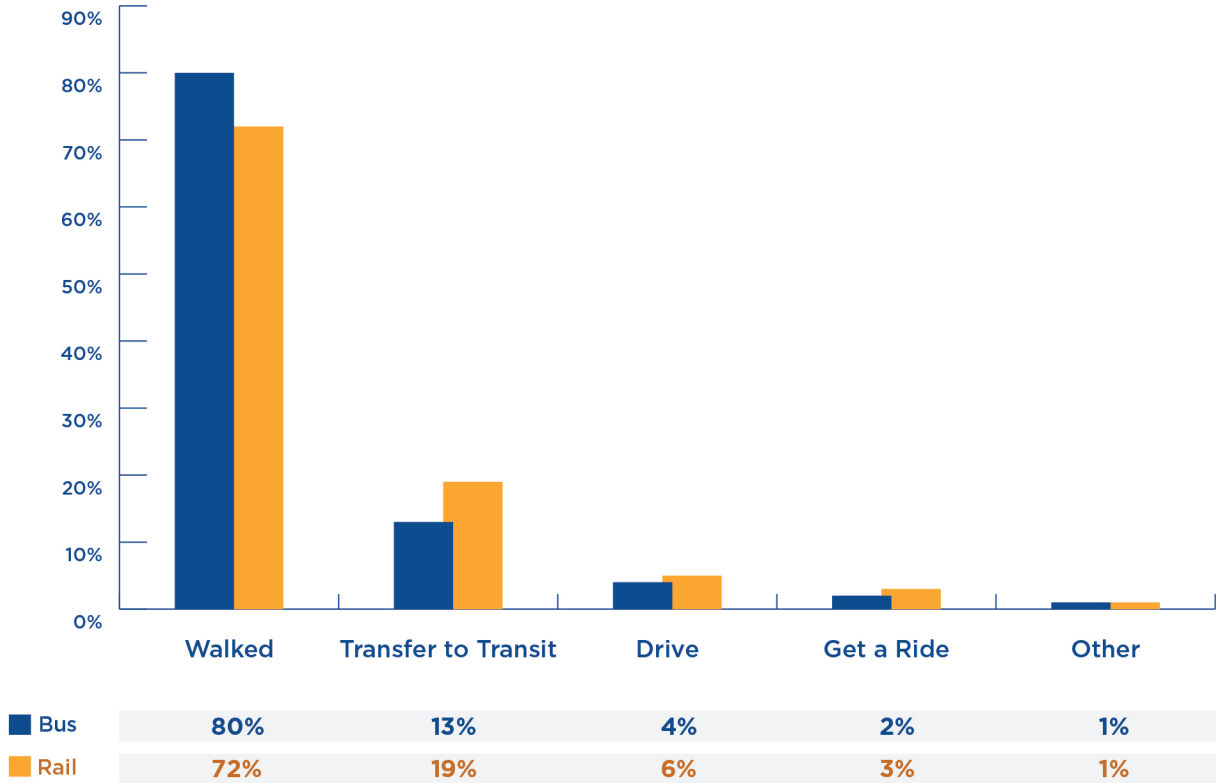
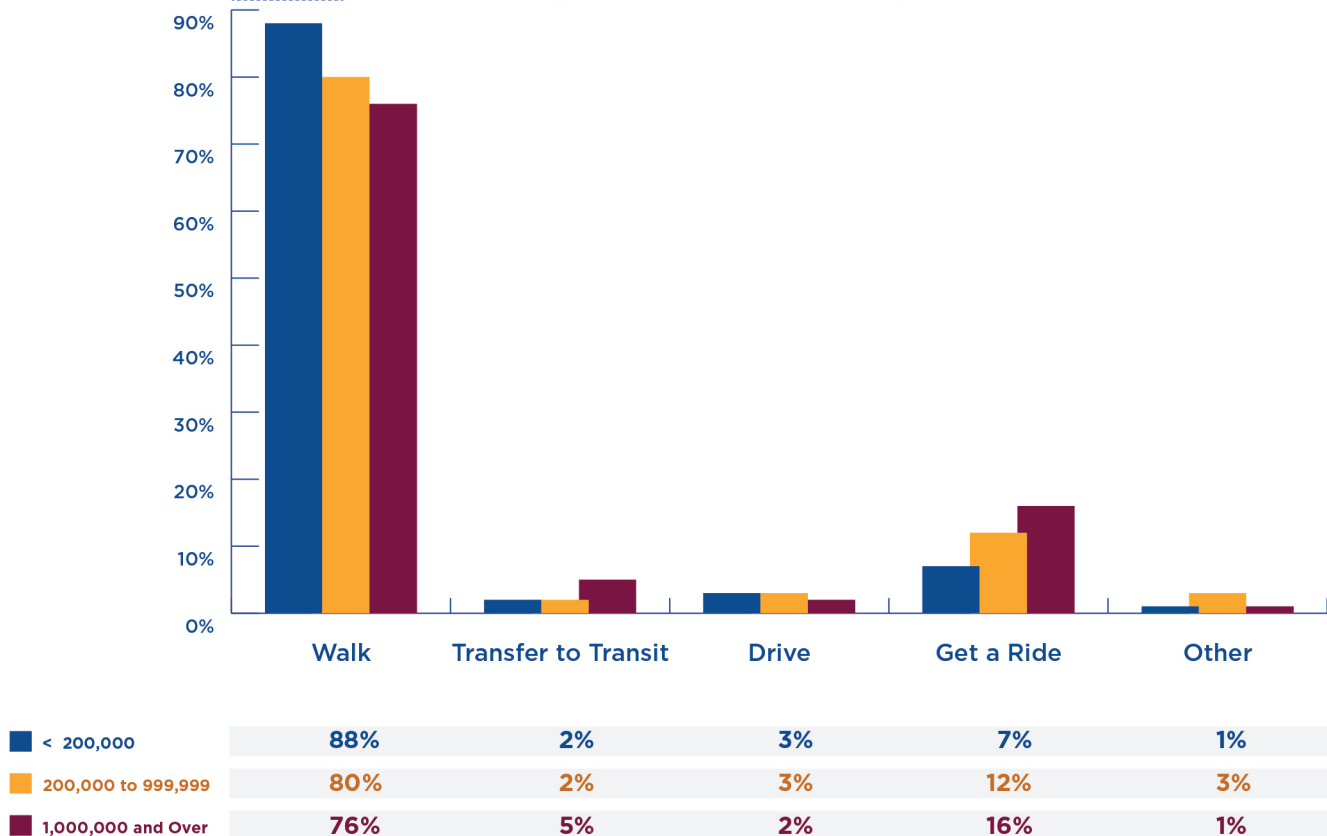


Figure 55

Egress Mode - Urban Population



Alternate Mode

Riders were asked what alternative mode they might use if transit service were not available. The largest responses were that they would not make the trip (22%) or that they would use other transit services (20%). The balance, 57%, say they would find another means of travel.

