Mobility Lab™

ARLINGTON TRANSIT (ART) SATISFACTION STUDY

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Prepared for Arlington County, Virginia

DRPT

wba RESEARCH

ARLINGTON VIRGINIA

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EXECUTIVE SUMMARY

This report explores the motivation and impediments for Arlington residents, workers and visitors in using the Arlington Transit (ART) bus system. It is the result of the collaboration between the Mobility Lab Research Team, operated by DS&MG and a division of the Arlington County Commuter Services Bureau (ACCS), and the Arlington County Transit Bureau within the County's Department of Environmental Services.

As described in the background section of this report, transit ridership in Arlington has experienced dynamic trends over the past two decades: after a consistent increase in ridership between the 1990s and 2013, ridership has stagnated and decreased since. This trend mirrors a nationwide trend of decreasing transit and bus ridership since 2013. While many cities are aware of and alarmed by the decrease in ridership, there has been limited research by cities and transit agencies looking into the reasons behind the decrease in ridership and identifying ways to gain ridership back. ART conducted a ridership survey in 2013 to conclude that "ART is truly an Arlington County service, providing transit for residents and workers with a high turnover, gaining one-third new riders and half of riders transferring to and from metro". There were positive takeaways, as the survey showed that satisfaction with ART was high and that ART eliminated single occupancy vehicle (SOV) travel. However, the mobility landscape in 2018-2019 has drastically changed since 2013, given the surge in prominence of ride-sharing services such as Uber and Lyft, and changes in commute patterns driven by the increase in telecommuting. This shifting mobility and travel landscape warrants a return to the examination of the determinants of ridership for ART in order to identify the underlying dynamics behind changes in ridership patterns, and pinpoint ways to attract riders again.

This provided the impetus for the work in this study.

This research effort aims to answer the following questions:

(1) Why do current ART riders choose ART? How satisfied are ART riders with the current service? Why don't they ride more often? And what would it take to encourage them to ride more often?
(2) Why did previous ART riders stop riding? And what would it take to encourage them to ride again?
(3) How can ART attract new riders? Build confidence in the system? And build and reward loyalty among current and new riders?
(4) How does all of this differ across segments of the population? (For example, are we losing the battle with the younger generation? Are we catering for minorities?)

To answer these research questions, a mixed method approach was used, leveraging both qualitative and quantitative findings. Qualitative and quantitative inputs were solicited from four focus groups that were held between November 28 and 29, 2018, 1,000 intercept/on-board ART surveys were held between January 23, 2019 and February 11, 2019 and 399 online panel surveys were collected from respondents between March 6, 2019 and March 28, 2019. All respondents were traveling to, from or within Arlington (i.e. either living, working or visiting

Arlington – although the online survey was limited to residents and locally employed non-residents). Mobility Lab designed the survey and Mobility Lab's research subcontractor, WBA Research, reviewed survey materials, collected the data, and analyzed the results. This was done under the supervision of Mobility Lab and using input from Arlington County's Transit Bureau. All survey materials were approved by Arlington County's Transit Bureau.

The main results indicate that ART is often used by riders for work or school trips regardless of their access to a car but does not seem to be the top choice for choice rider's leisure or personal trips. People mostly use ART because it is cheaper than other services. Those who ride it frequently have experienced limited incidents, are satisfied and have a positive image of ART. The strongest disadvantage of ART compared to other public transportation options, according to the focus groups results, is route coverage. In the focus group research, participants discussed how more routes would be helpful, especially when moving beyond the main corridors of Arlington or out towards Reagan National Airport. While in reality, ART should have a better coverage than other buses (WMATA), respondents might be referring to service coverage outside of Arlington. The nature of the data collection and the questions in the online and on-board surveys (e.g. "more service areas" as an option to what would make them rider more often) does not allow us to make any conclusions regarding that aspect. This is left for future research.

Many factors were found to influence transportation choices and thus a decrease in bus ridership including life changes (e.g., job/school/residential location change, schedule changes, having children, separation or divorce), age and level of income. Findings from this report cannot provide clear evidence that ride-hailing is replacing ART bus rides, but respondents who report increasing ride-hailing usage also report taking less trips on other transportation modes.

Therefore, the research team has outlined four main suggestions to increase ridership:

Suggestion 1: Continue to study current and potential customers to understand how to better tailor services to their transportation needs and target investments in service and marketing. In particular, the results of this work reveal that the County should possibly be cognizant of its tech-savvy travelers, Spanish-speaking travelers, choice riders and people experiencing changes in their lifestyle.

Suggestion 2: Invest in in improving the bus service by prioritizing: (1) on-time arrivals, (2) expanding route coverage, (3) frequency and (4) providing amenities such as bus shelters. These were the dimensions that stood out as important factors in the riders' perceptions of transportation options and mode choice.

Suggestion 3: Invest in ART marketing to: (1) make it more inclusive, (2) increase awareness and understanding of the service, (3) target specific segments such as seniors, and (4) promote cost savings of shifting to public transit and a hassle-free commute experience. According to the results of this study, such an investment could increase ridership by either making it more competitive to other modes or maximize participation of subgroups in the population such as seniors and the Spanish-speaking population.

Suggestion 4: Celebrate ART's well-perceived image and high satisfaction, but explore innovative ways to stay competitive. Examples include: (1) new alternative modes of payment, (2) include drivers in the effort to promote the user experience, and (3) appoint ambassadors to promote the ART service and build rewards programs.

This study and the recommendations derived from it provide an important roadmap for transit agencies more generally and Arlington Transit more particularly in their strategic planning for the ART Bus system. Continued research on the wants and needs of Arlington travelers in general, the motivations and barriers to using ART in particular is an important step towards making transit more attractive in Arlington and boosting ridership.

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1 INTRODUCTION

In the era of fast-expanding mobility options and against the backdrop of changing demographics, preferences and travel behavior, transit agencies across the United States face the challenge of keeping the bus system competitive and attractive to travelers. While system performance (such as frequency and coverage) remain key, the changing demographic landscape, the evolving nature of the commute (e.g. the prevalence of telecommuting) and the convenience of new mobility options (e.g. on-demand mobility such as Uber) all have a role to play. For researchers and policymakers, this adds to the complexity of untangling what really is driving decreases in transit ridership across the United States and other parts of the world. Still, limited work has been done on trying to identify and assess the determinants of bus ridership, given the changing landscape for transit agencies more generally and Arlington County more particularly.

STUDY PURPOSE AND OBJECTIVES

To tackle this limitation, the Mobility Lab research team, operated by DS&MG (a division of the Arlington County Commuter Services Bureau), collaborated with the Arlington County Transit Bureau in 2018-2019 to conduct an Arlington Transit (ART) Satisfaction Study in Arlington County, Virginia.

In this research study, the research team focused on the ART bus system, with the aim to understand the motivation and barriers for using ART and the reasons behind decrease in ridership, to pinpoint ways in which to make the system more attractive to travelers and increase ridership. To do so, the research team set out to answer the following questions:

(1) Why do current ART riders choose ART? How satisfied are ART riders with the current service? Why don't they ride more often? And what would it take to encourage them to ride more often?
(2) Why did previous ART riders stop riding? And what would it take to encourage them to ride again?
(3) How can ART attract new riders? Build confidence in the system? And build and reward loyalty among current and new riders?
(4) How does all of this differ across segments of the population? (For example, are we losing the battle with the younger generation? Are we catering for minorities?)

RESEARCH APPROACH AND METHODOLOGY

To answer these questions, the research team used a mixed approach of qualitative and quantitative research methods. The research approach and methodology are outlined in four steps, as illustrated in Figure 1 below.

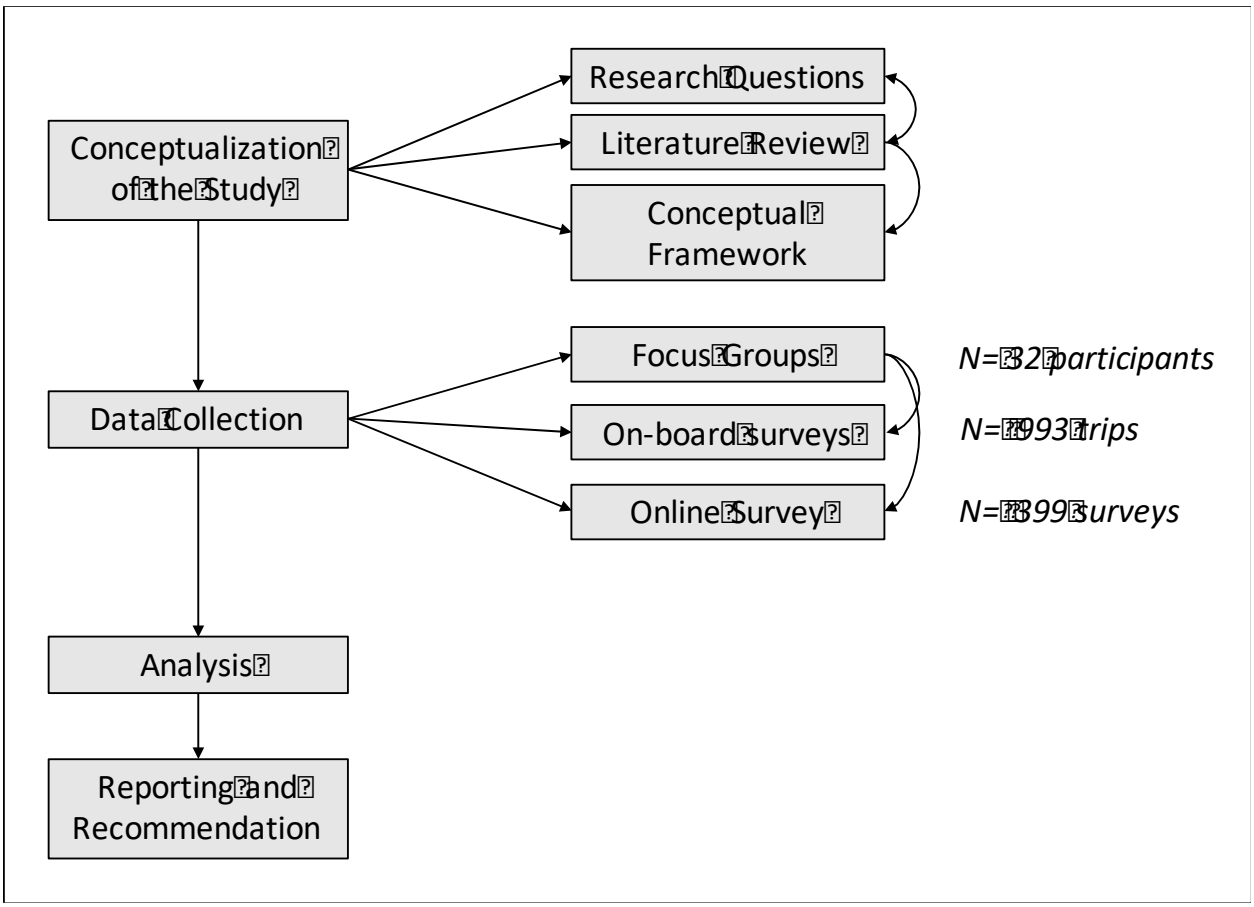


Figure 1: Schematization of the Research Process

First, the main research questions were formulated based on the objectives of the study as described by the Arlington County Transit Bureau and refined through a review of the academic literature on bus ridership. The literature also helped in developing the main conceptual framework of the study that guided the data collection, analysis and reporting.

The research team then proceeded to design three sets of data collection tools.

1) A **focus group questionnaire** was designed as an open-ended discussion aiming at understanding Arlington travelers' opinions and perceptions of ART without any pre-conceived biases imposed by the researchers. The focus groups targeted three main population clusters: *Arlington Mill*, *Buckingham* and *Shirlington* residents. The first two neighborhoods have historically generated strong ART ridership (Arlington Mill neighborhood residents anchor ART 41 and ART 45). The facilitator would propose open-ended broad questions that initiate unguided discussions between the participants. Some focus groups were also held

with bus drivers to get their input on the changes the bus system has seen and their discussions with travelers. ART drivers have the advantage of a long-standing relationship with ART riders with insights into both bus operations and user experience. They also have a wide knowledge of the system and routes. The results of the focus groups were used to design the on-board and online surveys.

2) **On-board survey:** The advantage of using an on-board survey is to reach ART riders and understand what is working for them and what is not. It is also an opportunity to ask about their immediate experience with the service. Arlington County was primarily interested in learning about riders across nine ART routes: 41, 42, 43, 52, 55, 75, 77, 84, and 87.
3) **Online survey:** The online survey was meant to gather opinions of riders and non-riders and permit the comparison of the two on the same variables. WBA research collected the data and analyzed the results with input from Mobility Lab's research team.

The remainder of this report describes the data and results of these research efforts. Chapter 2 reviews the literature and presents the developed conceptual framework. Chapter 3 presents the main results and chapter 4 summarizes the findings and presents the main suggestion for using the results of this study.

2 LITERATURE REVIEW

Guided by the research questions, we reviewed the literature to further fine-tune the research questions and determine research directions. Below, we start by reviewing Arlington transit ridership trends and then describe the main determinants of bus ridership found in the literature.

ARLINGTON TRANSIT RIDERSHIP TRENDS

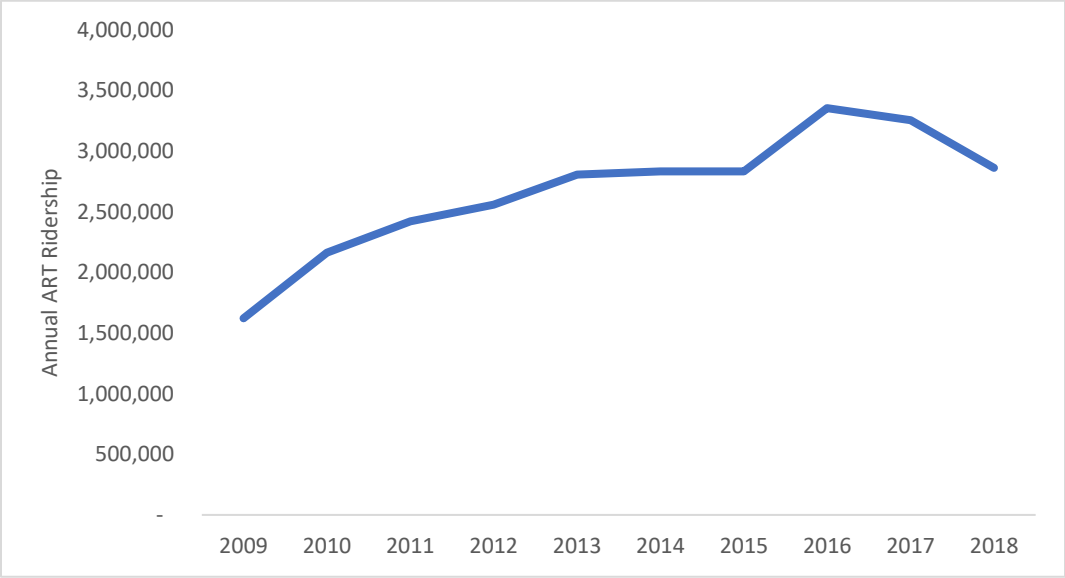
Over the past few decades, **transit in Arlington** experienced dynamic trends in ridership. From the 1990s to 2013, ridership grew steadily as the county's residential and working population expanded (Arlington County, 2016). Since 2013, however, total transit ridership has stagnated or decreased in Arlington, as has been the case across the country (Arlington Department of Environmental Services, 2017; Department of Community Planning, Housing and Development, 2018; Higashide & Buchanan, 2019).

From 1996 to 2013, overall transit ridership in Arlington increased by 34.5%, as the various transit systems that service the county saw service improvements and route expansions (Arlington County, 2016). Following ART's inception in 1998, it experienced rapid growth; for example, ART grew from an annual ridership of roughly 700,000 in FY 2005 to roughly 2.6 million in FY 2013 (an increase of 292%) (Arlington Department of Environmental Services, 2015).

In more recent years, however, **the region** of Northern Virginia has seen declining ridership. An analysis of Northern Virginia Transportation Commission (NVTC)'s quarterly ridership reports shows that total transit ridership across the nine systems that serve Northern Virginia has been in decline since late 2016, with an overall ridership loss of 7% from 2016 to 2018 (NVTC, 2018) Data from the National Transit Database (graph below) shows that ART's annual ridership rose sharply from 2015 to 2016 when it peaked and has since been in decline (TransitCenter, 2019).

Also, during this time period, WMATA's SafeTrack program brought much-needed repairs to Metrorail but caused major service interruptions in 2016 (DeMeester, 2016). This change to rail service may be partially responsible for the substantial decline in overall transit ridership as well as the substantial ART ridership increase from 2015 to 2016, as typical rail users had to change their commutes during the SafeTrack repairs (InsideNova, 2017; TransitCenter, 2019). The subsequent downturn in ART ridership may, too, be partially caused by Metrorail returning its normal service schedule, which drove temporary ART users back to using Metrorail (Koma, 2018).

Figure 2: ART Annual Ridership (Unlinked Trips)



Data source: Transit Center's compiled National Transit Database (TransitCenter, 2019)

The dynamic changes in bus ridership makes it critical to examine the determinants behind bus ridership as discussed in the following section.

RIDERSHIP DETERMINANTS

The changing nature of ridership and its significant impact on the viability of transit systems makes understanding the dynamics behind the changes in ridership critical. A closer look at the travel behavior literature shows that there is a rich literature on the drivers and determinants of bus and transit system ridership, spanning across the United States and beyond, and going back to at least the 1980s.

Our reading of the literature suggest that the determinants of travel behavior can be categorized into the following groups:

- **The transportation system and the built environment.** These factors explain how differences in system supply or land use affect ridership levels. These include cost, route coverage, service frequency, real-time transit information, and transit substitutes and complements. Land use factors in particular explain how variations in urban structure affect transit ridership. This includes elements of the economic activity and business development of the area of residence.
- **Transportation Users.** These factors fall on the demand side and include socio-economic factors, life-stage elements, and perception and attitudes. **Socio-economic factors** explain the impact of changing demographics on transit ridership as well as differences in ridership across segments of the population (based on income, gender, etc.). **Perceptions and attitudes** about a transit system are factors more recently being recognized in the literature as important in transportation decisions. For example, perceptions about

safety might explain the impact of biases and culture on transit ridership. **Life-stage elements** explain the impact of childhood influences (e.g. riding transit during high school) as well as **life-cycle milestones** (such as marriage and childbirth) on transportation choices in general and the choice to use transit in particular.

- **External Factors.** These include factors such as weather and the economy that show how transit system ridership may experience ebbs and flows that are unrelated to the transit system. An example is the impact of financial crises on transportation mode choice.

These groups are schematized in the conceptual framework below and described in the rest of the chapter.

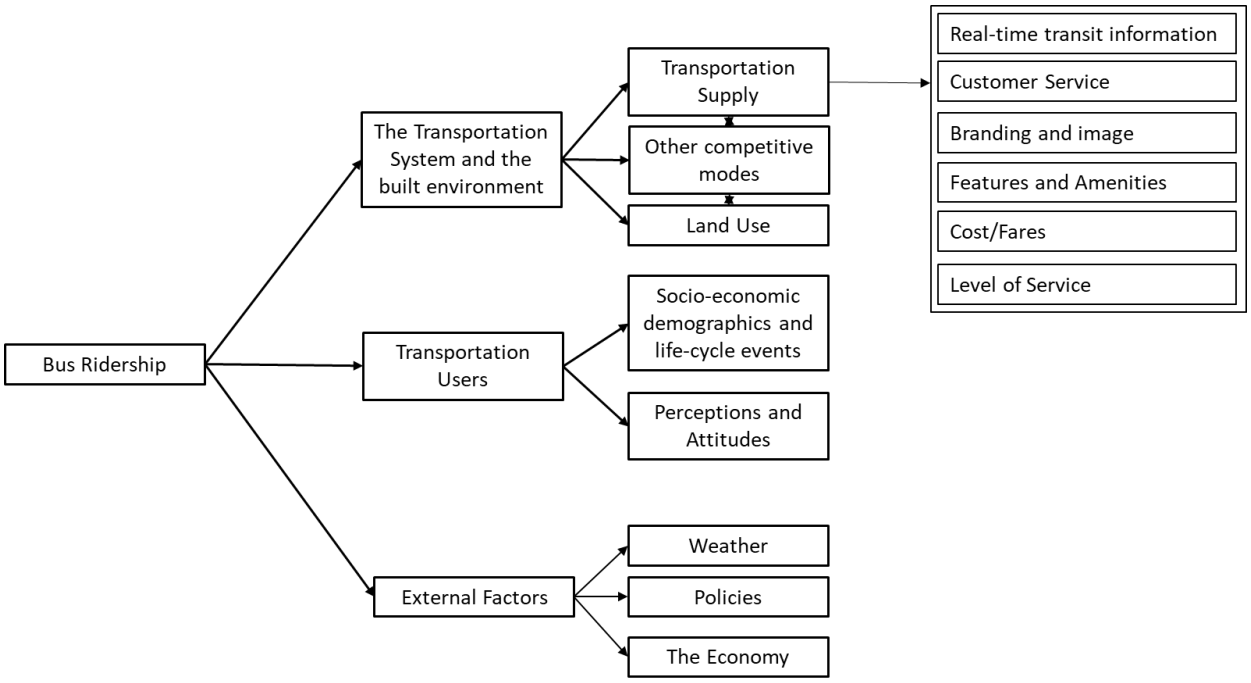


Figure 3: Conceptual framework of the determinants of bus ridership

THE TRANSPORTATION SYSTEM AND THE BUILT ENVIRONMENT

Transportation supply

Differences in elements of transportation supply, such as the availability and cost of various transportation modes, impact bus ridership levels. Below, we discuss the ways that factors of transportation supply—including costs and fares, transit system service level, bus amenities, and the availability of real-time information—are shown to impact bus ridership throughout the literature.