Of the latter group, 17% would drive. A total of 16% would either car/vanpool, get a ride or take a taxi. (The car-sharing services Uber and

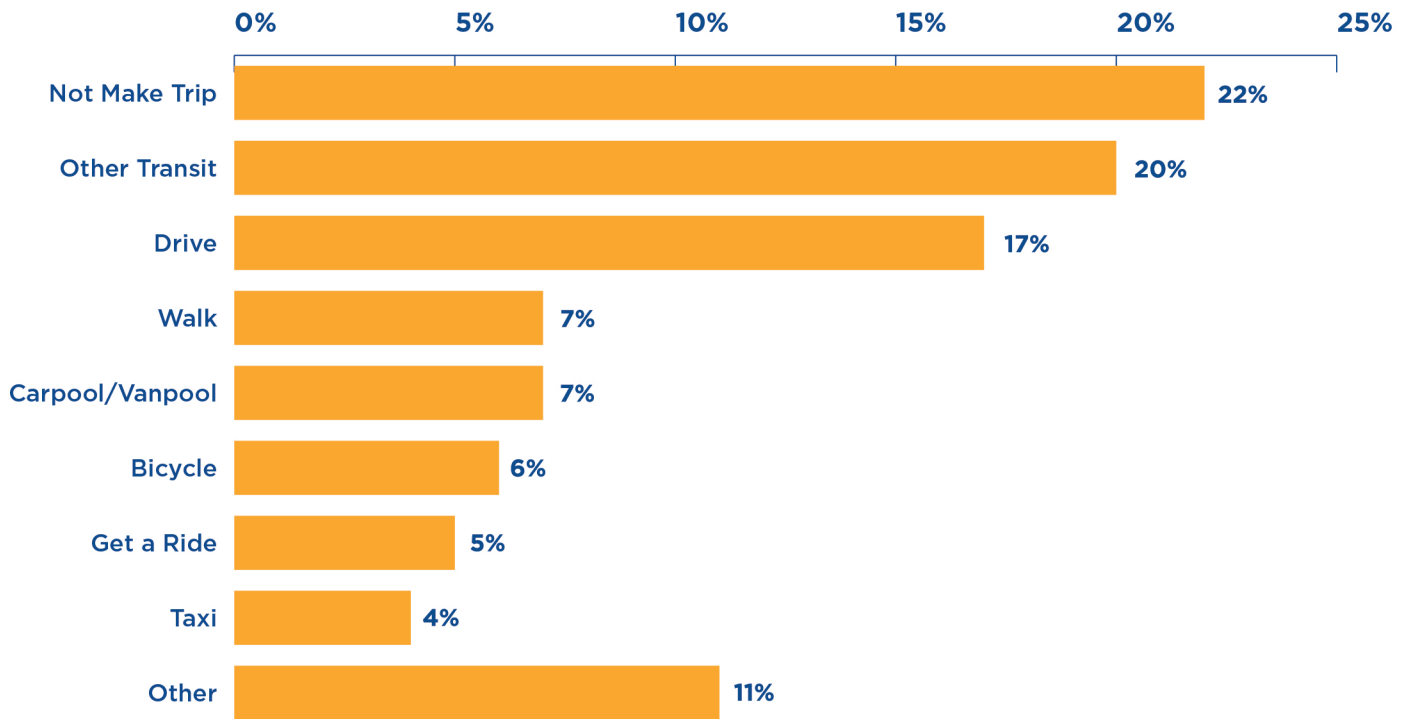
Lyft arrived too late in the 2008-2015 period covered in this report to be included as a category.) Others would walk (7%) or bicycle (6%). Another 11% were classified in the various reports as “Other”.

Number of Reports: 69
Riders Surveyed: 233,925
Average Riders Surveyed per Study: 3,390
Annual ridership:
1,649,063,495



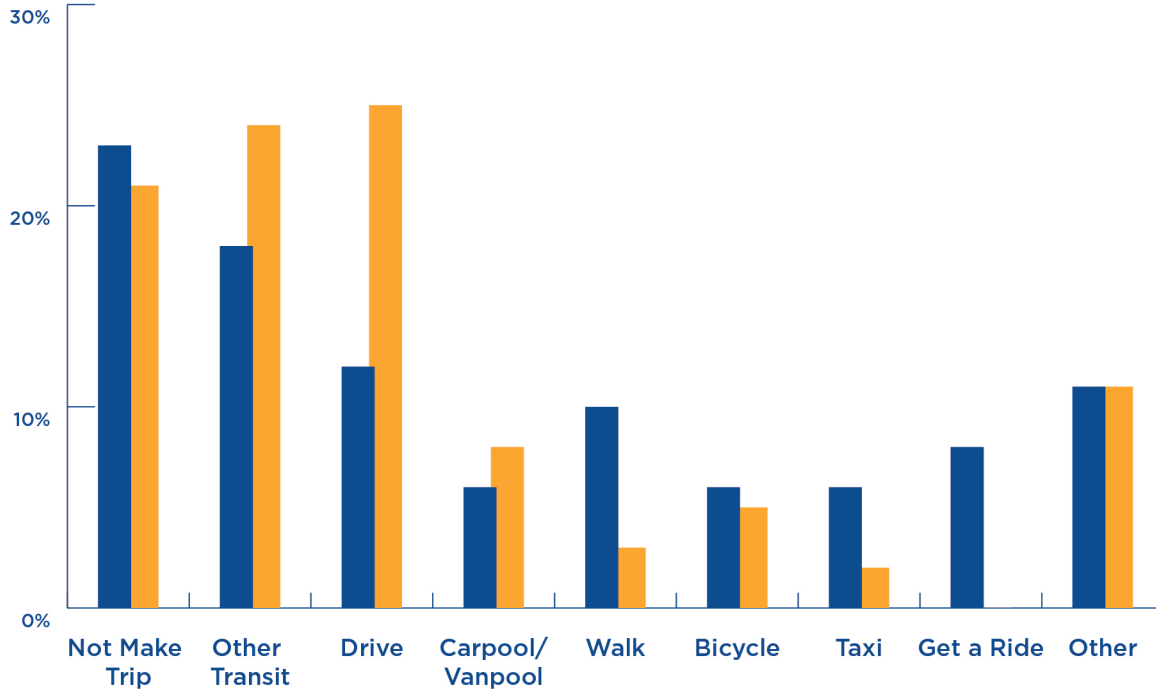
Figure 56

Alternate Mode - All Transit Users



Alternate Mode if Current Mode Were Not Available

Figure 57



Bus	23%	18%	12%	6%	10%	6%	6%	8%	11%
Rail	21%	24%	25%	8%	3%	5%	2%	0%	11%

Alternate Mode Among Bus and Rail Riders

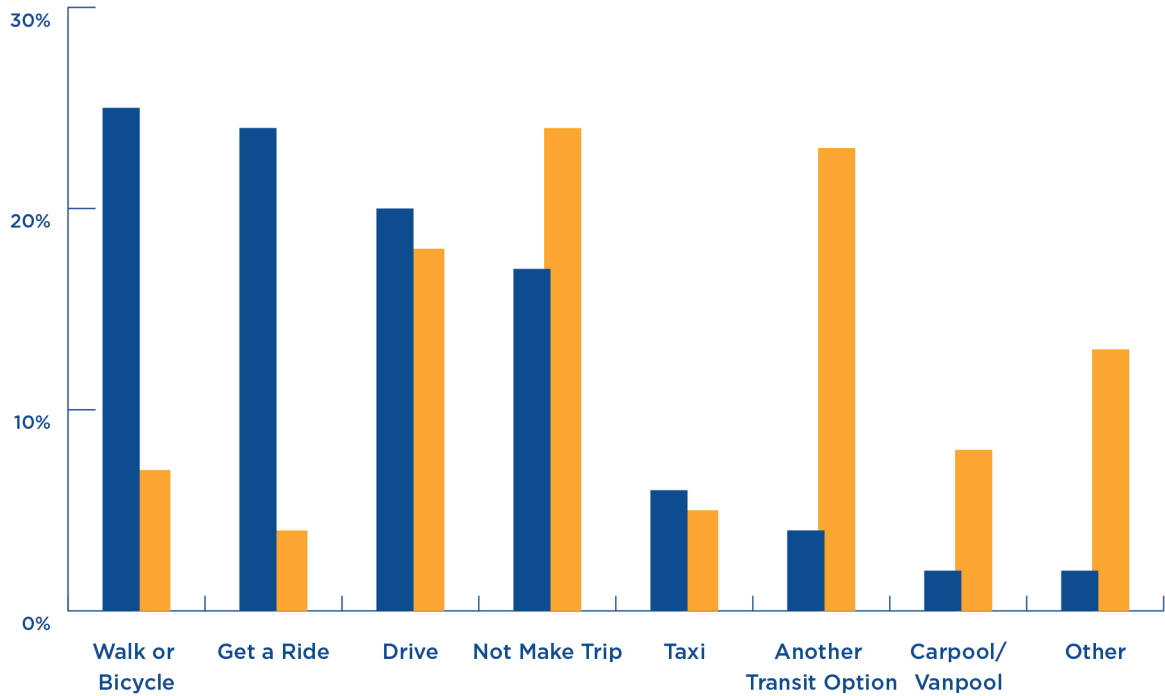
Bus and rail riders differ in their view of what they would do in the absence of the mode they normally use. Twice as many rail riders (25%) as bus riders (12%) say they would drive, and 24% of rail riders say they would use another form of transit compared to 18% of bus riders. On the other hand, more than three

times as many bus riders (10%) as rail riders (3%) say they would walk and three times as many bus riders (6%) as rail riders (2%) said they would take a taxi. And while none of the rail riders said they would get a ride, 8% of the bus riders said they would do so.