Cost and fares

Across the literature, **cost** is one of the most important determinants of bus ridership as it is for travel behavior more generally (Boisjoly, et al., 2018; Brown, Blumenberg, & Taylor, 2016). Typically, reduced fares increase ridership, and the significance of this relationship relies on fare elasticity, or how much individuals are sensitive to changes in

fares. Fare elasticity depends on multiple factors such as population density, income, and time of day, as discussed below.

Throughout the literature, researchers find that fare prices have a negative relationship with bus ridership, meaning that increased fares will reduce ridership and vice-versa (Taylor & Fink, 2003; Syed & Khan, 2000; Kain & Liu, 1999; Graehler Jr, Mucci, & Erhardt, 2019). This relationship is also true for bus rapid transit (BRT) systems, for which Hensher and Li (2012) find that cost is one of the most important determinants of ridership due to high price elasticity. To quantify this relationship, Pham and Linsalata (1991) and Boisjoly et al. (2018) find that, on average, a ten percent increase in bus fares causes a 4% or a 2% decrease in ridership, respectively. Tang and Thakuriah (2012) also find that bus fares are significantly negatively correlated with ridership; on average, a one-dollar increase in bus fares leads to a weekday ridership decrease of 1,100.

Several factors in the literature were examined as determinants of fare elasticity, such as age/life-stage, population density, income, and time of day. Discounted fares for populations such as students or the elderly are correlated with increased ridership (Taylor & Fink, 2003). Fare elasticity is also found to vary by urban size and population density: Pham and Linsalata (1991) determine that fare elasticity is higher in smaller cities than larger urban areas, meaning that fare increases in smaller cities would result in greater ridership losses than they would in larger cities. According to Garret and Taylor (1999), people with lower incomes are less sensitive to fare increases than people with higher incomes, as those with lower incomes tend to be more transit-dependent and those with higher incomes can more easily change transit modes or drive when fares increase. Pham and Linsalata (1991) also find that peak-hour travelers are less sensitive to fare changes than off-peak hour travelers, suggesting that time of day has an impact on fare elasticity.

The importance of fare price on bus ridership varies in the literature—for example, Kain and Liu (1999) find that fare reductions were a key cause of ridership increases in Houston and San Diego transit systems from 1980 to 1990, whereas Syed and Khan (2000) find fare reductions less important to ridership than all other significant factors in their factor analysis of Ottawa-Carleton residents. In recent years, most systems across the country have not significantly increased fares; according to Manville, Taylor, and Blumenberg (2018), while average fare per boarding has increased slightly from 2002 to 2016 in the Unites States (adjusting for inflation), average fare per passenger mile traveled remained more or less constant. For systems that increased fares significantly, such as Orange County Transportation Authority (OCTA), Manville, Taylor, and Blumenberg (2018) suggest that fare increases may account for a large portion of lost ridership, but they find that in most cases, fare changes are not significant enough to change ridership.

ART last increased its fares in June 2017 (at the same time as WMATA), from $1.75 to $2.00 for a regular bus fare, a 14% fare increase not accounting for inflation (Arlington Transit, 2017; Arlington Transit, 2019; WMATA, 2017).

ART ridership peaked in 2017 and has since been in decline, even though fares have remained constant (NVTC, 2018). It is possible, then, that this 2017 increase in fares contributed to the system's initial ridership decline, but other factors are likely responsible for its continued ridership losses.

Availability of real-time information

Especially in recent years, as Smartphones have become more and more ubiquitous, real-time transit information (RTTI) is an increasingly important driver of transit ridership. RTTI can be distributed by transit agencies online, on Smartphone apps, or on display screens at transit stops and other locations to allow customers to see the actual arrival time of buses or trains, as traditional time-tables cannot take into account traffic delays or other schedule uncertainties. The availability of RTTI impacts mode choice, as it helps people weigh factors of cost, convenience, and time, which may make people more or less likely to take transit (Mobility Lab, 2019). For example, people might decide to take an Uber if the next train or bus will take too long to arrive, or decide to take the bus instead of another mode if it is arriving soon. Accurate RTTI can boost the perception of reliability of a system, and thus boost ridership (Grisby, Dickens, & Hughes-Cromwick, 2018; Tang & Thakuriah, 2012; Syed & Khan, 2000).

To quantify this relationship, Brakewood et al. (2015) find that the 2011 addition of a real-time bus tracker system in New York City was associated with a 1.7% increase in weekday bus ridership. In their study of Ottawa-Carleton, Syed and Khan (2000) find that the availability of bus information (including real-time information and more static forms of route and time information) explains 22% of ridership variance and is the greatest determinant of bus ridership among other factors.

ART offers a variety of methods to access RTTI, including on their website, through the phone, through third-party applications, and on dynamic messaging screens. Following Mobility Lab's 2019 report prepared for Arlington County that found the current satisfaction with available RTTI, how RTTI impacts perceptions and usability of ART, and what changes riders would like to see in how they access and use RTTI, ART will continue to spread awareness about its RTTI tools and improve user experience with RTTI (Mobility Lab, 2019).

Level of service

A transit system's level of service is dependent on its coverage (i.e., how extensive is the network and where does it go), its frequency of service, and its speed. Level of service is one of the most studied and consistently strong determinants of transit ridership in the literature, and is found to be the most (or one of the most) influential explanatory variables in several transit ridership studies (Currie & Delbosc, 2013; Thompson & Brown, 2006; Boisjoly, et al., 2018). To quantify the impact of service level on ridership, Boisjoly et al. (2018) find that a 10% increase in vehicle revenue kilometers (VRK), which measures the "number of kilometers travelled by vehicles in revenue service," is associated with an 8.27% ridership increase.

Coverage

As seen in the results of the following studies, more expansive route coverage is often found to be positively correlated with transit ridership (Hensher & Li, 2012; Kain & Liu, 1999). Kain and Liu (1999) similarly find that large service coverage increases are positively associated with transit ridership in Houston and San Diego from 1980 to 1990: a coverage increase of 80% in Houston is linked to a 48.5% ridership increase, and a coverage increase of 26% in San Diego is linked to an 8.8% ridership increase.

Since 2013, Arlington Transit has primarily extended service coverage, adding new routes such as 55 and 72 and extending or realigning existing routes to better serve its riders (Arlington Department of Environmental Services, 2015; Arlington Transit, 2018). However, it has also cut routes, such as 54 and 92, because of budget constraints and lack of ridership (Arlington Transit, 2018). Because ART coverage has largely expanded rather than contracted in recent years, it is unlikely that coverage changes contributed to the current ridership decline.

Frequency of service

In general, increased frequency of service is correlated with higher bus ridership, as more frequent systems create decreased wait times and schedules that better fit transit rider needs (Hensher & Li, 2012; Mucci & Erhardt, 2018; Currie & Delbosc, 2011; San Santoso, Yajima, Sakamoto, & Kubota, 2012). However, the effect of service frequency improvements depends on time of day and route frequency prior to improvements. For example, Currie and Delbosc (2011) find that increased frequency of weekday service is most strongly correlated with higher ridership. Tang and Thakuriah (2012) find that there is a "diminishing marginal effect of increasing bus service frequency," meaning that frequency increases on low-frequency routes produce much greater ridership increases than they would on higher frequency routes.

Similar to its changes in service coverage, ART has largely worked to increase frequency on its routes in the past few years. Due to budget cuts and lack of ridership, ART has also reduced frequency on several of its routes over the past few years. As frequency of service changes have largely increased frequency of service across ART routes, it is unlikely that service frequency changes contributed to the current ridership decline, although it may have altered ridership levels on impacted routes.

Speed of service

A bus system's en route speed may have an impact on ridership levels. In general, people prefer transit modes that get them from door to door in the shortest amount of time. However, the actual speed of bus systems is often negatively correlated with ridership, as more heavily-used routes tend to be in dense urban areas with heavier traffic (Currie & Delbosc, 2011; Currie & Delbosc, 2013). This finding does not mean that riders are attracted to slower bus routes, but rather that high-ridership routes and times are impacted by higher traffic congestion that slows operations. This finding thus indicates that speed is less of a determinant of transit ridership than other variables, such as time of day or land use. When compared to other transit modes, however, speed has a positive correlated with ridership, as transit riders tend to opt for the speediest option (Ben-Akiva & Morikawa, 2002).

Transfers and integration

Increasing the efficiency and simplicity of transfers within or between transit systems retains or increases transit ridership (San Santoso, Yajima, Sakamoto, & Kubota, 2012). Bus system integration with a region's greater transit network, where transit riders can easily transfer from mode to mode with multi-system payment methods (such as the DC-area SmarTrip card) and multimodal transit stations, is correlated to higher ridership (Hensher & Li, 2012; Banerjee, Myers, Irazabal, & Bahl, 2005; Currie & Delbosc, 2013). For example, Banerjee, Myers, Irazabal, and Bahl (2005) find that presence of metro rail is positively associated with bus transit ridership in Los Angeles, indicating that bus ridership is higher in areas with more transit options.

Bus amenities and features

The quality or condition of bus stops (e.g., shelters or seating), buses (e.g., cleanliness or accessibility), and the process of fare collection are found throughout the literature to impact bus ridership; more modern systems tend to have higher levels of ridership. Bus stop improvements, including the addition of shelters, lighting, seating, and signage, are positively associated with bus ridership in Utah (Young Kim, Bartholomew, & Ewing, 2018). Cleanliness of buses and bus stops are similarly positively correlated with bus ridership (Syed & Khan, 2000). Currie and Delbosc (2011) find that vehicle accessibility is positively associated with bus ridership, but they suspect that this finding relates to the overall design, comfort, and branding of the accessible buses in the study (which tend to be newer than non-accessible buses). Pre-board fare collection or fare verification in BRT systems reduce boarding and waiting times and are associated with increased ridership (Hensher & Li, 2012; Currie & Delbosc, 2013).

Branding

Branding that increases visibility and knowledge about a transit system, and thus increases user confidence, is found indirectly in the literature to increase ridership. For example, Currie and Delbosc (2011) suggest that branding attracts riders to newer buses with better features (e.g., accessibility) and that good branding might make up for lower-cost design or lower-levels of on-street segregation (e.g., bus lanes). Branding that advertises the benefits of public transit might also change negative perceptions about buses and attract riders (Syed & Khan, 2000).

Customer service

The quality of a transit system's customer service may impact transit ridership, though this relationship has not been widely examined in the literature. Good customer service levels are correlated with increased transit ridership; for example, Syed and Khan (2000) find that in their study of Ottawa-Carleton, the quality of a transit system's call center and customer service explains 5.6% of ridership variance.

Other competitive modes

Other substitutes or complements for transit, such as ride-sharing/ride-sourcing services, biking, and teleworking,, that can help fill gaps in transit schedules and make transit stations more accessible, also affect transit ridership. These alternative travel/commute modes can serve primarily as substitutes or complements to transit, but there is overlap between these effects, as shown in the studies below.

Transit Network Companies (TNCs)

Throughout the literature, TNCs such as Uber and Lyft are examined as both transit substitutes and transit complements. TNCs typically offer both private ride-sourcing services as well as ride-sharing services, but the literature largely focuses on private ride-sourcing.

Ride-sourcing services are more expensive, but also more convenient and flexible than public transit options, which may lead public transit riders to substitute ride-sourcing for bus or rail (Sadowsky & Nelson, 2017; Graehler Jr, Mucci, & Erhardt, 2019). Sadowsky and Nelson (2017) find that while the introduction of one TNC may have an initial complementary effect on public transit (i.e., spike transit ridership), after a second TNC enters the market, prices for ride-sourcing decrease, which causes public transit ridership to decline. To quantify this relationship, Graehler, Mucci and Erhardt (2019) find that the introduction of TNCs into a market is associated with a 1.7% decrease in bus ridership. While Hall, Palsson, and Price (2018) find that Uber is generally a complement to transit in the US, they also find that it acts as a substitute for transit in smaller cities and for higher-income bus riders.

Studies also show that TNCs have a complementary effect on transit in certain conditions (Hall, Palsson, & Price, 2018; Boisjoly, et al., 2018). Hall, Palsson, and Price (2018) find that Uber is a complement to transit for most transit agencies, but that there is substantial heterogeneity in whether or not Uber is a complement or substitute to transit based on factors such as urban population, transit agency size, and income variation. To quantify this relationship, they estimate that Uber increases transit ridership for the average US transit agency by 5% in two years; however, they find that Uber generally has a greater complementary effect on rail transit than bus transit.

When TNCs began operating in Arlington in 2014 (Hooks, 2015), ART ridership was still increasing before it began to decline in 2016. While TNCs may have impacted transit ridership levels at this time, there does not seem to be a clear correlated between the introduction of TNCs in Arlington and a change in ridership levels.

Bikesharing and bicycling

Bike share programs are gaining in popularity in the US and abroad—how does this impact transit ridership? As with studies examining the impact of TNCs on public transit ridership, findings on the impact of bike share or biking on ridership are mixed.

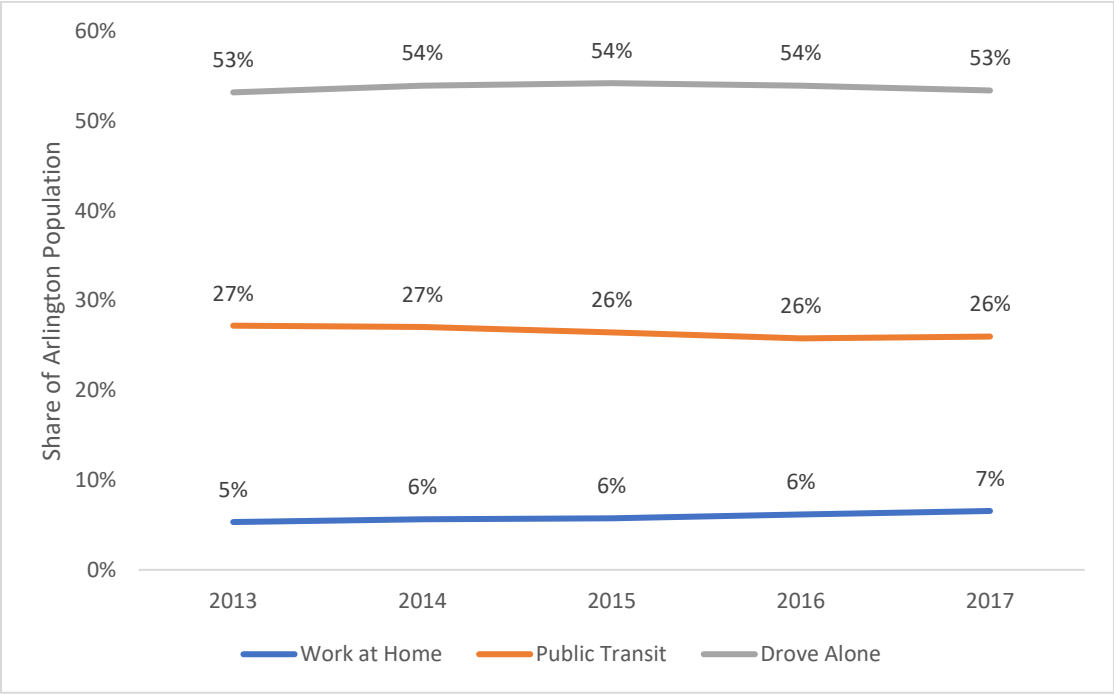
As a complement to transit, bike share or biking may aid public transit riders in connecting to their origin or destination and thus increase transit ridership. This positive correlation is found by Graehler, Mucci and Erhardt (2019) for rail transit specifically and by Boisjoly et al. (2018) for transit in general. Much less research exists on scooters, but a study in Rosslyn, VA from Virginia Tech (Chowdhury, Hicks, James, Swiderski, & Wilkerson, 2019) shows that about 26% of respondents used dockless e-scooters to and from public transit (e.g. bus or Metrorail) and that e-scooters are more likely to replace car trips than public transit trips.

On the other hand, research shows that, especially in congested urban areas, people may prefer to use bike share or personal bicycles as a substitute for transit (Campbell & Brakewood, 2017; Graehler Jr, Mucci, & Erhardt, 2019; Grisby, Dickens, & Hughes-Cromwick, 2018). To quantify this relationship, Graehler, Mucci and Erhardt (2019) find that the introduction of bike share in a typical North American city is correlated with a 1.8% decrease in bus ridership. Campbell and Brakewood (2017) similarly find that increased bike infrastructure and bikeshare docks are linked to declining bus ridership in New York City; for example, bus routes experience a 2.42% decrease for every thousand bikeshare docks nearby their route, although some of this decrease (0.75 percentage points) is associated with concurrent bike lane expansions which improved general biking conditions.

Telecommuting

Telecommuting and teleworking may act as a substitute for transit where the trip to work would be eliminated. In cases where transit is heavily used for commuting, increases in telework could result in decrease in transit ridership. Currently, there is limited research linking teleworking to changing transit ridership trends and the results are mixed, as most of the research is focused on the relationship between teleworking and reducing vehicle miles traveled. Lehmann (2018) finds that the increased percentage of workers who telecommute is partially responsible for recent national public transit ridership declines. Miller et al. (2018) quantified the negative relationship between teleworking and transit ridership by showing that a 10% increase in the percentage of telecommuting population is associated with a 1.27% decrease in ridership. Chakrabarti (2018) also finds that increasing telecommuting may not significantly boost ridership. On the other hand, Black (2001) argues that teleworking should not have any significant impact on daily travel in cities because other trips still have to be made, such as picking up children from school, going to the grocery store, etc.

According to findings on primary commute mode from the U.S. Census Bureau 2017 American Community Survey, 9% more people across the country primarily worked from home in 2017 than in 2013 (U.S. Census Bureau, 2019). These findings indicate that telework is also increasing in Arlington, which may be tied to transit use decline: in Arlington County, the share of people primarily working from home increased 23% in this time period, while the share of people primarily taking public transit decreased 4%. However, these results only capture the change in primary commute mode over the past few years, and do not capture occasional telework changes that may also impact bus ridership. The below graph plotting this Census data shows the changing share of the population that primarily works from home, takes public transit, or drives alone to work; although the share of teleworkers is still minor compared to those who take public transit or drive to work in Arlington, the recent growth in teleworkers is significant.



Data source: American Community Survey 5-Year Estimates (U.S. Census Bureau, 2019)

Figure 4: Arlington Primary Commute Mode

Land use

Aside from, and correlated to transportation supply, land use is an important factor in transportation mode choice in general and transit ridership in particular. Land use and urban structure play a big role in determining public transit ridership; in general, the denser an urban area, the more effective public transportation systems are and thus the more attractive they are (Boisjoly, et al., 2018; Nasri & Zhang, 2014; Currie & Delbosc, 2013). Denser city cores will generally have higher transit ridership rates than suburban areas or more sprawling cities, where transit often cannot compete with automobiles in terms of efficiency or speed (Grisby, Dickens, & Hughes-Cromwick, 2018; Banerjee, Myers, Irazabal, & Bahl, 2005).

Not surprisingly, higher densities of population, housing, and employment are all positively correlated with public transit ridership (Boisjoly, et al., 2018; Banerjee, Myers, Irazabal, & Bahl, 2005; Currie & Delbosc, 2013). To quantify this relationship, Boisjoly et al. (2018) find that a 10% increase in population is associated with a 3.39% increase in transit ridership.

Transit-oriented development (TOD) strategies aim to decrease automobile trips and increase transit usage through land use changes that encourage increased density, mixed-use zoning and buildings, better access to community amenities, and better walkability (Grisby, Dickens, & Hughes-Cromwick, 2018). Nasri and Zhang (2014) find that almost three times as many trips are made by transit/walk/bike in TOD areas versus non-TOD areas in Washington, DC, and about 5% more trips are made by transit/walk/bike in Baltimore, MD in TOD areas.

The availability of parking is also linked to public transit ridership, as areas with limited parking options discourage driving and encourage the use of public transit. For example, in New York City where lack of parking and urban structure decrease the utility of private cars, transit ridership is higher than areas with more access to parking (Taylor & Fink, 2003).

Street design choices that prioritize transit efficiency, such as dedicated rights of way for buses or sidewalk design that allows for easy bus boarding, are correlated with increased ridership (Currie & Delbosc, 2011; Grisby, Dickens, & Hughes-Cromwick, 2018; Ben-Akiva & Morikawa, 2002). Rights of way for buses through street design choices can increase speed of buses, making them more efficient and more attractive as transportation options. Dedicated bus lanes, either physically separated from traffic or demarcated by paint, help to avoid "bus bunching" and allow buses to avoid traffic congestion. Other street design improvements that lead to increased bus ridership include *queue jumps* (street design that allows buses to navigate ahead of other vehicles at intersections), *signal priority* (traffic signals give buses a green light before other vehicles), and *transit bulbs* (in-lane, curb extension transit stops that allow buses to avoid making lateral shifts in traffic) (National Association of City Transportation Officials, 2019).

However, regardless of density and TOD, cities across the United States experienced ridership loss in the last few years (Higashide & Buchanan, 2019; TransitCenter, 2019). Although high-density urban areas have higher overall ridership numbers, recent ridership declines do not seem to be tied to land use changes as much as other forces, such as substitutes and economic forces (Higashide & Buchanan, 2019).

Arlington County is a high-density urban county about 26 square miles large, bordering the Potomac across from Washington DC. The county has a combination of low-density residential neighborhoods, largely concentrated in the northern part of the county, and high-density business/residential districts. Three corridors in the county—the Rosslyn-Ballston Metro Corridor, the Jefferson Davis Metro Corridor (composed of Pentagon City and Crystal City), and Columbia Pike—are the main focus of transit-oriented development, a priority of County land use policy (Arlington County, 2018). Over the past decade, Arlington has grown both in terms of employment density and population density, with most of this growth concentrated in the major planning corridors, though employment growth has been and is projected to be greater than residential population growth (Planning Research and Analysis Team, 2010).

TRANSPORTATION USERS

Aside from transit supply and land use, user demographics, as well as perceptions and attitudes, impact transit ridership.

Demographics

The demographics of a neighborhood or metropolitan area influence transit ridership, as certain populations are more likely than others to take transit. As discussed below, racial minorities, immigrants, students, and younger age groups (including millennials) are among the groups found in the literature to be more likely to use transit.

Race

Racial minority groups are found in the literature to be more likely to take transit in the United States than white populations, meaning that regions with higher levels of racial diversity tend to have higher levels of public transit ridership (Rosenbloom, 1998; Garrett & Taylor, 1999; Taylor & Morris, 2015; Brown, Blumenberg, & Taylor, 2016; TransitCenter, 2014). However, research has also found differences in racial composition between public transit modes. For example, Taylor and Morris (2015) find that bus riders are more likely to be racial minorities, whereas rail riders are more likely to be white.

Immigrant populations in the United States have been found to use public transit more than native-born residents (Blumenberg & Evans, 2010). As shown in this paper, though immigrants primarily commute to work via automobile, immigrants are twice as likely to commute by transit as native-born Californians and comprise 50% of transit commuters in the state. However, Blumenberg and Evans (2010) also find that immigrant transit use patterns vary by location, and that immigrants are more likely to use transit in metropolitan areas where transit ridership is low.

Shifts in neighborhood racial/ethnic demographics are similarly found to impact transit ridership (Goldwyn, 2018; Blumenberg & Evans, 2010). For example, Goldwyn (2018) finds that migration of the West Indian population in Brooklyn is associated with changes to bus ridership from 2000 to 2010: where West Indians moved out, bus ridership saw greater than average declines, and where they moved in, bus ridership saw greater than average growth.

Education

Across the literature, current students are found to be more likely to use public transportation than non-students (TransitCenter, 2014; Brown, Blumenberg, & Taylor, 2016; Rosenbloom, 1998). Findings on the impact of educational attainment on transit ridership are mixed, however. When used as a proxy for income, educational attainment level is negatively correlated with transit ridership: those with lower levels of education are more likely to take transit (Abdel-Aty, 2001). However, when accounting for income and other demographic variables, studies find that educational attainment has limited impact on transit ridership (TransitCenter, 2014; Rosenbloom, 1998). TransitCenter (2014) finds that education level does not impact likelihood to take transit, while Rosenbloom (1998) finds that education level impacts mode choice, in that those with high educational attainment are more likely to take light rail or commuter rail than other populations.

Age

Younger populations (including Millennials, loosely defined as people born between 1980 and 2000) are found to be more likely to be multi-modal and take public transit than older adults, and correspondingly less likely to get their driver's licenses at a young age (Brown, Blumenberg, & Taylor, 2016; TransitCenter, 2014; Delbosc & Currie, 2013). In general, these papers find that Millennials tend to be more enthusiastic about public transit and tend to live in more transit-accessible neighborhoods than older generations, and that potential causal factors for this difference include life-stage changes (more Millennials are students, delayed marriage/children, etc.), affordability of transit versus car ownership, and changing attitudes about transit modes (e.g., environmental consciousness). However, Brown, Blumenberg and Taylor (2016) find that Millennials have increased driving following the Great Recession, and suggest that the generational transportation behavior shifts found in the literature may be as much as result of external economic forces as shifting values and attitudes.

Household composition may also impact ridership, but findings are mixed in the literature. While Brown, Blumenberg and Taylor (2016) find that adults without children are more likely to take transit than those with children, as adults with children often have more complex travel patterns that make public transit difficult, TransitCenter (2014) finds that parents and non-parents are equally likely to take transit. Adults living in larger households are also more likely to take transit, as there may be competition over household vehicles (Brown, Blumenberg, & Taylor, 2016).

Income

Across the board, the literature finds that higher incomes are most often correlated with decreased transit usage, as higher incomes enable people to more easily own automobiles (Taylor & Fink, 2003; Garrett & Taylor, 1999). Research also finds that income impacts public transportation mode choice, in that those with higher incomes are more likely to take rail over the bus (Mucci & Erhardt, 2018; Lascano Kezic & Durango-Cohen, 2018).

In most places (particularly low-density areas), transit is an inferior good relative to automobiles, meaning that as incomes increase, transit usage decreases while car ownership increases (Taylor & Fink, 2003). Several studies find car ownership to be a top determinant of transit ridership (Boisjoly, et al., 2018; Rosenbloom, 1998), and that a recent rise in car ownership is a leading cause of declining transit ridership across the country (Higashide & Buchanan, 2019; Manville, Taylor, & Blumenberg, 2018). To quantify this relationship, Rosenbloom (1998) finds that zero-car households are about six times more likely to commute by transit than households that own one or more vehicles (though this study predates TNCs and bikeshare programs, which now provide more options to those without access to private vehicles), and Higashide and Buchanan (2019) find that for every day per month that respondents increased their usage of private cars, they decreased their use of transit by 0.41 days per month.

In high-density urban areas, research indicates that higher incomes are associated with higher transit ridership; however, income tends to be positively associated with rail transit and negatively associated with bus transit in these areas (Mucci & Erhardt, 2018; Lascano Kezic & Durango-Cohen, 2018).

Perceptions and attitudes

For a long time, the travel behavior research considered only objective measures as determinants of transportation choice. These include, for example, cost, time and level of service. More recently, the literature puts forward the importance of accounting for subjective measures such as perceptions and attitudes (Krizek & El-Geneidy, 2007; Klein, 2017). Below, we review some of the relevant literature on perceptions and attitudes including perceptions of (1) safety, (2) reliability and comfort, (3) convenience, (4) sustainability, (5) perceptions of other modes and (6) loyalty.

Safety

Research shows that public transit ridership is affected by perceived safety issues: when riders feel safe on public transit, they are more likely to ride (Syed & Khan, 2000; Delbosc & Currie, 2012; Grisby, Dickens, & Hughes-Cromwick, 2018; Ingalls, Hartgen, & Owens, 1994). While perceived safety risk is found to significantly deter non-bus riders in Ingalls, Hartgen, and Owens (1994) and significantly impact frequency of public transit use in Delbosc and Currie (2012), these papers find that other factors, such as basic service level, are more influential. Safety of areas around transit stops are also found to be important to ridership (Syed & Khan, 2000; Delbosc & Currie, 2012). To clarify, Delbosc and Currie (2012) find that perceptions of public transit safety largely have to do with how safe one feels on the street at night, which depends on neighborhood factors as well as gender and age.

Reliability and comfort

On the other hand, by developing a 32-question pilot questionnaire to obtain bus passengers' attitudes in Nanjing China, Hu, Zhao and Wang (2015) find that perceptions of the reliability and comfort of bus service have a more significant impact on passengers' mode choice preference than perceptions of availability and safety do.

Convenience

Morton, Caulfield, and Anable (2016) developed a survey with an 11-item opinion scale to measure service aspects and attitudes towards perceived quality of bus service such as convenience, cabin environment and ease of use. Their results indicate that attitudes of quality of bus service significantly differ between passenger groups; for example, females are more likely to express relatively negative opinions regarding the quality of the cabin environment. More importantly, they find that perceived convenience of the bus service is positively associated with perceived satisfaction with the bus service.

Pro-environmental attitudes

Syed and Khan (2000) find that "buses should be perceived as environmentally clean" to increase ridership, and that low-pollution or alternative-fuel buses are preferable. They suggest that transit companies advertise and promote

their environmental-friendly measures to increase this perception; for example, electrified bus systems can include signage at stations or on buses about their decreased impact on the environment, which may improve perceptions.

Perceptions of other modes

Through an analysis of the frequency of single-occupant automobile (SOA), bus, and carpool in relation to the beliefs individuals held with respect to these modes, Tischer and Phillips (1979) find that there is a strong causal relationship between beliefs about SOA and bus and use of those modes over time. Moreover, they find that this relationship is simultaneous, meaning that beliefs determine behavior, and behavior reinforces and changes perceptions.

Loyalty

Loyalty programs, such as monthly or weekly transit passes, can influence people to take transit more often. However, according to Grisby, Dickens, and Hughes-Cromwick (2018), the utility of these passes is declining due to changing work schedules and the increasing popularly of telecommuting. They suggest that transit systems may be able to increase ridership through the reimagining of loyalty programs to increase their utility, such as Smartphone applications that allow for gamification and sharing, earned points for travel, and showing customer travel statistics. Loyal customers are more likely to recommend the service to others, and they are less likely to be persuaded by competitive strategies, leading to lower marketing costs and increased market share (from quantifying the benefits).

For example, Lai and Chen (2011) used a passenger survey data from Kaohsiung Mass Rapid Transit in Taiwan to conclude that customer loyalty is a prime determinant of long-term financial performance and a major source of competitive advantage. Their research also shows that involvement, defined as the level of interest or importance that an object has for an individual, predicts behavior, where customers are likely to display attitudinal loyalty for high-involvement purchases.

To understand loyalty, some researchers find that service quality and satisfaction positively impact loyalty (Minser & Webb, 2010; van Lierop & El-Geneidy, 2016). For the Chicago Transit Authority (CTA) system in particular, changes in the attractiveness of other modes or external factors (defined by Figler et al. as traffic congestion, parking prices and rail construction) likely drove the increase in passengers' loyalty to CTA observed in 2008 (Figler, Sriraj, Welch, & Yavuz, 2011).

EXTERNAL FACTORS

Aside from the factors discussed above, transit agencies face external factors that could impact transit ridership. In this section, weather and the economy are discussed.

Weather

Adverse weather (such as rain, wind, or snow) has been shown to decrease ridership temporarily or seasonally, as people choose to drive or telecommute rather than take transit when the weather makes transit more inconvenient or more slow (Stover & McCormack, 2012; Guo, Wilson, & Rahbee, 2007; Tao, Corcoran, Rowe, & Hickman, 2018).

For example, Stover and McCormack (2012) find that rain decreases bus ridership anywhere from 5-10%, depending on the season, as waiting for transit in the rain is uncomfortable. The impact that weather has on transit ridership varies by season, day of the week, by transit mode, and by weather severity, as shown in the studies below.

Research finds that transit riders are especially sensitive to weather during the winter (Stover & McCormack, 2012). This paper finds that, in winter, temperatures 7°F cooler than average decreases bus ridership by 11%, whereas temperatures 7°F warmer than average increases bus ridership by 6%, in their study site of Pierce County, Washington. Additionally, they find that the advent of snow decreases bus ridership by 11%, as snow causes bus route changes, delays, or people to stay at home.

Studies also find that the impact of weather on transit ridership is stronger during the weekend than during weekdays, as weekday travel is more routinized (Tao, Corcoran, Rowe, & Hickman, 2018; Guo, Wilson, & Rahbee, 2007). Because bus stops, unlike rail stops, often are outdoors without shelter, bus riders are found to be more sensitive to adverse weather than rail riders (Guo, Wilson, & Rahbee, 2007).

In some cases, adverse weather is found to increase transit ridership; for example, in blizzards or other extreme weather conditions, people may find it safer to take transit instead of driving (Guo, Wilson, & Rahbee, 2007).

The Economy

Macro-economic shifts, such as recessions, economic upturns, and changes in employment levels, impact transit ridership, as shown by the studies below.

When there is a strong economy and incomes are higher across the country, bus ridership is found to decrease as people are able to afford other transportation options, such as rail transit or driving (Grisby, Dickens, & Hughes-Cromwick, 2018; Taylor & McCullough, 1998; Brown, Blumenberg, & Taylor, 2016). The economic upturn in recent years has made it easier for people to purchase and own cars, which Grisby, Dickens, and Hughes-Cromwick (2018) suggest has been a major contributing factor to the current decline in public transportation ridership.

Research also shows that transit ridership suffers during economic downturns and recessions, as transit systems face funding and budget cuts that negatively impact service level (Taylor & McCullough, 1998). For example, Taylor and McCullough (1998) find that public transportation ridership declined substantially in the US during the 1989-1993 recession, with the biggest ridership drops in the nation's biggest transit systems, primarily due to budget and service cuts.

National or local-level employment levels also impact ridership, as the employment rate is connected to the number of commuters who rely on transit; generally, research shows that employment is positively associated with transit ridership (Taylor & Fink, 2003; Kain & Liu, 1999; Hendrickson, 1986). Employment levels in a city's central business district (CBD) are similarly found to positively impact ridership, as CBD employment accounts for a high percentage of transit commuter trips (Hendrickson, 1986; Kain & Liu, 1999). However, Tang and Thakuriah (2012) find that the

relationship between employment and bus ridership in Chicago is not linear, but rather quadratic; bus ridership reaches its minimum when Chicago's unemployment rate is at 8.51% and increases with increases or decreases to the unemployment rate. They find that lower unemployment rates cause an influx in commuters who take transit to avoid traffic congestion, but unemployment rates higher than this make more people transit dependent as incomes decrease.

LITERATURE REVIEW CONCLUSION

This literature review on bus ridership determinants gives an overview of the factors that influence transit ridership and how they connect to trends in Arlington transit ridership trends. Some factors, such as decreasing cost of driving, increasing use of ride-sourcing, and macro-economic factors, seem to correspond to the current decline in transit ridership; while other factors, such as land use changes, do not seem as likely to be responsible for the decline. However, this literature review is meant primarily to guide research questions and directions as well as provide context for the findings of the ART Satisfaction Study.

In this literature review, we have separated each bus ridership determinant to get a sense of its unique impact. There is no clear consensus among studies on which factors are the most impactful, as no two studies examined the same set of variables. Additionally, the transit systems and geographic areas studied varies greatly across the literature; some studies focus on rural cities and others on large cities like New York, and some studies examine ridership change in a single system while others examine determinants across systems. This variation in study type allows us to learn local and global trends in transit system ridership, but individual findings may not be transferrable to other transit systems or geographic areas.

Each individual factor discussed often does not impact transit ridership on its own; these factors are interconnected and often interdependent. For example, as mentioned in the above discussion of speed of service, bus speeds have been found to be significantly negatively associated with transit ridership. However, this finding is the result of interdependent factors: slower bus speeds are correlated with higher transit use because routes with higher transit usage tend to be in denser urban centers with higher employment levels, which slows down service. Similarly, while we connect car ownership to income level above, car ownership is also connected to land use, employment density, the economy, culture, and other variables that we may not have discussed here.

The factors described above can loosely be categorized as internal and external to transit systems. While we listed weather and the economy as external factors, anything that is not in control of the transit system can be considered external; for example, transit agencies may not be able to control land use decisions, population characteristics like demographics and income, or the presence of ride-sourcing or bikesharing. Internal factors fall under the control of transit agencies, and include service frequency, route coverage, and fare pricing. However, some factors are not purely internal or external; for example, street design that improves rights of way for buses may be influenced by transit agencies without falling under their control.

The results of this literature helped guide the development of the survey materials, analysis and conclusion described hereafter.

3 RESULTS FROM FOCUS GROUP RESEARCH

METHODOLOGY

A series of four focus groups were held between November 28 and 29, 2018. Given the natural attrition that typically occurs, a total of 12 to 13 participants were recruited for each group with the goal of seating 8 to 10 per group. In total, 32 participants participated in this research, with eight participants in each group. Each group lasted approximately two hours and was overseen by a professional focus-group moderator from WBA Research.

These focus groups concentrated on three neighborhoods that traditionally contain a significant number of ART bus riders and that saw important decreases in ridership: Arlington Mill, Buckingham, and the Rosslyn-Ballston corridor. Two focus groups were comprised of those who do not currently ride the ART bus. These participants could either be lapsed riders (those who rode the bus at least four times in 2017, but not at all in 2018), or non-riders (those who have never ridden the ART bus). One focus group was comprised of those who currently ride the ART bus, defined as someone who rides the ART bus in a typical week and had taken at least one trip in the last seven days from the date they were recruited. All of these participants received a $100 gratuity for their participation.

The final focus group was comprised of those who primarily speak Spanish at home. This group was moderated by a professional Spanish-speaking focus group moderator, and the recordings from this session were transcribed from Spanish into English. The Spanish-speaking participants were a mix of lapsed riders, non-riders, and current riders. A five-year estimate conducted by the Census Bureau from 2013 to 2017 found that Spanish accounts for the largest proportion of non-English languages spoken in Arlington County (13.7% of the total population)[1]. Considering the size of this population, research was conducted among the Spanish-speaking community to investigate the perceptions, experiences, and needs of this demographic. Each of these participants received a $125 gratuity for their participation.

[1] [1]Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_S1601&prodType=table

READING THIS REPORT

Research Caveats and Limitations

Typically, qualitative research is used to provide answers to attitudinal questions, as well as to provide insight and in-depth understanding of consumer perceptions and opinions. By nature, this research method does not usually allow for statistical analysis and interpretation. Rather, it is a tool for decision-making purposes. The findings from this type of research should be used to provide insight and direction into decision-making rather than as a sole basis for decision-making.

Qualitative research tends to provide answers to questions like "Why?" and "How?," whereas quantitative research tends to provide answers to questions such as "How many?" or "How much?" The findings from this report are based on the attitudes and opinions of the participants and are not necessarily projectable or generalizable to the population at large.

PARTICIPANT PROFILE[2]

Non/Lapsed Rider Participants

One-half of the participants in the Non/Lapsed focus groups (those who rode the bus at least four times in 2017, but not at all in 2018 or those who have never ridden the ART bus) reside in Arlington Mill, while one-fourth live in the Rosslyn-Ballston corridor, and the remainder live in Buckingham. Most of these participants qualified as Non-riders, and about one-fourth qualified as Lapsed riders. There was an even split of males and females, but the age skewed young in this segment, as most participants were under the age of 35. The participants in these groups were racially and socioeconomically diverse, with representation from varying races, ethnicities and income levels. The majority of these participants rely on a car as their primary mode of transportation, but many also use Metrorail and/or walk. About one-half use ride-hailing services like Uber or Lyft in a typical week, and/or ride Metrobus.

Current Rider Participants

Current riders are defined as those who ride the ART bus in a typical week and had taken at least one trip in the last seven days from the date they were recruited. The representation from the three targeted neighborhoods was about even in this focus group. The participants skewed female, but the distribution of ages was more even than in the Non/Lapsed groups. About one-half of participants were under the age of 45, while the rest were between the ages of 45 and 74. This group was also racially and socioeconomically diverse, with representation from varying races, ethnicities and income levels. All of these participants ride the ART bus in a typical week, and almost all use Metrobus. Slightly more than one-half also drive, walk, and/or use Metrorail in a typical week. One-half of these participants use a ride-hailing service like Uber or Lyft in a typical week.