Figure 58

Alternate Mode - Urban Population



■ < 1,000,000	25%	24%	20%	17%	6%	4%	2%	2%
■ 1,000,000 or more	7%	4%	18%	24%	5%	23%	8%	13%

Alternate Mode and Urban Population

Too few reports in the smallest cities included a question about alternative modes to make cities of under 200,000 a separate category in Figure 58 as is done in most other charts. Therefore, the small and mid-size cities are combined here.

The alternative modes are shown here in descending order of percentages in the urban areas of less than one million.

Notice that:

- The tendency to walk or get a ride is far greater in the smaller urban areas.
- The option of driving is very similar regardless of urban size.
- The use of another transit option is much greater in the larger urban centers, as could be expected.
- Car and vanpooling is also greater in the larger urban areas.

Fare Media

Most transit riders, 86%, use a pass medium of some type to pay their fares. The use of cash, once the common fare medium, has diminished to only 11% of the ridership nationally.

A few riders travel free. Free fare is sometimes a benefit extended to people over a given age. In other cases certain kinds of bus trips – some circulators, certain shuttles, some school trips, etc. -- are free for all riders. The “Other” category (3%) includes categories that were not clearly labeled as pass, cash, or free. For example, “Discounted fare” was included in that category.

Fare Media Among Bus and Rail Riders

While three-fourths of bus riders (75%), use a pass to pay their fare, many more rail riders (93%) use a pass of some type. Conversely, more bus riders (21%) than rail riders (4%) use cash.

Number of Reports: 130
Riders Surveyed: 482,275
Average Riders Surveyed per Study: 3,709
Annual ridership: 5,916,500,367

Urban Population and Differences in Use of Fare Media

In urban areas of less than two hundred thousand, only 38% use a pass and 38% use cash, but in the mid-size cities, the ratio is 56% to 32% and in the largest cities is 87% to 10%. Given the fact that rail passengers are more likely than bus passengers to use pass media to pay their fares, and the fact that the larger cities are more likely to have rail service of various kinds, it is not surprising to find a strong positive relationship between the use of pass media and urban size.

Figure 59

Fare Medium - All Transit Users

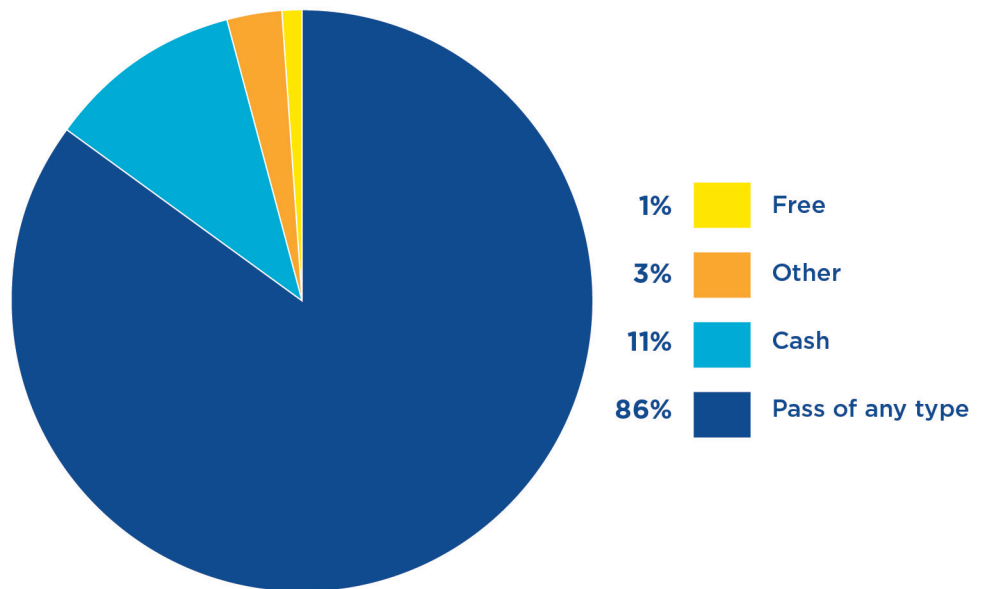


Figure 60

Fare Medium - Transit Mode

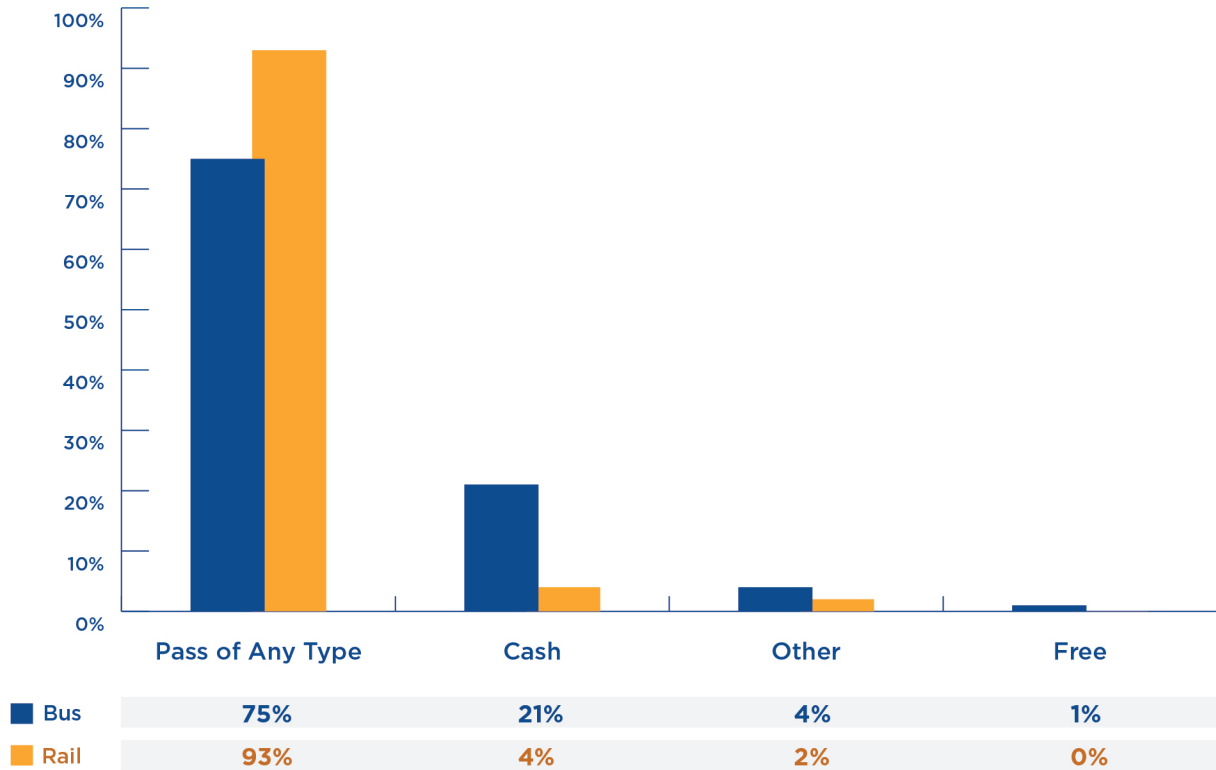
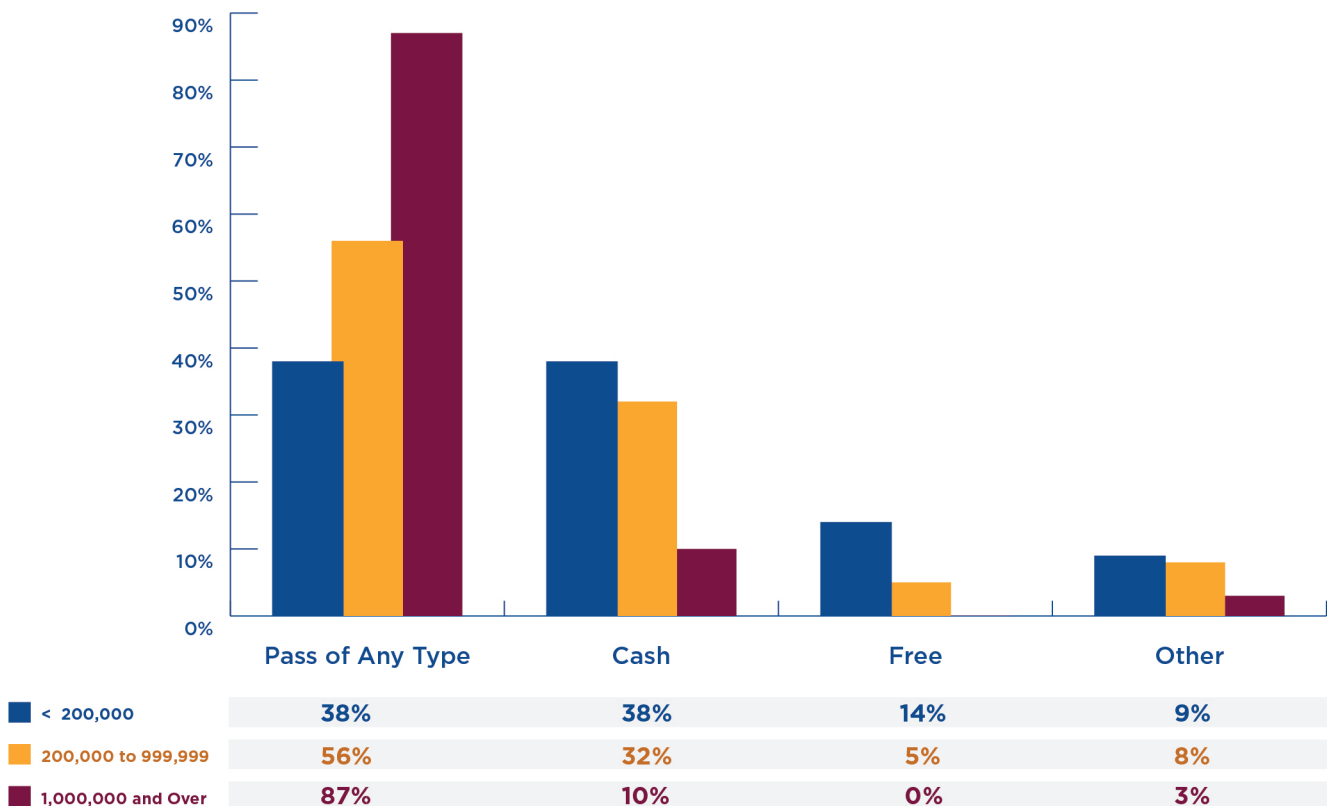