Spanish-Speaking Participants

The participants in the Spanish-speaking focus groups resided in Arlington Mill and Buckingham, and most qualified as Non or Lapsed riders. There was an even distribution of genders and ages and all of these participants identified as Hispanic or Latino. However, income level in this group skewed lower than other segments, with only one participant earning more than $50,000 a year. None of the participants in the Spanish-speaking group drive a car as a typical mode of transportation. Rather, these participants use Metrorail and/or walk. Many of these participants also typically ride Metrobus, but fewer ride ART in a typical week. One-half of these participants use a ride-hailing service like Uber or Lyft in a typical week.

[2] A detailed quantitative profile of the focus group participants is available in the appendix.

KEY FINDINGS

Overall, the participants in the focus group research tended to use positive words to describe their experiences with or perceptions of the ART bus. The Current Riders describe ART as 'convenient,' 'reliable,' 'environmentally friendly,' 'easy to use,' 'stops close to my starting point,' 'on-time,' 'enough seats,' 'direct routes,' and 'available schedules meet my needs.' Notably, one phrase that was not used to describe ART is 'goes to the places I need to go.' This is particularly significant when considering that this phrase is used to describe competitor services like Metrobus and Uber/Lyft. However, one-third of the ART riders included in the onboard portion of this research (31%) selected 'It [ART] takes me where I want to go' as one of the top five reasons they choose to ride ART. In fact, this was the top-third most selected response among the onboard respondents, suggesting that this omission among the focus group participants does not reflect the opinions of the ART ridership as a whole.

Among Non and Lapsed Riders, one of the biggest barriers to using ART found in this focus group research is the lack of awareness and information. In general, people do not seem to know where these buses go, how much they cost, or the level of service they provide. Some participants seemed open to considering ART if there was more information available – they were just overwhelmed by their own lack of knowledge. In fact, a few participants did not know that the ART bus was public transportation at all, instead believing it to be a private bus. This is supported by the findings from the online research where more information was also found to be a key factor in increasing ridership among those who do not regularly use ART buses.

Experiences with Transportation

Many participants across all three segments of focus groups shared that they have had experiences or changes in situations that have influenced their chosen primary mode of transportation. Themes such as cost, job location, schedule changes, having children and separation or divorce arose as events that impacted their mode choice. For example, a couple participants mentioned that they do not like to use public transportation when traveling with their children because of safety concerns. Life changes as a stimulus for transportation pattern changes is supported by the results from the online research, where those who experienced a milestone life change were significantly more likely than those who did not to report a change in their transportation behaviors.

The Current Rider and Spanish-speaking participants had difficulty identifying one singular primary mode. These participants shared that the modes of transportation available to them are either interdependent or they select which to use based on the conditions of their trip. Conversely, the Non/Lapsed Riders were easily able to identify either car or Metrorail as their primary mode.

Most of those in the Non/Lapsed groups use cars as their primary mode of transportation. Most of the features they like about driving concern convenience and comfort: they like the peace and quiet of being in their own vehicle, that they can store goods in their car/it makes shopping easier, that they can easily make multiple stops in their car, and ultimately, they like that it gives them a level of control they cannot have with public transportation.

The participants who use Metrorail appreciate that it can be an easier trip than driving a car – riders don't have to worry about parking, gas, or any of the other stresses that come with a car. Furthermore, these participants enjoy being able to do other things on the trip, like read a book. As one Non/Lapsed participant phrased it, when they take Metrorail, they are 'paying for peace of mind.' However, they also appreciate Metro for the service it provides, calling it 'consistent,' 'inexpensive,' 'clean,' and 'safe.'

Participants in the Current Rider group praised the bus systems in Arlington County in general for the number of options, the quality of the buses, and amount of service provided. However, it was also mentioned that more routes would be helpful, especially when moving beyond the main corridors in Arlington or to Reagan National Airport.

Perceptions of Transportation

Current and Non/Lapsed Riders alike think of public transportation in Arlington County as 'clean,' 'affordable,' 'reliable,' 'pervasive,' and as providing 'lots of choices.' Negative associations often connected public transportation with being late or delayed.

More than one-half of the participants in each segment circled 'clean,' 'safe,' and 'comfortable' as words that accurately describe the ART bus. Among Non/Lapsed Riders, sometimes these words were selected because they have observed these characteristics from afar or assumed these to be true based on their preconceptions. Interestingly, some of these preconceptions are informed by their opinions of Arlington County itself (i.e. Arlington County is clean and safe, so the bus system must be too).

Specifically looking at responses from Current Riders, these participants also described ART as 'convenient,' 'reliable,' 'environmentally friendly,' 'easy to use,' 'stops close to my starting point,' 'on-time,' 'enough seats,' 'direct routes,' and 'available schedules meet my needs.'

Notably, 'goes to the places I need to go' was not selected by most participants as a phrase that accurately describes ART, but it was selected for both Metrobus and Uber/Lyft. Notably, ART provides more extensive coverage within Arlington County than Metrobus, which suggests that participants like the coverage Metrobus provides in the greater Washington, DC metropolitan area. This presents an opportunity where an origin and destination study may prove useful to better understand where and how ART is utilized.

Loyalty

The participants were asked if they felt 'loyal' to their mode of transportation. None of the participants involved in this research demonstrated a sense of loyalty towards any one mode of transportation. The participants in the Current Rider group feel they have a 'transportation buffet' available and they take advantage of those options to select the mode that is best suited for the conditions of their trip (for example, time of day, destination, weather, etc.). In fact, they are so non-committed that even if they are waiting at the bus stop for an ART bus, they'll get on a Metrobus if it happens to arrive first.

While none of the focus group participants consider themselves loyal to ART, the respondents in the onboard study demonstrate attitudes that indicate customer loyalty (i.e. they are likely to continue riding ART and they are likely to recommend ART to others). This might suggest that ART riders do not feel emotionally attached or invested in ART, the way a customer might feel about a lifestyle or clothing brand, but riders are generally satisfied with their service and likely to continue using ART.

Among focus group respondents, reactions to a loyalty program were mixed. Some Current Riders like the idea of a loyalty program, but they were unsure if it would change their behavior. One person said that a rewards program would incentivize them, while another said that efficiency is more important than rewards, and yet another said a general reduction in fares would be more attractive. However, even if they were unsure of its effectiveness, the participants had several ideas as to how this program might work, such as, receiving one free ride for every nine trips taken or reduced fares if you ride multiple days in a row.

To quantify this reaction, the online and onboard respondents were shown a list of potential service enhancements and asked which ones would encourage them to ride ART buses more often, including a loyalty/rewards program. A rewards/loyalty program was selected by 17% onboard respondents and 24% of online ART rider respondents.

The Non/Lapsed participants were not drawn to the idea of a rewards program. One participant surmised that it would incentivize people already using the bus more than it would attract new users (there were no significant differences found between riders and non-riders in the online survey for this measure).

Barriers to Public Transportation and Suggestions to Increase Ridership

- Barrier 1: Among Non and Lapsed Riders, one of the biggest barriers to using ART found in this research is the lack of awareness and information. In general, people do not seem to know where these buses go, how much they cost, or the level of service they provide. Some participants seemed open to considering ART if there was more information available – they were just overwhelmed by their own lack of knowledge. In fact, a few participants did not know that the ART bus was public transportation at all, instead believing it to be a private bus.
    - Suggestion 1: To inform the public, participants made the following suggestions: send out an ambassador to teach people how to use the bus, partner with local restaurants, stores, and/or attractions to advertise ART service, and place informative advertisements on the bus wraps.
    - Suggestion 2: Most think a 'ride for free' trial day would encourage them to try out the ART bus, but they would not want it to be free for everyone all at once because that would not give them a sense of the normal experience. Instead, a free card to use at their own convenience was more attractive.
    - Suggestion 3: The participants in the Spanish-speaking group had some suggestions to specifically target their community. They feel that the bus system primarily serves their community, so they would like information that caters to that. These participants would like to see all information also

made available in Spanish, and communications with more graphics than text to help grab people's attention and better illustrate the concepts.

- Barrier 2: A barrier not just to ART but to all public transit is the limited payment options. Some participants said they consider using ART or public transportation but then change their minds when they realize they do not have a way to pay for the fare.
    - Suggestion 1: Expanding the available payment options to include credit cards or mobile payment may help to win some of the 'spur-of-the-moment' trips that ART is currently losing due to inconvenient payment options (in other words, the need to have a SmarTrip Card or exact change).
- Other suggestions to increase ridership: Beyond suggestions to overcome the aforementioned barriers, the participants also made some additional suggestions. These include: making the entire experience more high-tech, like upgrading the buses and making real-time information more reliable; reducing parking options to encourage people to take public transportation; and adding more bus shelters as well as improving the existing ones.
    - At the end of each focus group, the participants were asked to work as a group to create a list of five ideas to help increase ART ridership. Notably, all three groups listed mobile/electronic payment and a rewards program as potential initiatives to increase ridership. All three groups also had a suggestion to reach new riders: the first Non/Lapsed group suggested partnering with local employers and businesses; the second Non/Lapsed group suggested advertising on social media and at local destinations; the Current Riders suggested sending a brand ambassador to popular Metro stops to provide information on ART.

Results from the Spanish-speaking Participants

When asked about their experiences with their primary mode of transportation (for most, the bus), the conversation among the Spanish-speaking participants took a different tone than among participants in the other groups. Rather than discuss features of the services that they like or dislike, many participants shared feeling discriminated against by either the bus drivers or the other passengers.

One Spanish-speaking participant suggested having a cross-cultural training to help reduce conflict between the Latino community and the bus drivers. For example, classes to teach customers the proper time to arrive and how to pay would make the transaction easier for everyone.

The Spanish-speaking participants approached discussions on loyalty a bit differently than the other participants. For these participants, their loyalty is not a choice – many feel it is the only transportation option they have. Even if they ride the bus each day, they did not describe themselves as 'loyal.'

These participants also approached how they would like to be rewarded for this loyalty differently than the other participants. They did not mention any of the tangible rewards that others did, like points or free rides, instead, they would like to be rewarded with good service and schedules that meet their needs.

Results from the Bus Driver Sessions

Almost all of the bus drivers included in this research mentioned mechanical issues that impact their ability to perform their job well. According to the drivers, these issues create safety problems for the passenger and can negatively affect on-time performance.

Several bus drivers shared experiences where passengers try to board the bus without paying. According to one bus driver, this is happening so frequently that it is not worth the headache to try and force them to pay. However, the drivers also acknowledge that the farebox on each bus is different – some take cash, and some do not – which could cause confusion for the customer.

As a rule, the driver is not supposed to pick up any more passengers once they leave the bus stop; however, this can lead to complaints from customers who feel left behind. To avoid the complaint, bus drivers will stop to pick people up even though they are not supposed to. However, one driver admitted that it is hard to see people at night so sometimes customers will be accidentally left at the bus stop.

Generally, the bus drivers do not hear negative feedback from the passengers about the service provided. As to be expected, customers are happy when the bus is on-time and they are upset when it is late. They believe the customers only notice mechanical issues on the bus when the driver has to stop to fix something, which sometimes leads customers to complain. There are also major complaints about broken A/C in the summer and broken heat in the winter, but that was the most specific feedback bus drivers could recall.

PUBLIC TRANSPORTATION IN ARLINGTON COUNTY IS…

At the start of each focus group, participants were asked to write the words or phrases that come to mind when they think of public transportation in Arlington County (a detailed list of all words and phrases used is available on page 40). The responses below may refer to bus and/or train. In most cases it was not specified.

However, it is noteworthy that most of the feedback from Non/Lapsed and Spanish-speaking participants primarily concerns the bus systems that run through Arlington County. Even though there are three Metrorail lines that run through the county, these participants shared that they associate that system with Washington, DC. Specifically, two Current Riders wrote down ART as a word that comes to mind when thinking of public transportation in the area, and three Non/Lapsed Riders made mention of ART (however, these were less specific, calling it 'green buses').

Examining the types of words used by the various types of participants, those in the Current Rider group shared more positive associations than negative (23 positive words versus 6 negative words). Conversely, the Non/Lapsed participants used an almost equal number of positive and negative words to describe public transportation in Arlington County (24 positive words versus 27 negative words).

Current and Non/Lapsed Riders alike think of public transportation in Arlington County as 'reliable.' In fact, of all the words and phrases listed by the Current Riders, reliable was mentioned most often (four times).

> *"I put reliable… Meaning you could, you know it's coming, like if that one is not coming something else is coming." – Non/Lapsed Rider*

Both types of riders also think there are a lot of public transportation options in Arlington County, using words and phrases like 'pervasive' and 'lots of choices.'

> *"Lots of choices." – Non/Lapsed Rider*
>
> *"I feel like any, you can pretty much find a bus that takes you to wherever you want to go, or to a Metrorail station." – Non/Lapsed Rider*
>
> *"Very available." – Non/Lapsed Rider*
>
> *"Based on my experience, which it wasn't that much, I would say it's very efficient. There's a lot of buses, I'm going to speak in terms of buses, that takes you to the places where you need to be, very efficient time. It's very efficient in my opinion." – Non/Lapsed Rider*
>
> *"Yeah, I said, 'Lots of options.' Like I was thinking Metro, ART Bus, WMATA Bus, Car Share." – Current Rider*
>
> *"Just a lot of choice in buses." – Current Rider*
>
> *"Different ways to get to different places. You don't have to take the Metro line whether it be planes, trains or automobiles. If the train is delayed or it's not working, there's usually an alternate route, whether it be a bus, whether it be Uber, whether it be you walk." – Current Rider*

However, this availability of public transportation does not always suggest that it is convenient. While some participants felt that the schedules were frequent, others, Non/Lapsed and Current Riders alike, felt that the schedules could improve.

"Frequent schedules." – Current Rider

"It doesn't start early enough… It doesn't run late enough." – Current Rider

"It doesn't run every five minutes like the trolleys did like I was a kid." – Current Rider

"I put 'not on my schedule regularly'. It's like every time I've tried to, I've considered taking a bus, it's like oh 40 minutes from now with the stop next to my apartment, and I'm like I'm not waiting 40 minutes to just drive somewhere." – Non/Lapsed Rider

Participants in both the Non/Lapsed and Current Rider groups shared that they think of public transportation as 'clean.' In fact, this was the most frequent positive association made among the Non/Lapsed Riders (mentioned three times).

"I'd say at least the buses that I went on were clean. I don't know if I was lucky or if they're just always clean, but the ones I've been on have been clean. Also, maybe I'm lucky, but there haven't been any smells, like weird odors…" – Non/Lapsed Rider

"It's still relatively clean." – Current Rider

Both Current and Non/Lapsed Riders also tended to agree that public transportation in Arlington County is affordable.

"It's cheap." – Non/Lapsed Rider

"Cheap in comparison to a car; it's very cheap." – Non/Lapsed Rider

"I'm not sure in regard to how much you pay for it, like when you use public transportation, but the last time I used it, it was affordable. It was average. I'll put it that way. It wasn't more than what I was expecting." – Non/Lapsed Rider

"Affordable." – Current Rider

When public transportation was described as expensive, the participant was typically referencing Metrorail prices.

"That's why I've actually stopped riding Metro, because where I was commuting from here to D.C., from here all the way out to D.C., I was spending almost $20 a day. I'm like, 'Oh, it's cheaper for me to drive.'" – Current Rider

"Typically, if you live in Arlington, you either work in D.C. or you work way out in Virginia. I don't know what you're traveling. I don't know, maybe you guys do in this town. I know I was spending $18 a day riding mass transit. I said, 'Oh, no.'" – Current Rider

Among Current Riders, the word 'safe' was associated with public transportation in Arlington County. However, safe appears to have different meanings to different people. For some, feeling generally safe in Arlington County results in a feeling of safety when traveling throughout the county; others think of safety as familiarity with the route and the driver.

"For me it means if I come back at midnight, get off the subway at Ballston, I can walk home and I feel safe." – Current Rider

"Yeah, I think safety also could mean if you ride the same route all the time. I have recognized the bus drivers all the time, and I get on, and they see me and they're like, 'Oh, hey.' I'm like, 'Oh, hey' because we recognize each other, but like if you are going on a different route you may not know, it wouldn't feel as safe, but I take the same route every day." – Current Rider

Negative associations often connected public transportation with being late or delayed.

> *"What I think is that it always makes you late. It's always late. The buses, always, when you're with those buses, it's horrible. Now that it's cold, I was thinking, even more horrible." – Spanish-speaking participant*

> *"I put runs late unless you look online for the real time. Some of my co-workers also take the ART Bus and they're constantly also looking for the real time…" – Non/Lapsed Rider*

> *"I wrote 'running late.' It tells you that the bus is on its way, but then it's not, it already passed. Not a timely manner." – Non/Lapsed Rider*

Notably, some of the associations made by the Non/Lapsed Riders were based on second-hand knowledge or assumptions based on what they see as they travel throughout Arlington County.

> *"I have friends that have ridden the bus say that there [aren't] enough routes." – Non/Lapsed Rider*

> *"I did 'clean and updated,' only because of what I see. I haven't been on an actual one, but only because of what I see. Like I see them and it looks updated. It looks clean." – Non/Lapsed Rider*

Some in the Non/Lapsed groups associate public transportation with something that is not for them or something they don't want to do, expressing that they would prefer to drive or use Uber.

> *"I put down 'not for me,' I have a coworker who takes the ART bus a lot and she's always looking at the computer to see when it comes so she can get out of the office." – Non/Lapsed Rider*

> *"I put I'd rather drive/Uber." – Non/Lapsed Rider*

Interestingly, this attitude that public transportation is 'not for people like me' was visible in the Current Rider group as an opinion or bias these participants reported hearing from those around them.

> *"I think there's people here that it didn't matter how good the public transportation is that would not give up their cars." – Current Rider*

> *"I remember when I worked in McLean one time, and I took an awful ripping from the people I worked with, because I rode the bus from McLean to Arlington, see. They said, 'Oh, only you know, and you know ride the buses.' And I said, 'Well, I don't care. I ride the buses. I've ridden buses all my life. I ride buses. I ride trains.'" – Current Rider*

This sense that only a certain group of people ride the bus is why one participant suggested that the buses need a more diverse ridership – with people from all different racial and socioeconomic backgrounds. Although, another disagreed and felt that the system is already very inclusive.

Results from Spanish-speaking Participants

Participants in the Spanish-speaking focus group approached this activity differently. Rather than list adjectives that describe features or qualities of public transportation, these participants tended to write phrases that describe how their life is impacted by public transportation. Some made connections with the specific bus or route they frequently use, while others made connections with their trip purpose.

> *"When you say 'transportation' I only think of the 41 bus, which is the one I travel on every morning, and it works very well for me. It's always on time. I always take it at 7:15 am and it comes, 7:15, 7:16, one or two minutes, I don't think it's too much wait, I think it's good." – Spanish-speaking participant*

> *"I think that transportation for me it's to work, right? … you need to be able to … find the way to get to your job as soon as possible, right?" – Spanish-speaking participant*

> *"What came to my mind was the name of the bus, "ART", and I always think of a driver who drives the 41 Route whose name is [Name]. That gentleman, but the service that man gives is excellent. He is always on time, he is always with a smile, always welcomes people, it's incredible the service that this man gives." – Spanish-speaking participant*

A specific theme that arose in the Spanish-speaking group is the frustration with the accuracy of real-time information. When many of these participants think of public transportation in Arlington County, they think of their experiences waiting for the bus and having information of poor quality about the status of the bus.

> *"The GPS. Sometimes it shows me it will be a while. Sometimes it says, 'two minutes,' and when it gets to that time, it says '1 minute' after that… I don't know how it is that this works. Because sometimes it's like it's going to come and sometimes it doesn't…" – Spanish-speaking participant*

> *"Too much waiting time. There are times when it's up to half an hour and it doesn't come. And it's true. I also use the GPS and it tells you that in five minutes it will arrive, and 10- or 15-minutes pass until I've had half an hour wait." – Spanish-speaking participant*

> *"I wrote 'too much trouble.' Trouble because when you turn on the GPS, it says one or two minutes left for the bus to arrive but it isn't true…" – Spanish-speaking participant*

Table 1: Associations with Public Transportation in Arlington

Non/Lapsed Riders			Current Riders		
Positive	**Neutral**	**Negative**	**Positive**	**Neutral**	**Negative**
Accessible	ART bus	A long wait	Adequate	ART (2)	Anger
Affordable	Green buses: artistic name, odd-looking buses	Blocking	Affordable	Orange Line	Annoyed
Available	Green bus	Bus breaking down	Car-free	Ballston-Rosslyn Corridor	Cluster
Cheap	Always room for improvement	Busy (2)	Clean (2)	Columbia Pike bus shelter	Delayed
Clean (2)	Orange Line	Cards are a pain	Convenient	Metro	Need more bus routes
Clean buses	Yellow Line	Chaos	Convenience		Need more diversity
Consistent	Unknown	Crowded	Easily accessible		
Dependable	Not familiar	Dirty buses (smelly)	Expanding		
Easy access		Impatient	Good service		
Efficient		Interesting riders	Inclusive		
Friendly people		Loser-cruiser	Lots of stops		
Good		Metro should be cleaner	Many buses		
Green		Missing lights	Options		
Lots of choices		Never a dull moment	Pervasive		
Mostly friendly drivers		Not enough	Reliable (4)		
Mostly on-time		Not for me	Safe		
No smells		Not on my schedule	Upgraded		
Organized		Packed	Varied		
Prevalent		Rather drive/Uber	Variety		
Punctual arrival		Running late to work			
Reliable		Runs late unless you look online to get the real-time			
Smooth		Seats are uncomfortable			
Updated		Slow			
		Sometimes bad service			
		Traffic (2)			

MODES OF TRANSPORTATION

Non/Lapsed Riders

The Non/Lapsed participants are heavy drivers with about one-half also using Metrorail and/or Metrobus in a typical week. Most of these participants also walk, and many use a ride-hailing service.

While about one-half of the Non/Lapsed participants cited using Metrobus in a typical week, the others shared that it has been a very long time since they've used a bus of any kind, at least a year for many. Notably, during conversations about public transportation in Arlington County, the Non/Lapsed riders frequently mentioned that they consider Uber/Lyft as public transportation options.

The participants in the Non/Lapsed groups were easily able to determine what their primary mode of transportation is. Some participants primarily use a car, while others primarily use Metrorail. However, some were unable to identify a singular mode as their primary mode of transportation, explaining that they use their car and Metrorail equally.

Table 2: Modes of Transportation Non/Lapsed Riders Use in a Typical Week

Non/Lapsed Riders	
Total Participants	**16**
Walking	12
Driving your car alone	11
Driving your car with passengers	11
WMATA Metrorail	10
Using a ride-hailing service like Uber or Lyft	8
Riding in a car as a passenger	7
WMATA Metrobus	7
Bikeshare/Riding a bicycle	4
Carpooling or vanpooling	2
Virginia Railway Express (VRE)	2
Dockless bike	1
Fairfax Connector	1
Taking a taxi or limousine	1
ART Bus	-
DC Circulator	-
Riding a motorcycle	-
Scooter	-

Current Riders

The Current Rider participants all use ART in a typical week, and the majority also use Metrobus. However, it does not seem that they depend on public transportation alone, as most also drive in a typical week. About one-half of these participants use a ride-hailing service in a typical week as well.

The participants in the Current Rider group were less easily able to identify what their primary mode of transportation is. These participants shared that the modes of transportation available to them are either interdependent or they select which to use based on the conditions of their trip. Therefore, they could not pick just one as their primary mode of transportation. Instead, they identified their primary combinations. For example, some use a combination of bus and rail, while others use car and ride-hail or bus and train.

"It just depends on what's going on at the moment." – Current Rider

"Metro or Uber, depending on the urgency." – Current Rider

Table 3: Modes of Transportation Current Riders Use in a Typical Week

Current Riders	
Total Participants	**8**
ART Bus	8
WMATA Metrobus	7
Driving your car alone	5
Walking	5
WMATA Metrorail	5
Riding in a car as a passenger	4
Using a ride-hailing service like Uber or Lyft	4
Driving your car with passengers	3
Scooter	3
Bikeshare/Riding a bicycle	2
Taking a taxi or limousine	2
DC Circulator	1
Carpooling or vanpooling	-
Dockless bike	-
Fairfax Connector	-
Riding a motorcycle	-
Virginia Railway Express (VRE)	-

Spanish-speaking Participants

The Spanish-speaking participants are a mix of those who use the ART bus and those who do not. A couple of these participants use the ART bus in a typical week, but more use Metrobus and all use Metrorail. All of these participants also walk as a means of transportation. Notably, none of these participants cite driving alone as a mode of transportation.

The Spanish-speaking participants had the same difficulty as the Current Riders when identifying a primary mode, but most tended to choose bus when pressed because it is the most affordable option available to them and/or can bring them to the most places. However, some selected Metrorail as the most important because they're only using the bus as an access mode, but Metrorail is the end-goal for them.

"Me, the bus. Because it's cheaper, which is what all of us are looking for at this moment." – Spanish-speaking participant

"The bus, also because of the price." – Spanish-speaking participant

"Well, the bus helps us and the community, because for example my wife buys the bus pass for the week, which is very affordable." – Spanish-speaking participant

"Because of the cost. I buy the card for the week and I can use all the buses." – Spanish-speaking participant

"First, it is close from where we live, and it can drop us at the Metro; it can drop us at different places." – Spanish-speaking participant

"The bus… Because it has the closest stations to the places where I go." – Spanish-speaking participant

"For the cost and because it's mandatory that I use the bus to get to the Metro. If I, really, if I lived in the corner of the Metro, I wouldn't use [the bus]. But it is necessary." – Spanish-speaking participant

"To me, the primary mode is the Metro. I use the bus to get to the Metro, but for me, the most important one is the Metro." – Spanish-speaking participant

Table 4: Modes of Transportation Spanish-speaking Participants Use in a Typical Week

Spanish-speaking Participants	
Total Participants	**8**
Walking	8
WMATA Metrorail	8
WMATA Metrobus	5
Using a ride-hailing service like Uber or Lyft	4
ART Bus	3
Riding in a car as a passenger	3
Carpooling or vanpooling	2
Fairfax Connector	2
Virginia Railway Express (VRE)	2
Bikeshare/Riding a bicycle	1
Taking a taxi or limousine	1
DC Circulator	-
Dockless bike	-
Driving your car alone	-
Driving your car with passengers	-
Riding a motorcycle	-
Scooter	-

Experiences with Primary Mode(s) of Transportation

Experiences with Cars

Most of those in the Non/Lapsed groups use cars as their primary mode of transportation. Most of the features they like about driving concern convenience and comfort: they like the peace and quiet of being in their own vehicle, they like that they can store goods in their car/it makes shopping easier, they like that they can easily make multiple stops in their car, and ultimately, it gives them a level of control they cannot have with Metro.

> *"I don't mind driving, I like it. I get to listen to my music. I, sometimes I don't listen to any music, just have it quiet and peace within myself. I talk to myself sometimes, or pray. So I feel like I can do a lot in my car. And it's comfortable because I know it's my car." – Non/Lapsed Rider*

> *"It's certainly convenience that you can come and go as you please." – Non/Lapsed Rider*

> *"It's nice to have the convenience of the car, especially if you're going out in the middle of the day and making, going to the bank, and the cleaner, and the grocery store and like that, Metro would be a pain to do that." – Non/Lapsed Rider*

> *"And it's also convenience, like I went to something recently in Fairfax, and then everybody said, 'Oh we're all going out to dinner at some place in Great Falls.' And like I didn't know about that. I'm like, 'Okay that' cool.' So I put it in my navigation, and I went, and got there in my car. Like if I had been taking public transportation I had no idea how to get, I probably wouldn't have gone." – Non/Lapsed Rider*

> *"I'm in control. I'm a control freak. I know if I leave at this time, I can get there in time. Even if I leave ten minutes earlier, I know I'm accounting for traffic and everything, I can depend on myself to make sure I get there safe." – Non/Lapsed Rider*

However, some of the participants in the Non/Lapsed group admitted that their attachment to the car could be psychological and based on familiarity.

> *"Yeah just the peace of mind. Like when I didn't have my car, like I had a whole headache. I felt like I was stuck. Even though I wasn't stuck, I had means of transportation, but when my car was in the shop I was like I can't even go anywhere, because I just wanted my car. And I was so used to just get in and go. And I was like, 'How do people get around without a car?' That's what I asked myself, but it is other transportation that I'm just so used to that, yeah. And when I didn't have a car, like back in the day I used to take the bus, I never thought about a car. But now that I have a car, it's a mind thing, yeah." – Non/Lapsed Rider*

> *"Maybe the old guy here, but for better or worse there's a certain reality to habit. Another thing that's at a slightly more abstract level is having moved here from the west coast and growing up there, I think there's definitely more of a car culture there than it is here." – Non/Lapsed Rider*

While the Non/Lapsed participants also admitted that there are drawbacks to driving a car, like the expense, dealing with traffic, and increased responsibility, it does not appear that any of these factors are enough to convince them to switch their primary mode of transportation.

> *"Yeah, it'd be, that's the one advantage of using public transportation is you can do something else. Like A), I'm going to read a book or something, you know, or listen to music… But usually this doesn't, it's not enough of an incentive to me." – Non/Lapsed Rider*

> *"But you know there is the pain of actually driving. I mean I don't particularly like to drive, but you know, and it's unpredictable. I mean when I do drive and go into town, I'm going right in the middle of town, so I'm not going that far, which can take me ten minutes, or it can take a half an hour or 45 minutes." – Non/Lapsed Rider*

Participants in the Current Rider group tended to cite the more negative aspects of owning a car, including the cost of tolls, parking, and gas. However, they also acknowledged that the car is attractive for its flexibility and convenience.

> *"It's getting worse and worse dealing with traffic." – Current Rider*
>
> *"When I was driving, nowadays, the 66 and route 50, the toll, it's like $7, $10, $18 to ride." – Current Rider*
>
> *"Well, it's so utterly flexible. You go wherever you want to go, whenever you want to go. Totally flexible." – Current Rider*

Experiences with Metrorail

The participants who use Metrorail value it for what it provides that cars cannot – riders don't have to worry about parking, gas, or any of the other stresses that come with a car. Furthermore, these participants enjoy being able to do other things on the trip, like read a book. As one Non/Lapsed participant phrased it, when they take Metrorail, they are 'paying for peace of mind.' However, they also appreciate Metro for the service it provides, calling it consistent, inexpensive, clean, and safe.

> *"It's fairly, to me it's, and I use it fairly often, it's consistent, it's relatively inexpensive, it's relatively clean, it's safe. You don't have to worry about parking, and insurance, and gas, and stuff like that." – Non/Lapsed Rider*
>
> *"It's like it's not our responsibility, you just get on and go." – Non/Lapsed Rider*
>
> *"I can read something while it's, you know, operating." – Non/Lapsed Rider*
>
> *"You're paying for peace of mind." – Non/Lapsed Rider*
>
> *"It's convenient, it's fast. The trains come back to back." – Current Rider*

Non/Lapsed Riders do not like that using Metrorail requires a SmarTrip card, which is notable as this issue also appears throughout this report as a barrier to ART bus usage.

> *"I often forget my card. You know you have to have the card, and I like, I just, whatever it is I sometimes don't carry it around, so… Yeah and so it's like well I was going to use it but I don't have the card so I'll just do something else instead. So, yeah, I think it would be really convenient if you could do it on your phone. I know there are some places that like if you can just take your phone out and pay that way, so that way I would never have to worry about the card." – Non/Lapsed Rider*

Other negative experiences with Metrorail included that it can be crowded, requiring a passenger to wait for a couple trains to pass before being able to board. However, participants acknowledge that when this is the case, service is typically so quick that another train arrives within the next few minutes.

> *"Certain times of day, certain stations you may, it's so crowded that you may have to let a train or two go by before you can actually get on the train. Although at the other side of it, at that time of day if it's that busy the trains are coming every… Couple, three minutes, four minutes." – Non/Lapsed Rider*

Participants in the Current Rider group shared complaints about the hours of service, feeling it is unacceptable for service to be so limited.

> *"For a world-class city, the fact that the service ends at 11:30 on a week night, it's just unacceptable." – Current Rider*

"It's the capital of the world. I think it should be that our train system is available a little longer…" – Current Rider

Participants also felt that Metrorail is not the ideal mode of transportation when running errands that involve multiple/large packages, or when someone is feeling under the weather.

"So if I'm ever like not feeling well or anything, it's like I don't want to take Metro." – Non/Lapsed Rider

"I think you've got a lot of items in your hand, or like groceries, I would not take the Metro because that's just too much." – Non/Lapsed Rider

Experiences with Buses

While not able to comment on ART, the Non/Lapsed riders were able to share some experiences with Metrobus. Feedback was limited, but participants mentioned that the Metrobuses are typically clean and fairly consistent.

"It's clean." – Non/Lapsed Rider

"Fairly consistent like on what time, every 15 minutes. You can count on it." – Non/Lapsed Rider

However, the Non/Lapsed riders shared the same complaint about payment options for Metrobus that they shared for Metrorail – they often don't have a SmarTrip card on them, which makes paying the fare difficult.

"I never have exact change. I rarely carry change for the bus, so if they had like a credit card reader where they can just punch in $2 or whatever. [Moderator: Do you have a SmarTrip card?] There's no money, if I don't have any money on there, if I don't have any like cash, or let's say if I don't have it with me." – Non/Lapsed Rider

Participants once again mentioned the amount of buses in Arlington County when discussing their experiences with this mode of transportation. Participants in the Current Rider group praised the bus systems in Arlington County for the number of options, the quality of the buses, and amount of service provided.

"Yeah, there's a lot of options." – Current Rider

"Well, it depends on the route. Columbia Pike, you got buses like left and right." – Current Rider

"Lots of service." – Current Rider

"I think a positive is they have a lot of new buses and they're all up to date." – Current Rider

Two participants praised the County for listening and responding to customer complaints.

"One thing I'll say is I used to live in Shirlington, and I complained repeatedly, I even talked to one of the county board members about the service there and lo and behold, it's much better now than it used to be. Somebody was listening to those people. It's really an improvement." – Current Rider

"And people complained, because when ART… ART is instituting new service and they're not following the exact same routes, so some people who were getting it to go to work couldn't, so Metro is going to keep running their 22 and ART is going to run their 77." – Current Rider

However, participants mentioned that more routes would be helpful, especially when moving beyond the main corridors in Arlington or out towards Reagan National Airport.

"I think there could be some more routes." – Current Rider

"[Participant 1: But if you get a little deeper in Arlington, then it gets…] [Participant 2: They start slowing down.]" – Current Rider

"We really don't have bus service to National Airport, given that National Airport is in Arlington." – Current Rider

Experiences among Spanish-speaking Participants

The conversation among the Spanish-speaking participants took a different tone than among the other groups. When asked about their experiences with their primary mode of transportation (for most, the bus), many participants shared feeling discriminated against by either the bus drivers or the other passengers. However, they usually added the caveat that some people and experiences are good, and others are bad.

Some participants felt that sometimes the bus drivers treat them differently because they are Hispanic. One said the bus drivers ignore them, while another said the bus drivers speak to them differently.

> *"Yes, in public transportation there is, as she says, there are drivers who are good, but there are drivers who are racist. Because, for example, sometimes you get to the bus station and you are running behind, even raising your hand, and sometimes they ignore you if you are Hispanic, I don't know if they see on the mirror or pretend not to realize, but they leave fast and they don't stop." – Spanish-speaking participant*

> *"But maybe also for the drivers to be more patient and have better manners because it's true that when you're Hispanic they treat you differently…" – Spanish-speaking participant*

One participant suggested having a cross-cultural training to help reduce conflict between the Latino community and the bus drivers. For example, classes to teach customers the proper time to arrive and how to pay would make the transaction easier for everyone. Simultaneously, they suggested training bus drivers to be patient when people are confused or do not know how to pay.

> *"But maybe there would have to be a program for both sides: for the Hispanic, and I represent the Hispanic community and I speak for that because I suffer this every day, so maybe an education program about when to get to the bus, maybe five or ten minutes before, ahead of time." – Spanish-speaking participant*

Some participants feel a level of discomfort not just on the bus but in Arlington County in general, because they feel that others view them as 'intruders.'

> *"Arlington has grown a lot and the people have changed. There's always been diversity but now there are more white people… I feel things have got too be very expensive and many of the gringos (white people) are crossing, and this for them, and with this area even more, like Rosslyn, oh, this is theirs, and when you get on their buses, they let you know it is theirs. They let you know as if you are an intruder." – Spanish-speaking participant*

> *"But that's as a Hispanic person. I also want to say, racism isn't only on transportation. It's in general in Virginia." – Spanish-speaking participant*

> *"They make assumptions… That because you are Latino, they assume you are a fool. That one is a fool." – Spanish-speaking participant*

One participant explained that Hispanics and Latinos in the area who speak English well are treated better than those who do not.

> *"I've seen good treatment and bad treatment, so I think that they sometimes make assumptions. They assume that because you're Hispanic, they think that since there are some who don't speak English, then some are treated badly." – Spanish-speaking participant*

> *"[Moderator: But what I'm hearing from you is that you feel that, because you speak English bus drivers treat you better? But you do see and observe that the Latinos who don't speak in English are treated badly?] … Yes." – Spanish-speaking participant*

However, some positive experiences were also shared, including feeling satisfied with the level of service they receive and with the quality of customer service offered by the bus drivers.

> *"I do feel satisfied because it is a benefit. I call it a benefit because that way, you use the bus a lot, and it is very cheap." – Spanish-speaking participant*

> *"I feel good because the driver gives good service. So, other rides say the same thing not just me. People that take this bus and comes across that driver says, 'this guy is out of the ordinary.'" – Spanish-speaking participant*

Words Describing ART, Metrobus, and Uber/Lyft

The participants in each focus group completed an activity that required them to identify the words or phrases that they think accurately describe ART, Metrobus, and Uber/Lyft. Metrobus and Uber/Lyft were selected as competitors to evaluate a) how perceptions and experiences with ART compare to those of another bus system and b) how perceptions and experiences with ART compare to a service that competes for the same trips. Each participant reviewed a list of words and circled the ones that they felt described the specified mode and crossed out the words that did not describe the mode. The words available to each participant were:

Too slow	*Convenient*
Comfortable	*Safe*
Helpful operators	*Inconvenient*
Dirty	*Clean*
Low-cost compared to other modes	*Reliable*
Overcrowded	*Expensive*
Courteous operators	*Goes to the places I need to go*
Stops close to my starting point	*Environmentally friendly way to travel*
Stops close to my ending point	*Enough seats*
Good Wi-Fi	*Real-time information available*
Easy to use	*Direct route*
On-time	*Frequent delays*
Fast	*Dangerous*
Available schedule fits my needs	*Rude operators*

Non/Lapsed Riders

Among Non/Lapsed Riders, no one word was consistently circled for all three modes of transportation tested. Furthermore, these participants did not use any of the same words to describe both ART and Metrobus. However, there are some visible places of overlap between ART and Uber/Lyft. These participants describe both ART and Uber/Lyft as 'clean,' 'reliable' and 'comfortable.' While 'easy to use' was not one of the top words circled for ART, it does appear for both Metrobus and Uber/Lyft, suggesting an area where these competitor modes have an advantage.

Current Riders

Among Current Riders, there were two phrases that were used by most participants to describe all three modes: 'convenient' and 'stops close to my starting point.' There were two words that most participants only used to describe ART: 'clean' and 'on-time.' Notably, none of the top words circled for ART have negative connotations. The two words most participants used to describe Metrobus were both negative: 'too slow' and 'frequent delays.' Most of the words circled for Uber/Lyft were also used to describe ART; the one word unique to Uber/Lyft is 'fast.'

Spanish-speaking Participants

Among Spanish-speaking participants, there was overlap between all three modes for most of the top words circled. These participants think of all three modes as 'clean,' 'safe,' 'comfortable,' 'goes to the places I need to go,' 'convenient' and 'easy to use.' There was no one unique word used to describe ART. Rather, these participants think the following three phrases describe both ART and Metrobus: 'enough seats,' 'available schedule meets my needs' and 'low cost compared to other modes.' They think both ART and Uber can be described as 'fast' and 'helpful operators.' Notably, Uber/Lyft was the only mode that had top words unique to this service; these words were 'expensive' and 'direct route.'

ART is…

More than one-half of the participants in each segment circled 'clean,' 'safe,' and 'comfortable' as words that accurately describe the ART bus. Among Non/Lapsed Riders, these words were selected because they have observed these characteristics from afar or assumed these to be true based on their preconceptions. Interestingly, some of these preconceptions are informed by their opinions of Arlington County itself (i.e. Arlington County is clean and safe, so the bus system must be too).

> *"I put safe too, clean, comfortable, expensive… [Moderator: How do you know they're clean?]… I just assumed…" – Non/Lapsed Rider*

> *"Safe, comfortable, expensive… [Moderator: Comfortable, why do you think it's comfortable?]… Once again, the county and the bus itself, it just seems like a specialty bus. I'm assuming that it's new, new build, they took their time with it type thing." – Non/Lapsed Rider*

While the words Non/Lapsed riders circled most often for ART bus are positive, it is useful to examine the positive words they did *not* circle to examine where there is opportunity for ART. For example, 'easy to use' was not

frequently circled by the Non/Lapsed Riders; more education or information could help to change this perception. They also did not circle 'convenient,' 'on-time,' 'stops close to my starting point,' 'fast' or 'available schedule meets my needs.'