Figure 61

Fare Medium - Urban Population



Transfers

Annually, half of the trips made require a transfer during those trips, and half do not. Transfers are widely used to increase the geographic coverage of public transportation. In general, the question about transferring was asked with regard to the rider's "usual trip," or "...trip made most frequently" or the trip that the rider was making when surveyed.

Transfer Rate Differences Between Bus and Rail Riders

The tendency to make a transfer varies in only minor ways between bus and rail modes. Rail riders are slightly less likely to say they transfer, but the difference is minor, 48% for rail riders and 51% for bus riders.

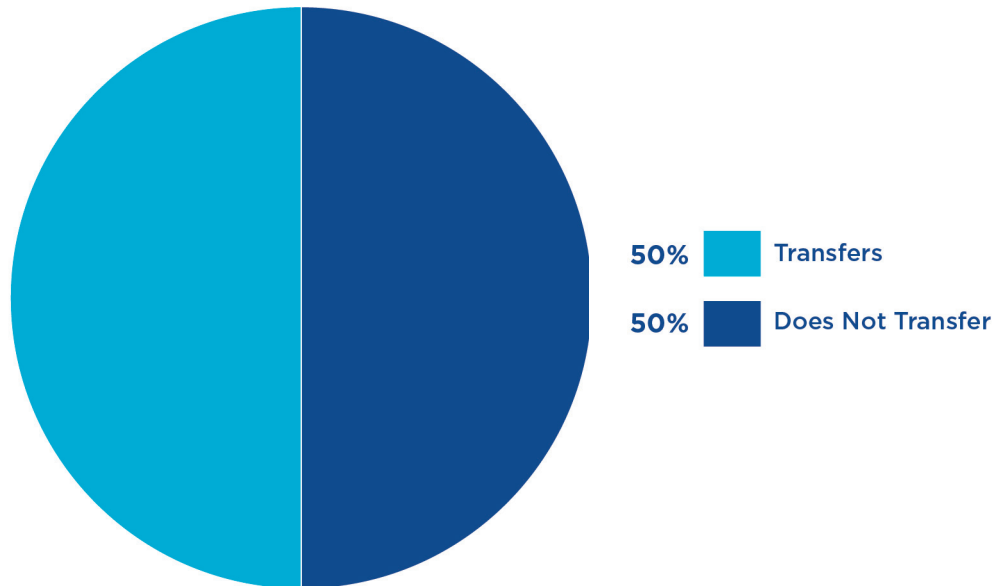
Number of Reports: 109
Riders Surveyed: 364,307
Average Riders Surveyed per Study: 3,342
Annual ridership:
2,300,101,652