Specifically looking at responses from Current Riders, these participants also circled 'convenient,' 'reliable,' 'environmentally friendly,' 'easy to use,' 'stops close to my starting point,' 'on-time,' 'enough seats,' 'direct routes,' and 'available schedules meet my needs.' It is noteworthy that many of the words Current Riders use to describe ART are not words that Non/Lapsed Riders use, suggesting either a gap in perception and reality or a completely different set of experiences and expectations that separates these two groups.

> *"Environmentally friendly when you travel, because you're eliminating the emissions and that." – Current Rider*
>
> *"They use clean gas." – Current Rider*
>
> *"Stops close to my starting point, yeah, half a block from my apartment." – Current Rider*

Notably, 'goes to the places I need to go' was not selected by most participants as a phrase that accurately describes ART, but it was selected for both Metrobus and Uber/Lyft.

*Table 5: Words and Phrases that Describe ART**

Non/Lapsed Riders	Current Riders	Spanish-Speaking
Clean	Clean	Clean
Low cost compared to other modes	Convenient	Safe
Reliable	Reliable	Comfortable
Safe	Environmentally friendly way to travel	Enough seats
Comfortable	Easy to use	Available schedule meets my needs
	Safe	Low cost compared to other modes
	Stops close to my starting point	Goes to the places I need to go
	Comfortable	Convenient
	On-time	Easy to use
	Enough seats	Helpful operators
	Direct route	Fast
	Available schedule meets my needs	

*Top mentions: words circled by approximately two-thirds of participants

ART is not…

The only word that all three groups felt did *not* describe ART was 'dirty' – in fact, this was the only word crossed out by about two-thirds of Non/Lapsed participants.

Current Riders also do not feel that ART is 'overcrowded' or 'inconvenient.' Notably, the only positive descriptor the Current Riders crossed out frequently was 'fast.' More than one-half of participants in both the Rider and Spanish groups crossed out 'dangerous,' 'expensive,' and 'rude operators.'

*Table 6: Words and Phrases that do not Describe ART**

Non/Lapsed Riders	Current Riders	Spanish-Speaking
Dirty	Dirty	Dangerous
	Dangerous	Expensive
	Rude operators	Dirty
	Overcrowded	Rude operators
	Expensive	
	Fast	
	Inconvenient	

*Top mentions: words crossed out by approximately two-thirds of participants

Metrobus is…

Only one phase was circled by the majority of Non/Lapsed Riders. This group believes that Metrobus is 'easy to use,' but there is no consensus when it comes to any other words or phrases that might be used to describe it.

Among the Current Riders and Spanish-speaking participants, there was more agreement. More than one-half of these participants circled 'goes to places I need to go,' 'stops close to my starting point,' 'stops close to my ending point,' 'convenient,' 'safe,' and 'enough seats.'

*Table 7: Words and Phrases that Describe Metrobus**

Non/Lapsed Riders	Current Riders	Spanish-Speaking
Easy to use	Goes to the places I need to go	Goes to the places I need to go
	Environmentally friendly way to travel	Available schedule meets my needs
	Too slow	Stops close to my starting point
	Stops close to my starting point	Stops close to my ending points
	Stops close to my ending points	Safe
	Convenient	Clean
	Frequent delays	Comfortable
	Safe	Low cost compared to other modes
	Enough seats	Convenient
		Enough seats
		Easy to use
		Real time info available
		Reliable

*Top mentions: words circled by approximately two-thirds of participants

Metrobus is not…

No one word or phrase was consistently crossed out across all three segments. Non/Lapsed participants do not think Metrobus is described by these words or phrases: 'on-time,' 'expensive,' and/or 'available schedule meets my needs.' On the other hand, Current Riders frequently crossed out 'fast,' 'dangerous,' 'good Wi-Fi,' and/or 'inconvenient.' Spanish-speaking participants do not think Metrobus is 'dangerous,' 'dirty,' or 'on-time.'

*Table 8: Words and Phrases that do not Describe Metrobus**

Non/Lapsed Riders	Current Riders	Spanish-Speaking
On-time	Fast	Dangerous
Expensive	Dangerous	Dirty
Available schedule meets my needs	Good Wi-Fi	On-time
	Inconvenient	

*Top mentions: words crossed out by approximately two-thirds of participants

Uber/Lyft is…

About two-thirds of participants in all three segments agree that Uber is accurately described by the words and phrases 'comfortable,' 'easy to use,' 'convenient,' 'fast,' 'goes to the places I need to go,' 'reliable,' and 'direct route.'

*Table 9: Words and Phrases that Describe Uber/Lyft**

Non/Lapsed Riders	Current Riders	Spanish-Speaking
Comfortable	Convenient	Comfortable
Easy to use	Easy to use	Convenient
Available schedule meets my needs	Stops close to my starting point	Easy to use
Real time info available	Comfortable	Clean
Convenient	Available schedule meets my needs	Expensive
Fast	Fast	Helpful operators
Goes to the places I need to go	Goes to the places I need to go	Fast
Reliable	Reliable	Goes to the places I need to go
Stops close to my starting point	Stops close to my ending points	Reliable
On-time	Direct route	Direct route
Stops close to my ending points		Safe
Direct route		Real time info available
Clean		
Courteous operators		
Enough seats		
Helpful operators		

*Top mentions: words circled by approximately two-thirds of participants

Uber/Lyft is not…

About two-thirds of participants in all three groups crossed out 'overcrowded' and 'inconvenient.'

Table 10: Words and Phrases that do not Describe Uber/Lyft

Non/Lapsed Riders	Current Riders	Spanish-Speaking
Overcrowded	Overcrowded	Too slow
Good Wi-Fi	Inconvenient	Low cost compared to other modes
Too slow	Dirty	Overcrowded
Inconvenient		Inconvenient
Rude operators		Rude operators
Dirty		Dangerous

*Top mentions: words crossed out by approximately two-thirds of participants

Choosing between Modes of Transportation

When choosing between the various modes of transportation available to them, the participants mentioned several factors that they take into account, including time, destination, and parking.

For some, time is one of the most important factors.

> *"I think time also plays a factor, like if you're in a rush, and you need to get somewhere fast, you may just probably drive yourself. Or if you're in a rush and there's a lot of traffic, or you don't want to deal with parking but you're going to an event in D.C., then you probably do Uber or Lyft and just hop out the car. So I think time plays a factor." – Non/Lapsed Rider*

> *"The most important thing is time. I mean we can, we've mentioned a few different variables involved, but for me it's like 95% time, everything else is minor stuff comparatively…" – Non/Lapsed Rider*

> *"Well I just kind of, I'll think about it like, you know, okay I have to go to this particular place, what are the choices? So it's like okay I could drive there in 40 minutes, but it's going to take me 15 to find a parking spot, so, you know, I don't know. On occasion it's like I've got to get there quickly so that's why I'll take an Uber. But if I don't have to get there quickly maybe it's like I won't really bother with it. So, yeah, it's, it just depends on the situation which for me it's mostly about fitting in the schedule." – Non/Lapsed Rider*

> *"In a scenario like tonight, I had time on my side, so I was already planning to take Metro, but had something happened and time was not on my side, I would have driven." – Current Rider*

> *"I do the next bus usually, because for me sometimes, that's a difference between walking or taking the bus. It's kind of which is going to come faster. If it's going to be a 20-minute wait for the next bus, honestly, I'd rather walk. So I do use the bus each day, the next bus thing." – Current Rider*

For others, the destination drives mode choice.

> *"Well, it depends on where I'm working. If I'm working, let's say, in Reston, I'll drive because it just makes more sense for me to drive than to take multiple pit stops for the Metro. Or if I'm working in D.C., I'll just hop on the bus maybe to the Pentagon and just catch the Metro that way. So, it's 50/50, it just depends on where I'm at." – Non/Lapsed Rider*

The amount of traffic and lack of parking in the area encourage people to use public transportation. This is especially relevant on evenings when sporting or other events are occurring.

> *"Yeah, I work in D.C. as well and I like to use Metro, too, because parking is horrible, especially during rush hour time, and it's just easier." – Non/Lapsed Rider*

> *"I'm going to something next week on Capitol Hill in the evening so I think I'm going to have to take the Metro so parking will be impossible." – Non/Lapsed Rider*

> *"Yeah and like when there's a concert or something going on you definitely want to take public transportation." – Non/Lapsed Rider*

> *"Parking in D.C. can sometimes run you like $15, $20. Then you go back to Metro, like all the garages right here were $10. I'm like, "I'm not paying $10 to park my car." So then you go back to Metro." – Current Rider*

One participant highlighted that a person's access to the various modes available in Arlington County depends on their income.

> *"Also, depending on like, there's a lot of social incomes. There's a lot of income factors with this, so depending on your income bracket, your accessibility to certain things, transits, it's limited because of your ability to afford it. That's why a lot of people ride the bus." – Current Rider*

Those with children explained that they are less likely to choose public transportation because of the responsibilities that come with being a parent.

> *"I think if you have a family, it's reliable to have a car." – Current Rider*

> *"I don't know, maybe I'm just a little paranoid, but I don't want to feel like trapped on the Metro or in a bus with my three-year old." – Non/Lapsed Rider*

A less tangible factor mentioned was the social influences that encourage the use of public transportation. For one participant, her upbringing normalized the use of public transportation. She grew up seeing, and eventually emulating, the behavior demonstrated by her mother.

> *"I know this is a very silly thing to say, but I think there may be a genetic component, and I inherited the public transportation gene from my mother, because I guess, my whole life she was always going everywhere on the bus, any strange city or whatever… she would get all around the city by public transportation and I definitely inherited that gene." – Current Rider*

Changing a Primary Mode of Transportation

Many participants across all three segments of focus groups shared that they have had experiences or changes in situations that have influenced the primary mode of transportation they choose. Themes such as cost, job location, schedule changes, and separation or divorce arose as events that impacted their mode choice.

One person realized that they could not afford to drive a car because of their income level, so they switched to using public transit. Another said they used to use the Metro but it became too expensive, so now they take the bus.

> *"I will say that I kind of fell into this transit thing easily, because the business I was in most of my working life didn't pay. It was a great business and I loved it. I really loved it, but it didn't pay. So I tried driving a car for four years until I realized I was bankrupting myself on my measly pay and I got rid of it and went back to riding transit." – Current Rider*

> *"Well, something has changed because the economy has changed, and one has to look for what is less costly, my first job is in McLean, so for me to get to the metro, I had to use the 41 bus and then take the Silver line and get to McLean… to take the Metro [it's] $3.90 a ride, it's difficult, I mean, it gets inflated. So, I stopped using the metro unless it's something extremely urgent where I must be at a place at a certain time. But I try to stick to the bus as my primary mode of transportation." – Spanish-speaking participant*

Others cited changes in their job or schedule as the impetus for mode change.

> *"With me a lot of it just depends upon what I, what my routine is, you know. When I've, over the years when I've worked at places where I could take Metro, or some kind of public transportation I would… Your routine changes and you, I'm sure you're probably going to consider different ways to get there." – Non/Lapsed Rider*

> *"Change, in my case, I used to use the ART bus. I used to use it when I worked in Crystal City to go to work. But I had two different times I had to be at work, and the one time it didn't matter so much when I got there, if that makes sense. I wasn't on the exact sort of time, just sort of a range of time I guess. So if the bus was a little before, or a little after I wasn't as concerned, whereas at the other time of day I had to be a much more exact time, so I would do something a lot more, that I had a little more control over. A lot of it again is just situation, you know. My situation allowed me to do it at the time. If my situation changed then I might consider it again." – Non/Lapsed Rider*

> *"Wells, it depends on the location that you work because that has affected me, I mean, that has changed for me. For example, before I was working in Wheaton. So, I had to take the Red line, and I had to take the bus sometimes, to go to the Ballston station… But I don't work in Wheaton anymore, thank God. So that changes. It depends on the location*

of the workplace. I also worked where the Arlington hospital is, so I used to take the 51 bus sometimes, too. I also worked in the Dulles airport so, sometimes I had to go to the Ballston station to take the Orange line, and I always had to be figuring it out and look for alternate routes. I also worked in Washington. So, my route has always changed depending on my job location." – Spanish-speaking participant

"My job is drive, to get to my job I have to drive. But I mean whenever I have the option, when I worked in places near I would transportation, I would take it every day." – Non/Lapsed Rider

For one woman, separating from her husband caused her to use more public transportation because he used to be the primary driver in their household.

"When I was married, my husband [used] to drive… Now, I take the bus and the Metro to go to work in DC." – Spanish-speaking participant

One participant shared that when they were new to the area, they used Uber to get everywhere, but once they became more familiar and learned how to use public transportation, they switched to the bus because it was less expensive.

"When I had just arrived in this country, I used Uber for the first two months. First, because I didn't know how to use the transportation system in this country. The system in my country is different, to me it was easier go around in Uber but it was getting too expensive. It was seven dollars for each ride. So, every day, it wasn't convenient at all and I checked with my friends and relatives, they taught me to use the bus and the closest route to the station, and obviously it was cheaper. And so, quickly, I switched to bus and stopped using Uber." – Spanish-speaking participant

LOYALTY

Loyalty among Non/Lapsed and Current Riders

The participants were asked if they felt 'loyal' to their mode of transportation. None of the participants involved in this research demonstrate a sense of loyalty towards any one mode of transportation. The participants in the Current Rider group feel they have a 'transportation buffet' available and they take advantage of those options to select the mode that is best suited for the conditions of their trip. In fact, they are so non-committed that even if they are waiting at the bus stop for an ART bus, they'll get on a Metrobus if it happens to arrive first.

> *"We're non-committed. Transportation buffet." – Current Rider*
>
> *"I have driven to work, and taken the train home, and then in the middle of the night took an Uber back to get my car, because traffic is just ridiculous or went back on the bus the next morning…" – Current Rider*
>
> *"I'm not loyal." – Current Rider*
>
> *"I sometimes switch between the train and the 38 bus, which goes into the city, so it depends on how much time I've got." – Current Rider*
>
> *"I actually was waiting for an ART Bus, but the Metrobus came first, so I took that to Ballston." – Current Rider*
>
> *"I have a choice, where I live, I can take the 41, the ART 41, or I can take the Metro 22 from my apartment to Ballston. Okay? There's different routes, same fare, 41 is more frequent, 22 is faster. It depends on who's leaving first. More often, the 41 will be leaving first, because it's more frequent, but if I can catch the 22, it's going to get me here in about 10 minutes less time" – Current Rider*
>
> *"It's whatever is convenient. For me there's no loyalty." – Current Rider*

Reactions to a Rewards or Loyalty Program

Reactions to a loyalty program were mixed. Some Current Riders like the idea of a loyalty program, but they were unsure if it would change their behavior. One person said that a rewards program would incentivize them, while another said that efficiency is more important than rewards, and yet another said a break on fares in general would be more attractive.

> *"I love rewards. I love incentives, because I can do a variety of things." – Current Rider*
>
> *"I'm doing it the most efficient way I can all the time anyway." – Current Rider*
>
> *"Just getting a break on the fare is enough for me." – Current Rider*
>
> *"If you can save $0.50 each trip, if you can save $1 a day, that's $5 a week. I think people like money in their pockets now versus the reward program." – Current Rider*

The Non/Lapsed participants were not drawn to the idea of a rewards program. One participant surmised that it would incentivize people already using the bus more than it would attract new users.

> *"But that would be nice for the people who are already using the bus. It's not for new people." – Non/Lapsed Rider*
>
> *"I don't think I want to be a loyal member either…" – Non/Lapsed Rider*

When imagining rewards program incentives, Current Riders suggested offering a free ride for meeting a goal. For example, the system could offer free rides for riding ART a certain number of times per week, or every tenth ride on ART for free.

"Getting a free ride for riding it for a certain number of times in a week would be cool." – Current Rider

Loyalty among Spanish-speaking Participants

The Spanish-speaking participants approached discussions on loyalty a bit differently. For these participants, their loyalty is not a choice– many feel their current mode of transportation is the only option they have.

The Spanish-speaking participants also approached how they would like to be rewarded for this loyalty differently than the other participants. These participants did not mention any of the tangible rewards that others did, like points or free rides, instead, they would like to be rewarded with good service and schedules that meet their needs. The desire for more buses is particularly visible among those who work off-peak hours when there are fewer buses available.

"With good service on the buses. With punctuality and with timeliness. Punctuality and timeliness go together. As well as treatment. Because you know that if you're treated badly you never come to that place." – Spanish-speaking participant

"I'd like to be rewarded with good service and I'd also like to be rewarded like, okay, if I'm going to pay for a service, there could be more routes, for example. Or, for example, one of the things that bothers me is the schedule on Sundays. To wait an hour for the bus to arrive, when we work on weekends, the same as during the week." – Spanish-speaking participant

"There are people who work on the weekends. I work on the weekends. So, sometimes, what happens, I mean, they're increasing the fare for me because, before, we used to pay $1.50 and now we pay two dollars. And, I don't know, maybe there'll be another increase in the future. But if they're increasing it for me, I'd like there to be more buses…" – Spanish-speaking participant

"Another thing that I'd like is for the schedules to be more realistic to our needs –because, if you get off at 10:00 at night, you have to wait until 10:45 for the bus to arrive, but it's like that is not realistic, who's going to get off work at 10:45? Nobody. So, you get off at 10:30 or get off at 10:00 but no one gets off at 10:45 and you're not going to say at work 'I'll leave at 10:45' or that you get off at 11. It makes no sense. If you get off at 11:00, you have to wait until 11:45. If you get off at 10:00, you have to wait until 10:45." – Spanish-speaking participant

CONSIDERING NEW MODES OF TRANSPORTATION

The lack of loyalty explored in the previous section suggests that there is an opportunity to influence or change these participants' choice of transportation. However, when this opportunity was explored in the focus groups, some participants were more open to exploring new modes of transportation than others.

The Non/Lapsed participants have diverse experiences with public transit, which affects their willingness to try new modes of transit or increase their use of public transit.

Those who have used public transit in the past are very open to using it again if their situation changes (for example, if their jobs move to a nearby Metro line).

> *"… if I had a job that was close to the Metro I'd take it as opposed to driving." – Non/Lapsed Rider*
>
> *"If my situation changed then I might consider [ART] again." – Non/Lapsed Rider*

Others are less convinced that public transportation, specifically buses, would be viable. Some of it is attitudinal, believing the bus is only for people who do not have a car or that the bus is less convenient because you have less control over your schedule.

> *"Yeah, the bus is only when you don't have a car." – Non/Lapsed Rider*
>
> *"The buses are too much sometimes, just… When I'm waiting. If you like want to go, you just want to go. Like well I'm ready to go right now, the bus isn't going to be out there waiting for me." – Non/Lapsed Rider*
>
> *"There's a Metro station right off of the place where I work at, but I'd rather drive. I try to avoid public transportation. It's just convenient, not because of the money or anything, the gas money, but it's just convenient for me to drive somewhere and to work and then if I need to go somewhere else after work it's just…" – Non/Lapsed Rider*

Barriers to Public Transportation

According to the focus-group participants, the largest barrier to attracting new ART riders is a fundamental lack of information or awareness.

Many Non/Lapsed riders do not know where the closest bus stop to their home is, or where the buses go.

> *"It's a mystery…" – Non/Lapsed Rider*
>
> *"Not sure where they go." – Non/Lapsed Rider*
>
> *"Where I live I don't even know where the stops really are for even the Metrobus, I can't even tell. It's, I just know there's a bus and I don't even remember which one it is." – Non/Lapsed Rider*

This lack of knowledge may be perpetuated by the level of comfort a person has with their existing options. If they feel their car is enough, they may never feel compelled to seek out other options.

> *"Once you kind of know what the options are, unless there's a new option there's nothing, you know I kind of feel like I know it's there so I don't really need to, what's there to look into, you know?" – Non/Lapsed Rider*
>
> *"I never even think about that bus." – Non/Lapsed Rider*
>
> *"And I just [like to] stick to what I know. Like I know I can get in the car and go from Point A to Point B without waiting for something to come. So it's just like I'm just used to getting in my car and go." – Non/Lapsed Rider*

Furthermore, the lack of information is compounded by confusion about where to seek out information about public transportation. When asked if they could figure out how to get from Point A to Point B using public transportation, the Non/Lapsed participants demonstrated a lack of confidence.

> *"Well not that fast…" – Non/Lapsed Rider*
>
> *"Not without doing an exhaustive search at home ahead of time." – Non/Lapsed Rider*
>
> *"I would just ask somebody for a ride." – Non/Lapsed Rider*
>
> *"Google…" – Non/Lapsed Rider*

This confusion and lack of awareness can also be seen by participants who recommend implementing or creating sources of information that already exist. One Current Rider expressed interest in a resource that would list information from all systems in Arlington County in one place, and another expressed similar interest in an app that could provide this information. These services are already available via Google or any of the multimodal apps available on a mobile device.

> *"I wish there were, at least for Arlington, it would certainly help me if there were that one stop where WMATA and the ART, if they were all listed. That would seem to be intelligent." – Current Rider*
>
> *"If they have like a newer app but it would, you know one of the things it would probably increase my interest in using public transportation is if there is like an app that says, 'Look, here are all your options, bus, Metro, whatever. Here's where you are, I know your location by your phone. It takes five minutes to walk here,' and just lay it out. So I can say, 'Oh this is the best choice for me' and just boom, do it, you know." – Non/Lapsed Rider*

Another barrier to choosing public transportation includes the time it takes to make the trip.

> *"If I could take public transportation to work I would, but it's kind of not… [Moderator: Have you explored it?] Yeah, there's nothing out there. I mean it would take me an insane amount of time, so." – Non/Lapsed Rider*
>
> *"So, but the Metro just, it was like so long to take the Metro, and then I wound up having a very, very long walk, and it was December and January in the cold, and it just, no. Over an hour to get to some place it would take me 15 minutes in the car." – Non/Lapsed Rider*
>
> *"I want to go from Point A to Point B, and I just care about doing it as quickly as possible. So for me it's like if it takes 30 minutes this way, or 50 minutes, I'm taking the 30 minute approach, and that's usually a car, which is what I, a car. So to me the biggest factor in why I don't use public transportation all that frequently, at least anymore, is that it's just a timing issue. I just don't want to waste an extra 20-30 minutes." – Non/Lapsed Rider*

The perception of Metrorail as expensive appears again here, with Current Riders sharing that the cost of this mode drives them to select other options.

> *"That's why I've actually stopped riding Metro, because where I was commuting from here to D.C., from here all the way out to D.C., I was spending almost $20 a day. I'm like, 'Oh, it's cheaper for me to drive.'" – Current Rider*
>
> *"Yeah, because we're traveling during rush hour. The rush hour is a multiplier of what? Like from Ballston to Tysons during rush hour, it's like $4.80 or even sometimes, even $6… That's $12 a day. If I can take an UberPOOL during one of their specials, I'm only paying $3 and then it will drop me at the door." – Current Rider*

WAYS TO INCREASE RIDERSHIP

Increase Level of Awareness

One of the biggest barriers to using ART found in this research is the lack of awareness and information. In general, people do not seem to know where these buses go, how much they cost, or the level of service they provide. Some participants seemed open to considering ART if there was more information available – they were just overwhelmed by their own lack of knowledge. In fact, a few participants did not know that the ART bus was public transportation at all.

> *"More promotion, more information because I was clueless, like completely clueless." – Non/Lapsed Rider*

> *"[I want information about] the price and location, of course, but definitely the price will get me intrigued. Like, 'Okay, this is affordable. Let me look into it.'" – Non/Lapsed Rider*

> *"Better communication of their routes. I don't know, they can hand out flyers, like, 'You know you can get to this point from this point to this point in 15 minutes.' Now we're like, 'Okay.'" – Non/Lapsed Rider*

> *"At first, I thought it was a bus that went to art school because it's like a strange name for it to be on a bus." – Non/Lapsed Rider*

> *"I first saw it, I thought it wasn't a public transportation bus, it was another thing like for transport for, I didn't think a school, but other things, not really public transportation." – Non/Lapsed Rider*

> *"I think knowing about the bus, period, before you even know about the stops. I honestly thought it was a specialty bus, meaning only certain people get on that bus. You have to have a certain pass or something. Honestly, I didn't know." – Non/Lapsed Rider*

> *"You can do it, there's many different ways. You could do little fun, just giveaways to grab people's attention, flyers to let them know these are the certain routes that you could take from this location. Just more like information, something that's fun." – Non/Lapsed Rider*

Even Current Riders agreed that the information available requires a level of proactivity and familiarity.

> *"But all these [sources of information] require you to be proactive." – Current Rider*

> *"You wouldn't even know the ART existed unless you look for it." – Current Rider*

Ways to Disseminate Information

To reach the public, participants suggest sending an ambassador out to teach people how to use the bus.

> *"I would say like mail a brochure. Like ART's in your area, you know. Nothing too, not a lot of stuff on it. Just a brochure…" – Non/Lapsed Rider*

> *"They can do more community events at Metro stations like, 'This is us.' Have a tent up, give out cards or give out some… Have ambassadors out there talking about it." – Current Rider*

> *"Twice in the last two years, the Arlington Mill Rec Center has had ART orientation, trips, have come and meet the ART people and get on the bus, and ride the bus around just to figure out how it really works and that's very good." – Current Rider*

> *"Maybe that they are there to help new people and teach them how to use the card, how to enter the money, if you have to give change or not… Because it isn't the same if someone explains it to you than if it's written on a board. If someone explains it and gives you an example, you understand it." – Spanish-speaking participant*

Some felt that an attention-grabbing campaign would be a partnership with a local restaurant, store, or attraction.

> *"They've spent a lot of money through the years mailing me things, and I just feel like it's taxpayer money, and I'm not, I didn't use it, so." – Non/Lapsed Rider*

> *"They could work a lot more, and they may do this already, but they could do a lot more work with the community, the business people in general to, you know, as a business promote the fact that, you know, we work with the green buses, or there is a bus stop right here, or something. To make people more aware that the bus is convenient to this, you know…" – Non/Lapsed Rider*

> *"I think it's all about advertisement making awareness, period, like no matter you get the person. I honestly think that the restaurant, the street team, that would just perfect. Like you're already going to that restaurant, and then there's the bus stop right there." – Non/Lapsed Rider*

> *"I think they need to like partner with someone, like Chick-fil-A…" – Non/Lapsed Rider*

> *"The old handouts like if the bus stop was right here, at the little restaurant that's at the corner. You know, something like that to get your attention." – Non/Lapsed Rider*

Others suggested taking the campaign online and buying ads on Google or social media sites like Instagram.

> *"They should just buy Google ads…" – Non/Lapsed Rider*

> *"They have ads on Instagram…" – Non/Lapsed Rider*

Another suggestion was to place the advertisement and information on the bus wrap, which would expose the information to both people driving by in their cars and people walking down the street.

> *"Put it on the side of the bus, on the big buses… The schedule, the times, now running every 20 minutes, something like that. New routes that you've added…" – Non/Lapsed Rider*

Free Trial Days

Most think a 'ride for free' trial day would encourage them to try out the ART bus, but they would not want it to be free for everyone all at once because that would not give them a sense of the normal experience. Instead, a free card to use at their own convenience was more attractive.

> *"If I was going to try it, I want to try it under normal circumstances to see how…" – Non/Lapsed Rider*

> *"Just like a free promotional for people, it really does get people in… people will use it, and if it ends up being convenient they'll continue to use it." – Non/Lapsed Rider*

> *"And I think he's got a good idea because the freebie, especially if you do it in a way which a lot of people have talked about where you don't concentrate it all at one time, or one day, so you spread it out over a week, or a month, or something like that. But it's just a promotion, 'Hey here we are, this is what we do, come down and give us a shot.' So you, they tell you in some fashion 'Here it is, here is how you take advantage of it.' And so you go online, you find out where the bus goes, where it works for you, or how it works for you, and so you give it a shot. And maybe it works, and maybe it doesn't, but it will get more people in the system which is what they're trying to do." – Non/Lapsed Rider*

> *"Maybe like a weekend pass or something like your first time getting on the bus, the first two hours are free or something, you know, to get you to think about it." – Non/Lapsed Rider*

> *"Then I wouldn't feel like rushed or pressured or like I was losing out on money, you know what I mean? I'd only be losing out on my time. I would be able to take my time, I wouldn't be like, 'Oh, I don't know where to go.'" – Non/Lapsed Rider*

An opportunity to ride the bus and try it out may combat some of the psychological barriers that surround bus use. One participant hypothesizes that because Arlington is a transient area, people are arriving with biases based on the bus system they've seen and/or used in other cities.

> *"I mean most of the people who live around here or if not most, close to most of them, are transients. By definition, they move here from other places, and I can't speak from living in so many cities, but most of the previous cities I've lived in like buses in most cities are not that great in one way or another… So, my point is, with so many transients here, even if Arlington or Montgomery County or D.C. has the best bus systems in the world, which I mean they could, because there's so many transients, all those transients are bringing a bias, I think, or more often than not they're bringing a bias here with them from wherever…" – Non/Lapsed Rider*

> *"Well, I do think part of that is also, it's a socioeconomic thing, that some people think that mass transit is primarily for poor people." – Current Rider*

Other Suggestions

One participant took the angle that one way to get people to ride ART more is to differentiate the service from Metrobus. Right now, these participants think of ART and Metrobus as roughly the same, but a reduced fare would swing the pendulum in ART's favor.

> *"If they lower the price, I would make the choice of taking ART instead of the Metrobus." – Current Rider*

> *"If they're trying to service us specifically, yes. A $0.50 difference makes a difference." – Current Rider*

As seen throughout this report, fixing the barrier for payment might increase ridership.

> *"I think coverage is fine mostly, but I think it's what he said with like payment, it's like, I feel like every time I want, I think about it, I'm like, 'Wait where is one of these cards?' I'm like, 'Oh, do I really want to pay another $2 to buy another one of these cards?' … And then if you could just go, and I just tap my phone, like Apple pay or something, make it so much easier, yeah." – Non/Lapsed Rider*

In addition to changing the payment method, some suggested making the entire experience more high-tech – like upgrading the buses and making real-time information more reliable.

> *"…charging stations, Wi-Fi, easy access to payment electronically." – Non/Lapsed Rider*

> *"Another thing I've noticed is that the GPS on ART buses goes off a lot, so they need to make sure that that doesn't happen." – Current Rider*

Expanding the free/discounted transfer window was also recommended.

> *"Like you can swipe it as many times to get to your destination. Now if it only gives you like, you know, you pay once and it only gives you like an hour to get to your destination before they charge you again, you know, that's probably not giving you enough time if you're going like into the city, or using the bus. Not the train. So maybe extending that time instead of putting more buses, and stops around the way because it'll cause more traffic." – Non/Lapsed Rider*

One person suggested manipulating the availability of parking to get people out of their cars.

> *"It's already expensive, but make it even more expensive to get people out of their cars." – Current Rider*

Suggestions from Spanish-speaking Participants

The participants in the Spanish-speaking group had some suggestions to specifically target their community. They feel that the bus system primarily serves their community, so they would like information that caters to that.

These participants would like to see all information also made available in Spanish.

> *"Yes, for example, that they make brochures that are easier to use because those brochures are like, as if they were a map, and they have to be looking at them like, 'no, this is the stop where I am.' For example, I think that if it were simpler and not that complicated, I think it would be more informative and if it were in Spanish, even better." – Spanish-speaking participant*

One participant suggested that communications with more images and graphics than text would also be helpful.

> *"Many times, people don't read it. It's there and they don't read it. Maybe if it's something visual, let's suppose, 'You want to recharge your card?' 'This is your card.'" – Spanish-speaking participant*

Adding more bus shelters and improving the existing ones would also make riding the bus a more attractive venture.

> *"Another suggestion is that I think that all along Pershing Drive, there are very few bus shelters and for example, now that it's cold outside, so you get into the bus shelter a little bit because of the cold. But there are so many stops, so many, along Pershing, where there are no stops that have a bus shelter, only the site." – Spanish-speaking participant*

> *"Maybe if the bus stops could be a little bit more closed, when the time for snow comes, it's going to be colder and you have to walk to the bus stop, which is a little bit open and the cold hits it." – Spanish-speaking participant*

Closing Activity

At the end of each focus group, the participants were asked to work as a group to create a list of five ideas to help increase ART ridership. Notably, all three groups listed mobile/electronic payment and a rewards program as potential initiatives to increase ridership. All three groups also had a suggestion to reach new riders: the first Non/Lapsed group suggested partnering with local employers and businesses; the second Non/Lapsed group suggested advertising on social media and at local destinations; the Current Riders suggested sending a brand ambassador to popular Metro stops to provide information on ART.

Table 11: Participant Suggestions to Increase Ridership

Participant Suggestions to Increase Ridership		
Non/Lapsed Riders (Group 1)	**Non/Lapsed Riders (Group 2)**	**Current Riders**
Implement digital/electronic payment	Rewards program: ride nine times, get the tenth for free	Brand ambassador at popular Metro stops
Free-ride promotion day	More information	Lower fare prices
Loyalty program	Mobile payment	Rewards program for repeat riders
Create bus ratings, like Uber ratings	Advertise on social media and at local destinations (like restaurants)	Service to Reagan National Airport
Partner with employers and local businesses to promote ART and increase awareness	Wi-Fi and charging stations on the bus	A dedicated ART app

4 DISCUSSIONS WITH BUS DRIVERS

BACKGROUND AND OBJECTIVE

The bus drivers who work for Arlington Transit have a unique perspective to provide on the status of the system. On December 6, 2018, a professional moderator from WBA Research hosted three informal dyads and triads with these drivers to investigate if they had insights into the customer experience or why ridership is declining. Overall, 8 bus drivers participated in these discussions.

To help the bus driver participants feel more comfortable sharing their opinions and ensure their anonymity, these sessions were not recorded. Therefore, direct quotes are not available for this segment of the research.

BUS DRIVER PROFILE

Of the eight bus drivers spoken to, the most novice has only been driving for Arlington Transit for 7 months while the most senior has been driving for ART for 13 years. Some of these drivers have only ever worked for Arlington Transit, while others have worked for other bus systems in the area.

ISSUES THEY EXPERIENCE

Mechanical Issues

When asked about the issues they face while driving the bus, almost all of the bus drivers immediately cited mechanical issues. While they feel that the new buses are great, many of the older buses have safety issues – some do not have working horns, or have break issues, broken mirrors, or broken headlights. These issues can be stressful, taking the driver 'out of the zone.'

A mechanical issue that causes confusion for customers is broken headway signs. As described by one bus driver, when the headway sign is broken, it displays the text 'out of service,' to indicate that it needs repair. However, this gives the impression that the entire bus is out of service, creating confusion for the customers.

One mechanical issue that may impact on-time performance is a glitch with the kneel. The drivers explained that when they kneel the bus, they have to completely restart it to continue the trip, causing delays on their trip.

Performance Issues

Delays caused by mechanical issues are not the only challenge bus drivers face; some routes with construction can cause bus drivers to fall up to 20 minutes behind schedule. One driver explained that these delays in schedule can sometimes result in some busses operating at crush load.

Two bus drivers mentioned that issues with the schedule cause them to work without time to take a break. One driver admitted that he will take unscheduled breaks, but then he falls further behind schedule. Another driver says he will work through his scheduled break to try and get the bus back on time.

Passenger Issues

Several bus drivers shared experiences where passengers try to board the bus without paying. According to one bus driver, this is happening so frequently that it is not worth the headache to try and force them to pay. However, the drivers also acknowledge that the farebox on each bus is different – some take cash, and some do not – which could cause confusion for the customer.

Picking up passengers once the bus has already pulled out is another dilemma the bus drivers frequently face. As a rule, the driver is not supposed to pick up any more passengers once they leave the bus stop; however, this can lead to complaints from customers who feel left behind. To avoid the complaint, bus drivers will stop to pick people up even though they are not supposed to. However, one driver admitted that it is hard to see people at night so sometimes customers will be accidentally left at the bus stop.

FEEDBACK FROM PASSENGERS

Based on the feedback from the drivers, the types of customers they see depends on the route – different routes service different populations. However, they do see many regular riders.

Generally, the bus drivers do not hear negative feedback from the passengers about the service provided. As to be expected, customers are happy when the bus is on-time and they are upset when it is late. They believe the customers only notice mechanical issues on the bus when the driver has to stop to fix something, which sometimes leads customers to complain. There are also major complaints about broken A/C in the summer and broken heat in the winter, but that was the most specific feedback bus drivers could recall.

Even though the bus drivers see many of the same riders on their routes, they do not believe the population is 'loyal.' Rather, they feel that the bus is an easy and affordable option, so people choose it, but not with the emotions associated with loyalty. Even though they see the same riders each day, they were reluctant to use the word 'loyal' to describe them.

The drivers did not have many suggestions for ways to increase ridership. In fact, a few drivers said they've never thought about it because their routes are typically full. Although, one driver did suggest that providing better information about the schedule could increase ridership – he believes that people choose Metrobus over ART because it is easier to find information about when and where Metrobus operates.

DISCUSSIONS WITH OPERATIONS/MANAGEMENT STAFF

WBA also had the opportunity to speak with three operations/management staff after speaking with the bus drivers. These employees were relatively new; the longest tenure was 1.5 years and the shortest was just a few months.

When asked what they view as strengths of Arlington Transit, these individuals said they believe the system is better managed than others they've worked with, the system is easy to use, service and coverage is comprehensive, and the relatively small size of the system allows bus drivers and customers to know one another, which adds a personal aspect to the service.

As shared by the bus drivers, these employees confirmed that many of their customers are every-day users. They also see the customer-base as a 'professional' population that expects a high level of service. Unlike the bus drivers, these employees believe that the customers are loyal because there are so many routine users who take ART to get to work. Additionally, they hear customers say "I've been riding ART forever…"

While customers typically say that the drivers are pleasant, these employees do occasionally receive complaints about rude drivers. However, these are few and far between and often due to a misunderstanding. Other complaints include late arrivals, missed trips, the schedule, broken A/C, buses running red lights, and ADA/accessibility complaints.

These employees speculate that the ridership decline is due to the increased availability of ride-hailing services, which provides a faster service than ART can. They also suggest that the number of buses operating in the area may pull people off of ART, but they doubt the decline is due to more people choosing to drive. These employees believe that ART could be improved by adding more new buses to the fleet, improving on-time performance, and adjusting the schedules to mitigate the risk of delays.

5 RESULTS FROM ONBOARD PASSENGER RESEARCH

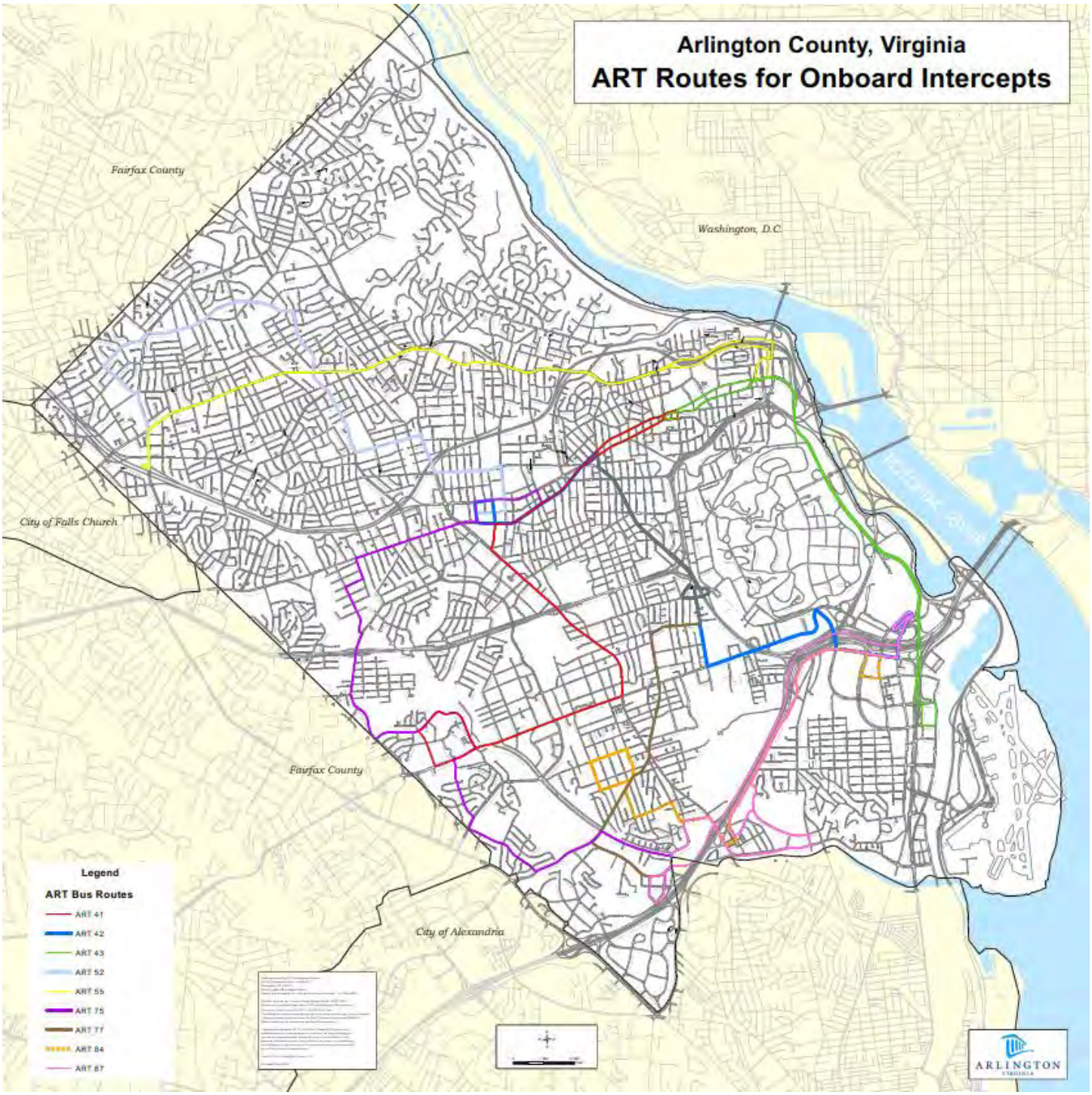
METHODOLOGY

Data Collection

Arlington County was primarily interested in learning about riders across nine ART routes: 41, 42, 43, 52, 55, 75, 77, 84, and 87. Furthermore, Arlington County was more interested in learning about weekday trips than weekend trips. Therefore, preference was given to weekday trips when deciding which days to survey. Prior to data collection, WBA Research developed a sampling plan that calculated the number of interviews that should be completed on each route, proportional to the route's actual ridership. Arlington Transit provided the ridership by route report from September 2018 for the basis of this calculation. Arlington Transit approved the outlined sampling plan prior to data collection to ensure the appropriate data were collected. A detailed breakout of the estimated number of completes per surveyed route is included below, and a map is available on the following page.