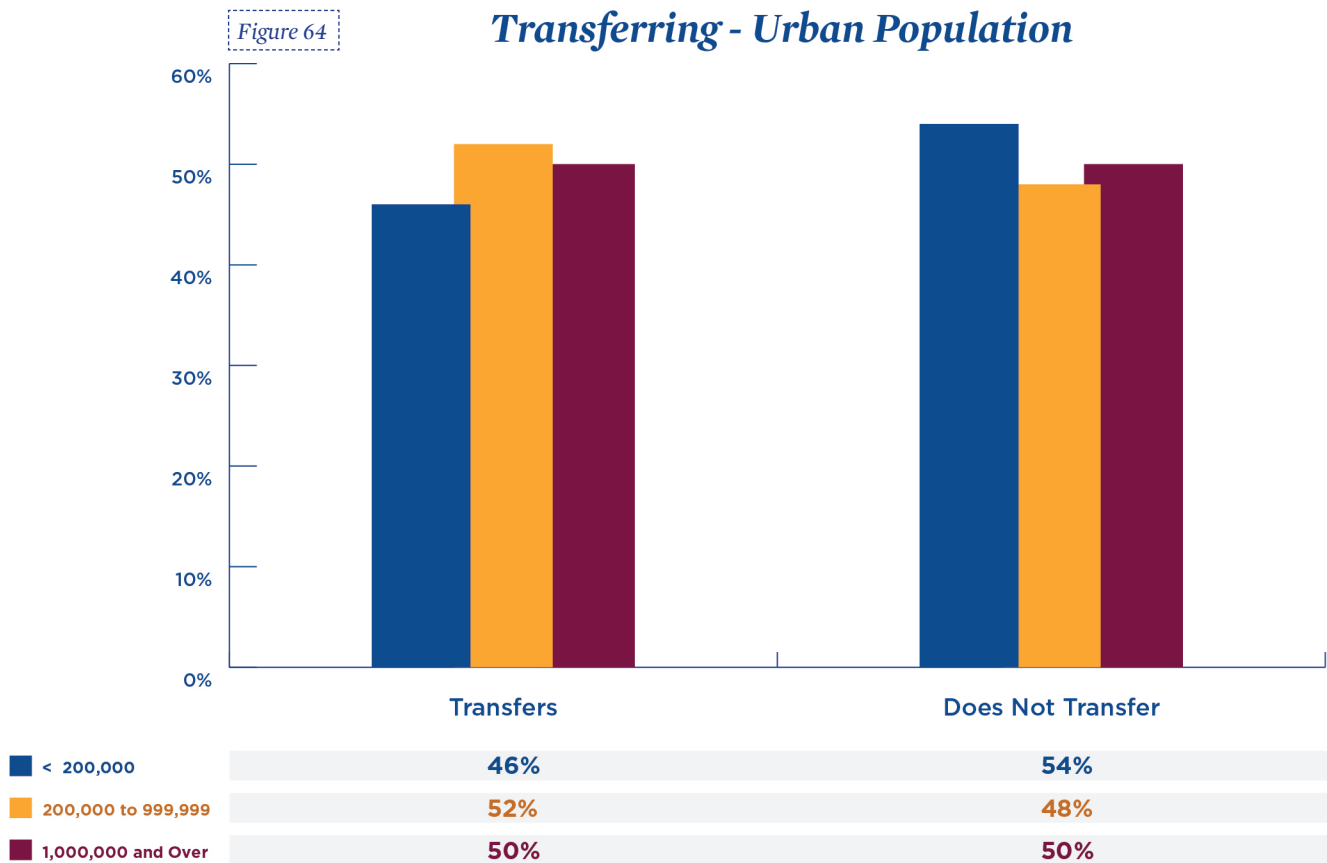
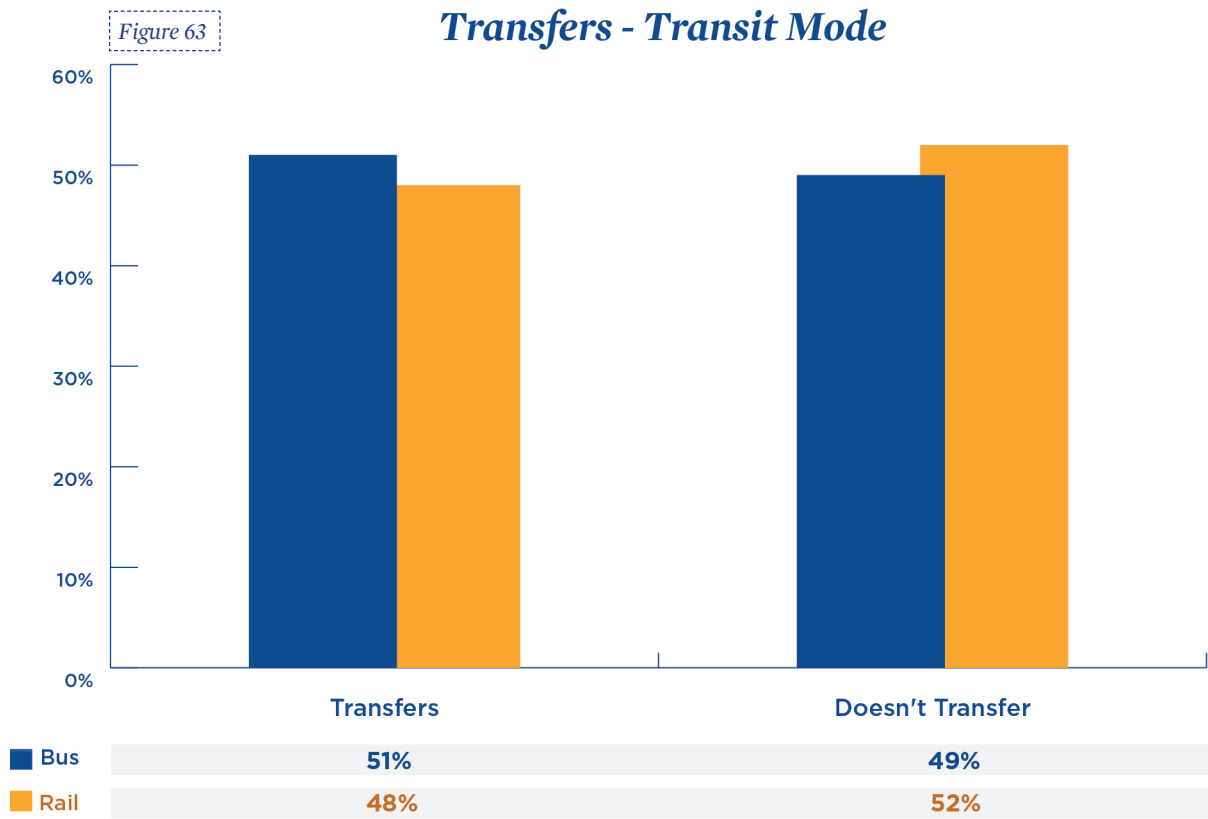
Transfer Rate Differences Among Urban Areas of Different Sizes

Transfer tendencies vary somewhat between the smaller and the larger cities. In the smaller cities, 46% say they transfer. However, in the mid-size and large cities, the transfer rate is somewhat higher, 52% in the mid-size, and 50% in the largest cities. Presumably this is because their systems would tend to be more complex and require multiple routes to cover a single one-way trip.

Figure 62

Transfers - All Transit Users





Duration of Using Transit

Number of Reports: 80
 Riders Surveyed: 344,828
 Average Riders Surveyed per Study: 4,310
 Annual ridership:
 2,403,631,615

Most riders (a total of 53%) are long-term riders in that they have used transit for five or more years. This includes 29% who have used transit for five or six years and 24% who have used it for seven or more years.

A substantial proportion of transit ridership turns over in roughly a two-year period. Of all riders, 15% say they have been using transit for less than one year, and another 14% for one to two years, for a total of 29% new riders in the space of only two years. Another 18% have used transit for three to

four years. Since ridership nationally in the 2008 – 2015 period increased, but not at this pace, it is evident that new riders are being attracted, but most are not being retained. This suggests that while using transit is, for many people, a long term practice, for many others, it is a shorter-term practice probably related to student years or first jobs.

Duration of Using Transit Among Bus and Rail Riders

Rail riders are more likely (31%) than bus riders (20%) to be long-term riders who have

used transit for seven years or more. Bus riders, conversely, are more likely to have used transit for fewer than five years.

Duration of Using Transit – Differences Among Urban Areas of Varied Size

Transit users in the largest cities are much more likely than those in mid-size and smaller cities to have used public transportation for five or more years. In the largest cities, this percentage is 55%, while in mid-size cities, it is 26% and in small cities it is only 19%.

Figure 65

Duration Using Transit - All Transit Users

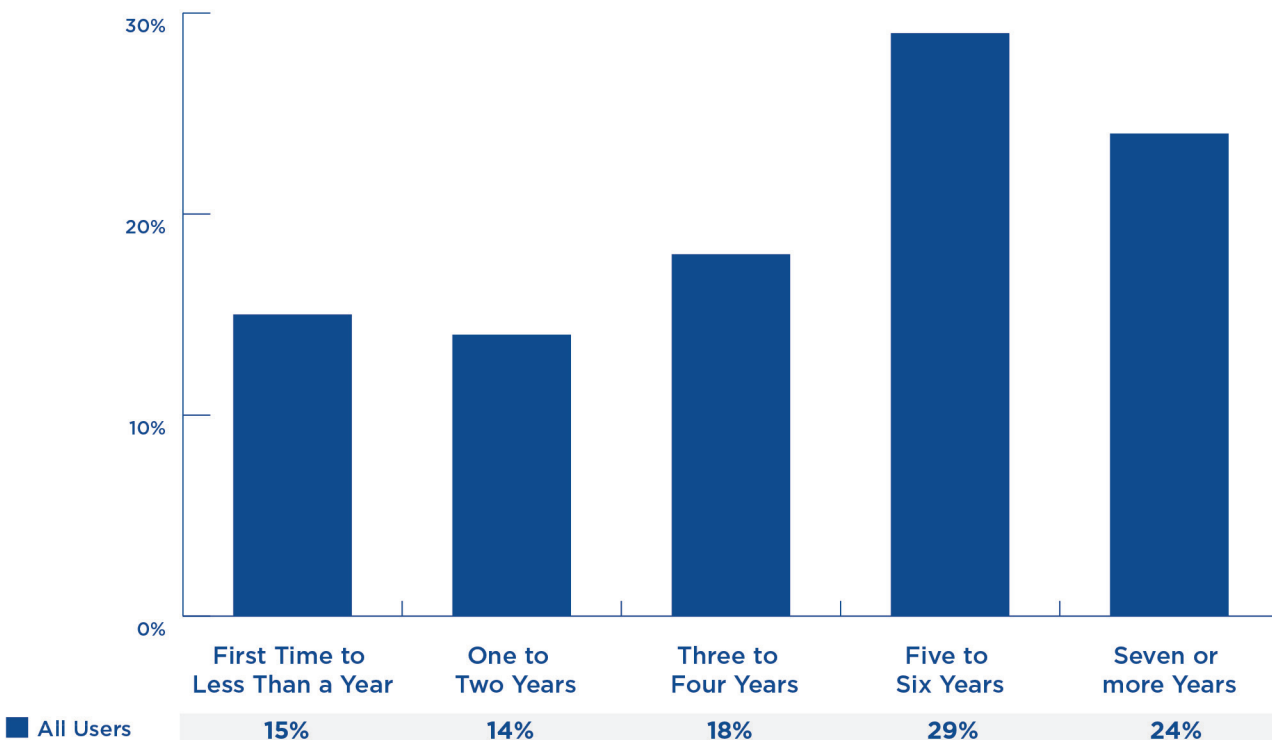


Figure 66

Duration Using Transit - Transit Mode

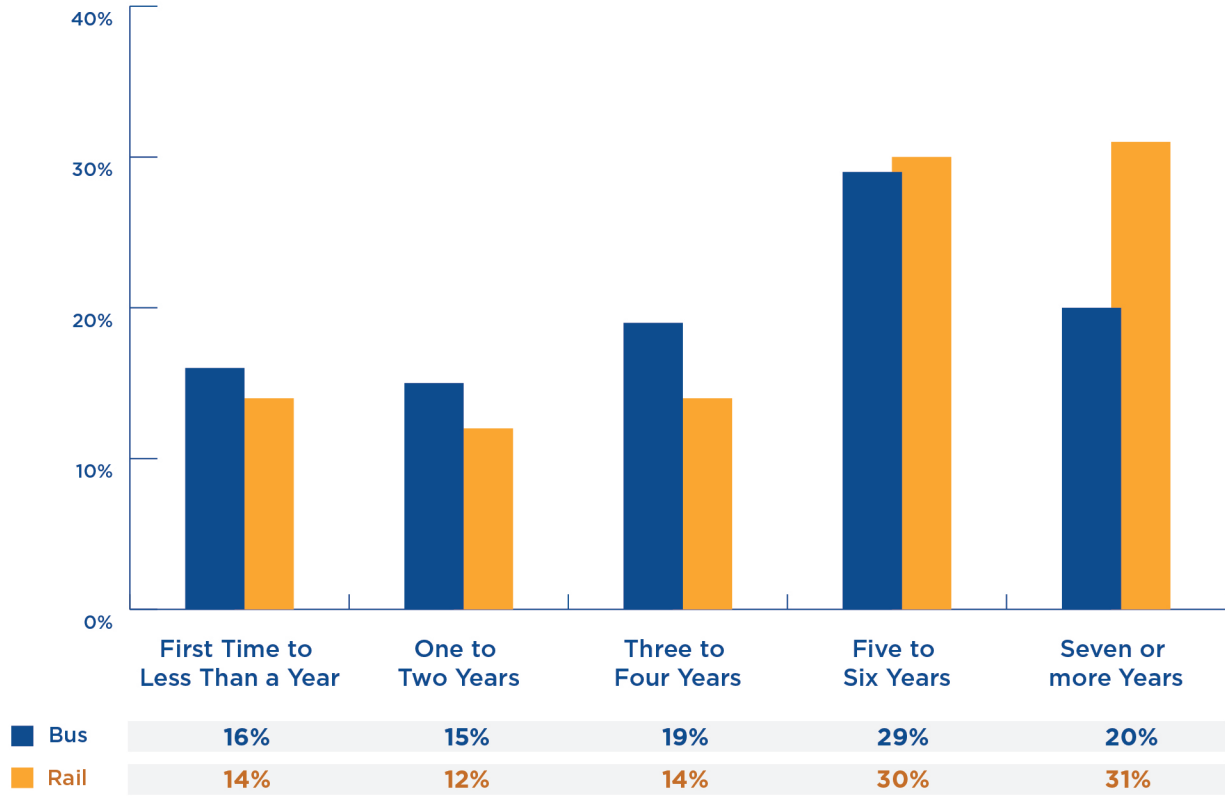
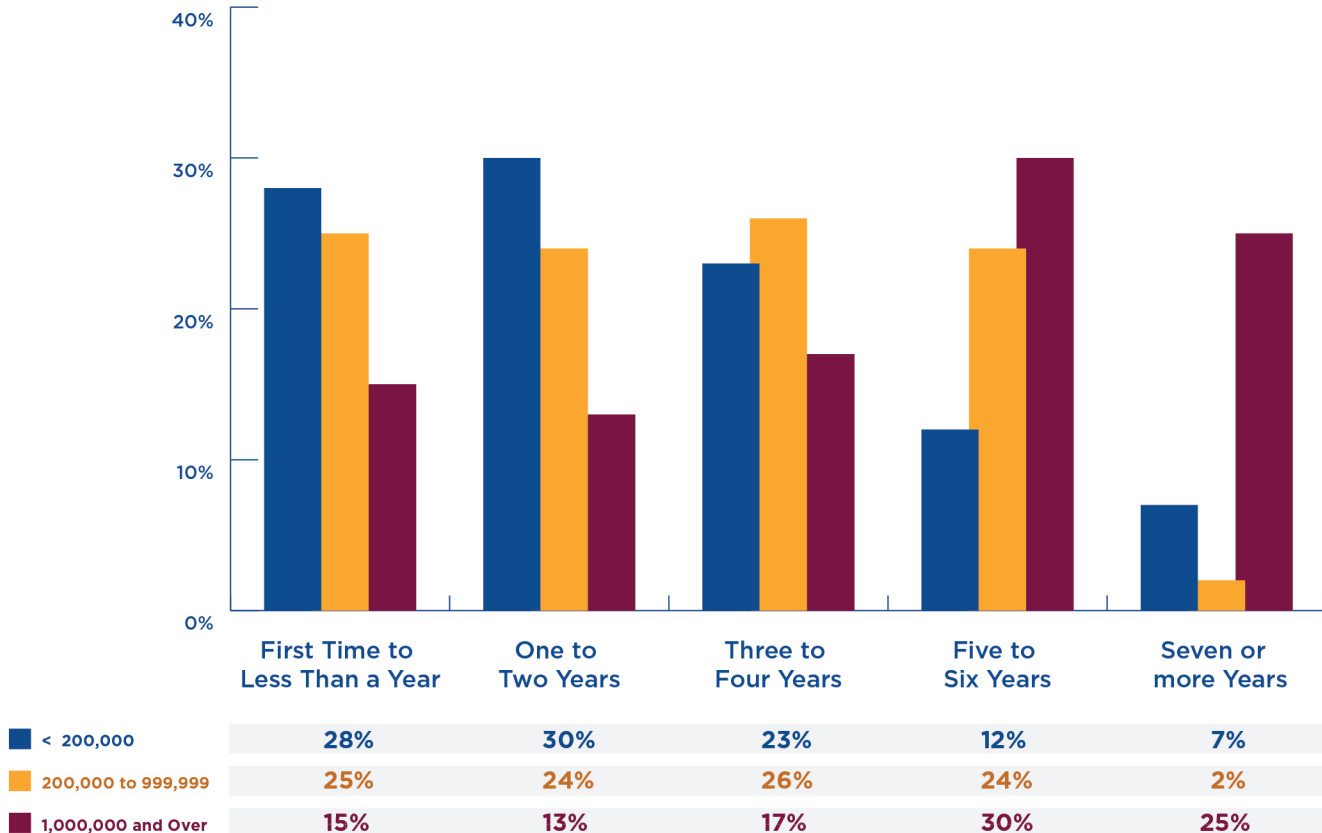


Figure 67

Duration Using Transit - Urban Population



Methodology

DATA SOURCE

The data included in this report is drawn from 211 written reports provided to APTA for this study by transit agencies or regional planning organizations on whose behalf they were completed. The data were collected primarily by APTA. Letters were sent to virtually all transit systems in the United States requesting copies of the most recent passenger survey reports. In addition, APTA staff located various reports on transit agency websites.

It is important to understand that the charts in this report were created by aggregating findings presented in charts and tables in the written reports. They were not based on an analysis of raw survey data. The results were aggregated using a combination of the Microsoft Office programs Excel and Access 2016. Using a database approach to aggregation of the results makes it possible to write efficient queries to parse the data as needed. The database would make it possible to update the results with much less effort in the future if APTA determined that updates were desirable.

SYSTEM TYPES

This report, like the earlier APTA Passenger Characteristics report published in 2007, categorizes the results by mode, referring to them in this study as “Rail” and “Bus.” The “Bus” category includes any rubber wheeled vehicle whether standard city motor bus, commuter bus, Bus Rapid Transit (BRT) or trolley bus. The latter two modes are in many ways closer to a fixed guideway such as light rail, so that the categorization is somewhat arbitrary. But this is consistent with the 2007 approach. And it is reasonable in that much of what is called “BRT service” in practice has only some aspects of BRT (e.g., off-board ticketing and more pleasant shelters) and does not run on a separate fixed guideway free from normal traffic. In addition, trolley buses, although tied to an overhead power source, have additional flexibility somewhat more like a motorbus than a light rail vehicle.

The “Rail” category includes any steel wheeled vehicle operating on tracks whether a commuter train, subway or “EI” train, light rail, or streetcar. It may seem odd, but this

“Rail” category also includes a small number of reports on ferry boat passengers. Again this categorization is somewhat arbitrary, but it is consistent with the 2007 approach, and surveys of ferry passengers are too few in number to be treated as a separate category. Although worth including, the relatively small number of studies and respondents means that they have very small impact on the total percentages. But why “rail” and not “bus?” Because a ferry operates on a fixed route and not in street traffic, more like a separated guideway rail vehicle than like a motor bus.



Table 8 - Transit Mode, Number of Reports, Ridership, and Questionnaires Included

<i>Mode</i>	<i>Number of Surveys by System and Mode</i>	<i>Unlinked Passenger Trips on Reporting System-Modes</i>	<i>Number of Questionnaires Completed</i>
<i>Commuter Railroad</i>	16	279,695,442	46,512
<i>Heavy Rail</i>	12	3,633,230,651	68,533
<i>Light Rail</i>	17	344,834,095	58,080
<i>Combined rail modes</i>	3	196,810,063	8,960
<i>Ferry</i>	3	5,780,862	6,970
<i>Rail Modes Subtotal</i>	50	4,460,351,113	189,055
<i>Commuter Bus</i>	1	4,200,634	131
<i>Motor Bus</i>	160	3,871,058,843	506,562
<i>Roadway Modes Subtotal</i>	162	3,875,259,477	506,693
Total	211	8,335,610,590	695,748

PROFILE OF THE DATA

Ridership During the Period Included in the Report

The surveys were conducted during the eight-year period 2008-2015. This was an economically tumultuous period that began with the Great Recession and encompassed a gradual recovery. The data begins in 2008 as transit ridership nationally hit a new peak (see Figure 68). However, 2008 was also the beginning of the economic crash and a corresponding decline in ridership. During the period included in the study, however, ridership had recovered to pre-recession highs by 2015.

The survey data includes a total of 211 reports on systems that carried a total of more than eight billion unlinked passenger trips. Almost 700,000 individual questionnaires were completed.

Handling Variation in Response Categories

Among the challenges of using non-standard written reports as a data source is that the questions and the response categories used in the various surveys are not consistent. For example, some surveys ask for a rider's age as a raw number. Others ask where the rider falls within certain age ranges. However, the age ranges frequently are in differing sets. For example, in one study a set of age ranges used as a response category in a given survey may be structured like this: (1) Less than 20, (2) 20 to 29, (3) 30 to 39 (etc.). In another survey the categories might be structured differently, as for example: (1) 15 to 24, (2) 25 to 35, (3) 36 to 45 (etc.). These differences have to be reconciled without access to the raw data for reanalysis.

The same thing is true of income ranges in the response categories, which differ among surveys in ways similar to the overlapping response categories used for age.

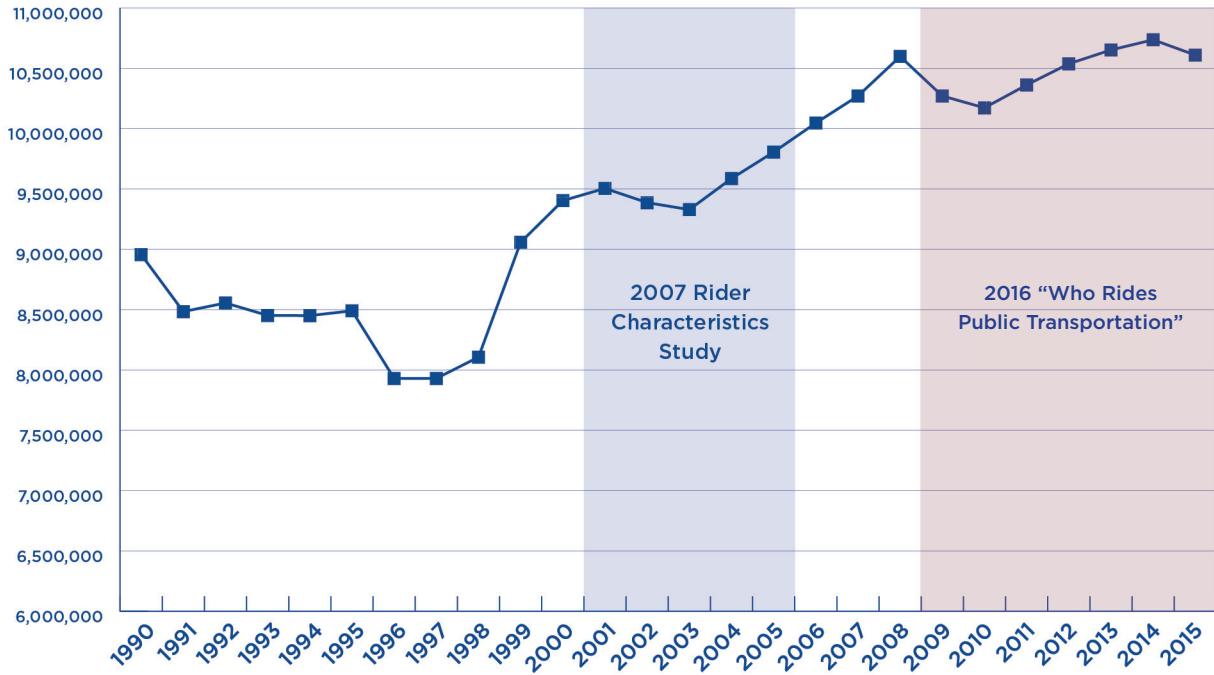
These kinds of differences are handled by entering the ranges given and converting the results into a progression from one range to another. Thus, for example, a range of fifteen to twenty-four would be converted to individual years using the assumption that the individual years of age were equally distributed through the ten-year range. This means that if, for example, 20% of the riders in a survey fell within that ten-year age span, they would be recorded as 2% age 15, 2% age 16, 2% age 17, and so forth. This enables us to combine disparate ways of recording riders' ages.

The same approach was taken with income to deal with the varied categories. In addition, income was inflation-adjusted to 2015 values using the Consumer Price Index.

Total Public Transit Ridership in the United States (000s)

Figure 68

(Source: APTA, Ridership by Mode and Quarter, 1990 to present)



The Results Represent Unlinked Rider-trips, Not Individuals

Ridership is a figure that refers to the number of unlinked passenger trips made in a given transit system. It does not refer to the number of individual persons in the population who use public transportation. An unlinked trip is a transit trip that does not involve a change of vehicle. The APTA glossary of transit terms describes it this way:

“Unlinked Passenger Trips represent the number of times passengers board public transportation vehicles. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination and regardless of whether they pay a fare, use a pass or transfer, ride for free, or pay in some other way. Also called boardings.”

To take an example, in this report, Figure 26 (page 42), reports that 55% of transit riders are female. However, this means that 55% of unlinked transit trips are taken by women, not that 55% of individual persons who ride transit are women. Regular transit users who make 10 trips times a week have 10 times as great a chance of having their characteristics surveyed as occasional users who ride half that often. Onboard surveys reflect that disproportion.

To take a simple, completely hypothetical example: If a transit system had 100 riders, 50 women and 50 men, the individual riders as a group would obviously be 50% female and 50% male. But if the women all used transit for ten trips a week and the men used it for only five trips a week, the surveys would capture responses from the women at that ratio of 2:1 because the surveyors would encounter women riders at twice the rate as

they encountered men. The ratio of trips would be 10 female to 5 male, or 67% female and 33% male. We would correctly conclude that the ridership was 67% female. Think of it this way: the figures in this report describe the characteristics of the people you would typically encounter on a bus or rail vehicle.

Weighting

The data are also expanded and weighted according to the number of trips carried by the systems under study during the year of the survey as reported in the Federal Transit Administration’s (FTA) National Transit Database (NTD). This weighting corrects for size differentials among the systems. If that were not done, the results would assume equality of size among the transit systems included in the report.

If the data were not weighted, the rider characteristics measured by a survey of riders in a small city

Table 9 - Years the Surveys Included in the Report Were Conducted

When was Survey Conducted?	Number of Surveys	Unlinked Passenger Trips	Number of Questionnaires Completed
2008-2009	35	4,192,650,564	129,606
2010-2011	40	359,645,006	81,882
2012-2013	62	1,462,185,997	227,605
2014-2015	74	2,435,020,463	256,655
Totals	211	8,449,502,030	695,748

system that carries five-hundred thousand trips per year would have the same “weight” in this report as a survey of riders on a system that carries thirty million trips per year, an obvious distortion of reality. Weighting in this manner, then, is essential to creating a realistic picture of the total ridership in the United States.

Not All Questions Were Asked in Every Survey

All of the surveys included in this study were local, and served unique local purposes. There is no existing national standard set of questions or standard response categories. Depending on the priorities for a given study, certain questions were asked and others were not. Some studies were conducted for specific planning purposes, others for marketing, others for a combination of the two, and some just to track changes in customer satisfaction. Some were intended for one or

more of these purposes and for Title VI compliance. Thus there is considerable variation in what is included in a given survey. Thus the total sample size (i.e. the number of studies and thus the number of respondents included) varies among the characteristics included in this report. For this reason as each variable is discussed and charted in this report, the number of studies on which it is based is noted along with the ridership associated with the systems included in those studies and the average and total number of respondents in the surveys.

Data Collection

All but one of the surveys included in this report were conducted by an onboard methodology. Most of the onboard surveys were self-administered surveys using paper questionnaires although one major onboard survey in a large urban area was conducted by interviewers using

tablet computers. One major survey, however, was a household survey conducted by telephone. It is the survey of a major northeastern metropolitan transit system too significant to omit from the study without serious distortion of the results. That system is sufficiently complex that it was considered more feasible to conduct a telephone survey and carefully weight the data to represent the ridership according to frequency of use. The survey was conducted in an extremely rigorous manner, appropriately weighted, and can be considered representative of the ridership.

End Notes

ⁱUnlinked Transit Passenger Trip is a trip on one transit vehicle regardless of the type of fare paid or transfer presented. A person riding only one vehicle from origin to destination takes ONE unlinked passenger trip; a person who transfers to a second vehicle takes TWO unlinked passenger trips; a person who transfers to a third vehicle takes THREE unlinked passenger trips. APTA estimates that the number of people riding transit on an average weekday is 45% of the number of unlinked transit passenger trips.

ⁱⁱOnboard passenger surveys differ substantially in terms of the lower age limit included in the data. Because respondents are expected to be able to provide answers to questions such as household income, and because survey staff persons are adults, it is considered by many researchers that to survey anyone below a certain age, generally between 13 and 18, is to risk both response validity and the appropriateness of the adult/child interview situation.

Appropriateness of the surveyor/respondent relationship is especially important when origin-destination questions are asked. The percent of riders in the youngest category provided in the results of most studies is quite small. However, the actual percentage of riders who fall into a hypothetical “youngest rider” category is not known for several reasons. First, most reports do not clearly state the lower age limit or the percent of children that were riding but were younger than the minimum age acceptable in the survey. Second, many systems do not include “school trippers” in the survey samples, thus systematically undercounting younger riders using transit for school trips. (A “school tripper” is a transit trip timed to the start or end of a school day.) Third, most computations of age characteristics are based on actual

survey responses, not including counts of those who are on board but too young to survey. Unless separate logs are maintained that report the number of children who are riding but are not surveyed because of age, there is no way to accurately assess the actual proportion of young riders. In any event it is clear that the proportion of riders in the youngest category is not only understated but also indeterminate.

From log forms maintained in some studies, however, it is clear that the underestimate has little impact on the overall age distribution. When the rate of those not surveyed due to an age constraint is reported, it is most often 4%. This, of course, excludes school trippers that might increase that slightly. The reader should treat the youngest percent in this report as potentially understated by a small percentage that would not seriously affect the overall age distribution of the more adult riders.

ⁱⁱⁱ In terms of the ethnicity of transit users, it should be noted that no reports were received for this project from the states of Hawaii or Alaska. Inclusion of such reports would not have fundamentally altered the rank order of percentages shown, but they would have increased the percentages of Pacific Islanders and Native American/ Native Alaskan rider populations slightly.

^{iv} It has become standard practice for survey best-practices including the Census, to treat all racial and ethnic groups as non-exclusive. Exclusive racial categories make no sense. This is especially true in the case a cultural difference that is often treated as a racial difference, specifically Latino/Hispanic identity. However, most (not all) passenger survey reports have continued to conflate race and ethnicity, and have continued to treat racial categories as mutually exclusive. Consequently, for reporting here, there is, unfortunately, no alternative but to treat them in the manner shown in the tables.

^v Measures of educational attainment of the general public are challenging to interpret because the categories differ among surveys, and because the dividing lines between “some college” and completed degree are unclear in some studies. Results are available in surveys such as the American Community Survey (ACS) of the Bureau of the Census or the General Social Survey (GSS) of the National Opinion Research Center. The ACS is accessible here: http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_14_5YR_S1501&src=pt

Raw data from the GSS are available here: <http://gss.norc.org/Get-The-Data>

^{vi} See Michael Sivak and Brandon Schoettle, “Recent Decreases in the Proportion of Persons with a Driver’s License across All Age Groups,” January 16. Abstract available at: http://www.umich.edu/~umtriswt/PDF/UMTRI-2016-4_Abstract_English.pdf. All age groups declined in the tendency to have a license, but younger people declined more than older people. From the abstract: “This study examined changes in the

United States from 1983 to 2014 in the percentage of persons with a driver’s license as a function of age. Also included are the data for 2008 and 2011. The data came from the Federal Highway Administration. The following are the three main findings: For 16- through 44-year-olds, there was a continuous decrease in the percentage of persons with a driver’s license for the years examined. For example, the percentages for 20- to 24-year-olds in 1983, 2008, 2011, and 2014 were 91.8%, 82.0%, 79.7%, and 76.7%, respectively. For 45 through 69-year-olds, there was an increase in the percentage of persons with a driver’s license from 1983 to 2008, followed by a continuous decrease from 2008 to 2014. For example, the percentages for 60 to 64-year-olds in 1983, 2008, 2011, and 2014 were 83.8%, 95.9%, 92.7%, and 92.1%, respectively. For those 70 years and older, there was an increase in the percentage of persons with a driver’s license from 1983 to 2008, followed by an increase from 2008 to 2011, and a decrease from 2011 to 2014. The percentages for 1983, 2008, 2011, and 2014 were 55.0%, 78.4%, 79.2%, and 79.0%, respectively.”

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