Table 12: Sampling Plan

Route	Number of Trips per Month	Share of Total Ridership	Target Number of Intercept Surveys	Share of Intercept Surveys
41	665	29%	272	27%
42	256	11%	98	10%
43	484	21%	222	22%
52	72	3%	56	6%
55	366	16%	122	12%
75	118	5%	74	7%
77	132	6%	53	5%
84	48	2%	20	2%
87	192	8%	83	8%
Total	**2,333**		**1,000**	


Arlington County, Virginia
ART Routes for Onboard Intercepts
Fairfax County
Washington, D.C.
City of Falls Church
Fairfax County
City of Alexandria
Legend
ART Bus Routes
ART 41
ART 42
ART 43
ART 52
ART 55
ART 75
ART 77
ART 84
ART 87
ARLINGTON

From January 23, 2019 to February 11, 2019, WBA's professionally-trained field interviewers administered a ten-minute survey via tablet to riders on nine routes across the ART bus system. On each trip, one WBA interviewer moved throughout the bus randomly selecting riders to be surveyed. Every rider had an equal probability of being selected for participation.

In total, WBA completed surveys with ART riders representing 993 trips across weekdays and weekends.

Table 13: Completed Surveys by Route, Weekend vs. Weekday

Route	Completes	Weekday	Weekend
41	169	119	50
42	126	108	18
43	249	230	19
52	35	35	-
55	165	165	-
75	57	57	-
77	70	70	-
84	20	20	-
87	102	55	47
Total	**993**	**859**	**134**

Respondents were given the option to complete the survey in either English or Spanish. Those who selected Spanish were able to complete the survey independently, rather than administered by an interviewer. In total, 912 interviews were completed in English (92%) and 81 were completed in Spanish (8%).

Table 14: Completed Surveys by Route, English vs. Spanish

Route	Completes	English	Spanish
41	169	143	26
42	126	117	9
43	249	239	10
52	35	35	-
55	165	152	13
75	57	48	9
77	70	64	6
84	20	20	-
87	102	94	8
Total	**993**	**912**	**81**

Weighting

Data expansion factors were developed by route to weight the data so that the final results were representative of ridership at the route level. For example, of the 160,312 monthly rider trips, 52,406 (32.7%) were from Route 41; therefore, the results were weighted so responses from Route 41 represented 32.7% of the final data. The ART ridership for February 2019 was used as the basis of this calculation (due to the government shut down in January 2019, this ridership data was not included in the weighting calculation). The number of trips taken on each route was divided by the number of completed surveys. The resulting factors were applied to each record to create a representative ridership analysis at the route level.

Table 15: Expansion Factors

Route	Completes	February 2019 Ridership	Expansion Factor
41	169	52,406	310.09467
42	126	20,901	165.88095
43	249	15,226	61.14859
52	35	5,790	165.42857
55	165	31,383	190.20000
75	57	8,127	142.57895
77	70	10,453	149.32857
84	20	3,617	180.85000
87	102	12,409	121.65686
Total	**993**	**160,312**	

READING THIS REPORT

Sampling Error

As a result of only a portion of the entire population completing a survey, the data are subject to sampling error. A total of 993 surveys results in a maximum standard error of ±3.1 percentage points at the 95% confidence level. However, depending on the data being examined, the sampling error may be smaller. Sampling errors are shown below at the 95% confidence level for various percentages.

Table 16: Sampling Error

If the percentage found is around:	50%	40% or 60%	30% or 70%	20% or 80%	10% or 90%	1% or 99%
The standard error in percentage points is:						
Total sample (n=993)	±3.1	±3.0	±2.9	±2.5	±1.9	±0.6

For example, if a question yielded a percentage of 20%, then we can be sure 95 out of 100 times that the true percentage would lie between 17.5% and 22.5% (20% ±2.5 percentage points).

Caution should be taken when evaluating data with a small sample size or base (n<50) due to the high level of sampling error around the data, which can lead to results that do not accurately represent the ART ridership as a whole.

Terminology

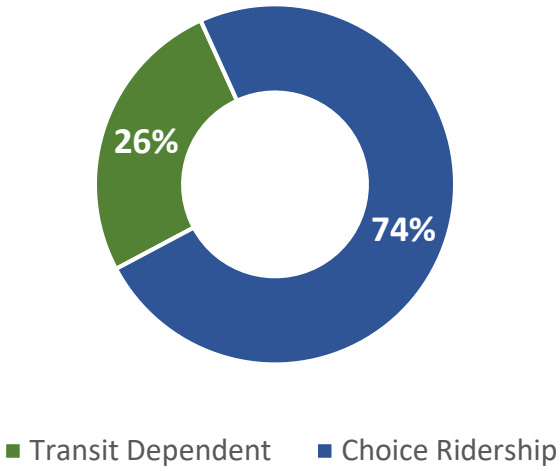
The current technology utilized onboard ART buses allows Arlington Transit to track the number of individual trips taken on any given bus, but not the number of unique riders. This means that the sampling plan and expansion factors are calculated using the total trips taken on ART (i.e. the total ridership). Therefore, the term “riders” in this report refers to the study’s unit of analysis—riders representing a number or trips, or ridership—rather than individual riders.

Statistical significance means that there is a 95% chance that a difference found in this research would also have been found if the entire ART ridership had been surveyed. Throughout the report, letters and arrows are used to indicate that significant differences are present at the 95% confidence level. Additionally, the word ‘significant’ will be used to identify statistical significance.

Transit Dependent vs. Choice Ridership

Throughout this report, the data are examined by choice riders versus transit dependent riders. To align with the research conducted in 2013, the data were assigned a group based on the response to Q5, "Thinking about all of the reasons you choose to ride ART, please tell me your top five reasons for riding." Those who indicated "I don't have a driver's license – It's my only means of transportation" are considered transit dependent for the purposes of this research[3].

Figure 5: Transit Dependent vs. Choice Ridership



Q5. Thinking about all of the reasons you choose to ride ART, please tell me your top five reasons for riding?
Base = Those answering (n=976)

A brief table is included here to outline the characteristics of these two ridership groups.

Table 17: Transit Dependent vs. Choice Ridership

Characteristics	Transit Dependent (n=217) A	Choice Ridership (n=749) B
Employed full-time	53%	77%[A]
Average Income	$36,300	$72,400[A]
Gender	42% male 58% female[B]	51% male[A] 49% female
Age	21% GenZ[B] 42% Millennial 20% GenX 14% Boomer 2% Silent	10% GenZ 44% Millennial 26% GenX 19% Boomer 1% Silent
Hispanic/Latino	41%[B]	19%
White	22%	45%[A]
Black/African-American	31%	26%

Significant differences are shown through the use of letters

[3] Since Q5 was asked on an unaided basis, it is possible that the transit dependent ridership is underrepresented in this research.

Research Caveats and Limitations

Due to the selected methodology, some results should be interpreted with caution. For example, the preference given to weekday over weekend trips may create an overrepresentation of commuting trips in this research. Furthermore, as only nine routes were surveyed, this research does not represent a comprehensive review of the entire ART bus system.

When possible, comparisons have been made to the findings from the 2013 satisfaction study. However, caution is advised when examining these differences due to changes in methodology. For example, hard route-based quotas were used in 2013 to provide representative data. In 2019, soft route-based targets were used and the results were weighted to be representative of the ridership at the route level (see Weighting), which should result in incrementally more accurate survey results. Additionally, respondents were incentivized with a free ride token in 2013 while an incentive was not offered in 2019. The availability of an incentive (or lack thereof) may impact who decides to complete the survey. Lastly, the 2019 research was conducted via interviewer-administered intercept interview while the 2013 research was conducted via self-administered paper survey.

KEY FINDINGS

ART Ridership

ART services a diverse population, with its riders spanning a variety of ages, incomes, racial and ethnic backgrounds. There is roughly even ridership among males and females. The majority of ART riders are employed either full-time or part-time. The average household size among ART riders is 3 people, but most do not live in a household with children under the age of 18.

There is no single 'type' of ART rider. The findings of this research demonstrate that Arlington Transit services a wide range of Arlington County residents and visitors.

ART riders use the ART system frequently, with 93% of riders using ART at least once per week. Most use ART to travel to and/or from work (81%), while 27% use ART to run errands, and 25% use ART to shop. Overall, riders report regularly using an average of 2 different ART bus routes.

Satisfaction with ART

Overall, satisfaction is high, with 86% of riders indicating that they are satisfied with ART and 78% indicating that they are very likely to recommend ART for travel around Arlington. At the route level, satisfaction tends to be higher among those surveyed on routes 43 (94% satisfied) and 55 (93%); satisfaction tends to be lower among those surveyed on routes 42 (76%) and 75 (72%).

ART riders are satisfied and loyal.

Overall, ART riders are very likely to use ART in the future (78%). Notably, those who ride ART by choice are significantly more likely than those who are dependent on ART to say they are likely to continue using this service (82% vs. 69%). In fact, 11% of transit dependent riders say they are very unlikely to use ART in the future (compared to 5% of choice riders). This suggests that transit dependent riders use ART because they have to, but they may be seeking alternate modes of transportation or would consider alternate modes if presented with the opportunity. This indicates a potential future loss of ridership if changes are not made to better meet the needs of the transit dependent rider population.

While the focus group participants did not consider themselves 'loyal' to ART, this research found that the majority of ART riders (64%) demonstrate loyal behaviors (i.e. they are satisfied with ART, plan to continue using ART in the future and would recommend ART to others). This suggests that while riders may not consider themselves emotionally loyal to ART, they do engage with ART in a way that implies customer loyalty.

Choosing ART

Regardless of rider-type, most trips are taken by riders who primarily use ART to travel to and/or from work. However, a greater proportion of choice riders than transit dependent riders use ART for this purpose (84% vs. 74%). Conversely, a greater proportion of transit dependent riders use ART for non-work trips such as running errands (36% vs. 24%) and/or shopping (33% vs. 23%). A considerable proportion of transit dependent riders utilize ART to travel to and from medical appointments (23%), suggesting that ART plays a role in providing access to health care for these riders.

"Transit Dependent": Riders who choose ART because they do not have a driver's license – it is their only means of transportation.

ART riders choose to ride ART because it is convenient (55%), affordable (33%), takes them where they want to go (31%), and is easy to use (29%).

Compared to one year ago, 45% of ART riders use ART less often, and another 45% use this service about the same amount. Only 5% of riders use ART more often than one year ago.

Ways to Increase Ridership

The ART riders who participated in this survey were read a list of items that might encourage someone to choose to ride the ART bus more often and asked to indicate which, if any, would encourage them to do so. The responses selected most often were more frequent bus service (38%), more accurate real-time route information (34%), better on-time performance (32%), reduced fares (29%), more areas serviced (28%), and free Wi-Fi (27%). Mobility Lab's 2019 Real Time Transit Information report found that those who live, work, and/or go to school in Arlington find the availability of real-time route information to be a crucial part of the travel-planning process, and that inaccurate information negatively impacts information use and public transportation use in the county. Based on results of this report, Mobility Lab recommended that Arlington County prioritize the accuracy and reliability of real time information going forward (Mobility Lab, 2019).

The ART ridership wants:

1. More frequent bus service
2. More accurate real-time information
3. Better on-time performance

While 96% of senior citizen riders paid their fare with a SmarTrip Card, only 67% used the senior discount with their SmarTrip Card. This might suggest that awareness of the senior discount in conjunction with SmarTrip Cards is limited; the reduced fare offered through this card should be promoted to potentially stabilize or even increase ridership among senior citizens. Mobility Lab's 2017 report on transportation issues faced by senior citizens found that many senior citizens in Arlington County are underinformed about the various uses of SmarTrip cards (e.g., they don't know they can be used on buses as well as on Metrorail) and about the senior discount available with a SmarTrip card. Based on these findings, this report included strategies for Arlington County to increase information awareness about senior discounts and transportation options, such as the distribution of senior travel information packets with pre-loaded SmarTrip cards (Mobility Lab, 2017).

This research suggests that improving aspects of the trip experience related to timeliness may increase ridership. Those who commute are more sensitive to on-time performance than those on personal trips. Since the majority of ART riders use ART to commute, better on-time performance could be considered a critical element to increase satisfaction and use of ART. However, on-time performance is just one aspect of the trip experience. The availability of real-time information appears to be just as attractive to these riders. Since this information is readily available through the Arlington Transit website and various applications, ART should work to inform its riders of the availability of this information and improve the accuracy and quality where possible.

A large proportion of choice riders use ART for commuting trips (84%), with almost six in ten choice riders using ART *solely* for commuting trips (57%). This population indicates they are very satisfied with ART and plan to continue using ART in the future. With only 43% using ART for personal trips, these positive responses suggest there might be opportunity to persuade commuters to utilize ART for personal trips as well. Future research is needed to understand why commuters are not using ART for personal trips; possible avenues for exploration include 1) Are commuters who only use one route aware/familiar with of other ART routes? 2) Does ART go the places commuters need to go for personal trips?

Notably, 1% of riders indicated that none of these would encourage them to ride more often and 8% said they already ride as often as they can. This suggests that there is significant opportunity for Arlington Transit to make enhancements that will increase ridership onboard ART buses.

PROFILE OF RIDERSHIP

The findings of this research demonstrate that Arlington Transit (ART) services a wide range of Arlington County residents, workers, and visitors. A detailed exploration is included here.

ART Riders Tend to Be:

- Mostly employed
- All levels of income
- Millennials
- Racially and ethnically diverse
- Both male and female

Employment Status and Income

The majority of trips taken on ART buses are taken by riders who are employed (71% employed full-time; 14% employed part-time). However, the income reported by riders is varied, with roughly one-fourth making less than $25,000 a year and over $100,000 a year (26% and 22%, respectively). The average income reported by ART riders overall is $62,600; transit dependent riders report an average income of $36,300, while choice riders report an average income of $72,400.

Age and Gender

The ART ridership spans a range of ages, with the largest proportion of trips taken by millennials (43% of riders were born between 1981 and 1996). Those under the age of 16 were not eligible to participate this research, so the proportion of minors who ride ART will be underrepresented in these results. Trips are comprised of roughly equal proportions of males and females (49% male; 51% female).

Race and Ethnicity

ART riders are racially and ethnically diverse; 39% of riders identify as White, followed by 27% who identify as African American or Black and 26% who identify as Hispanic or Latino.

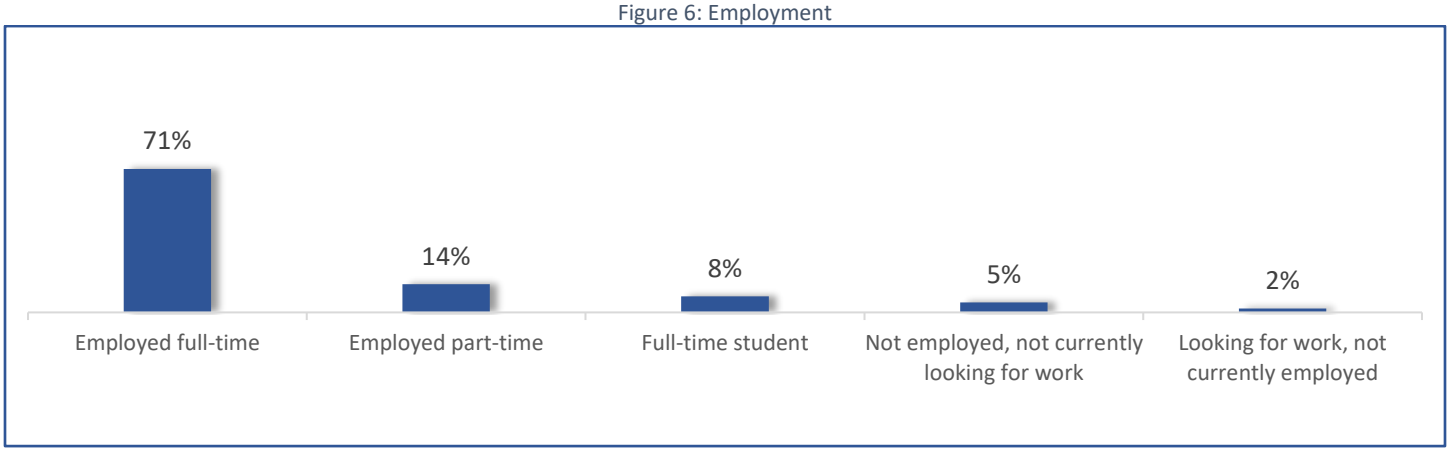
Personal Vehicle

Overall, 40% of ART riders never have access to a personal vehicle, while about one-third (35%) have access to a vehicle all or most of the time.

Household Makeup

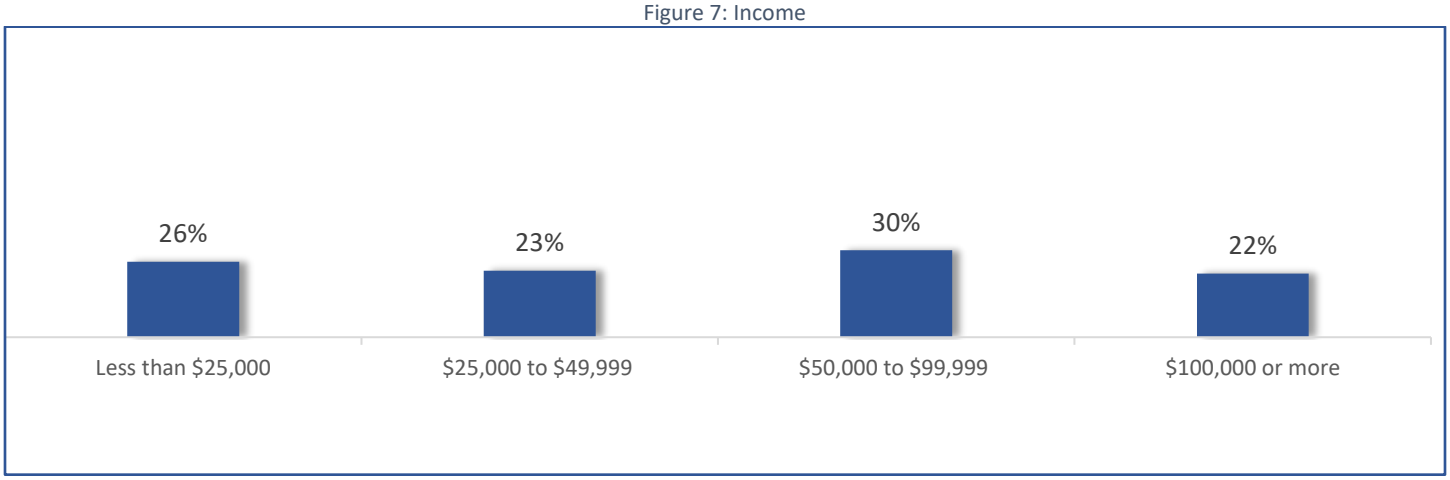
The average household size among ART riders is 3 people, with similar proportions living alone (27%), with one other person (29%), or with two other people (30%). Most ART riders do not live in a household with children under the age of 18 (67%).

Figure 6: Employment



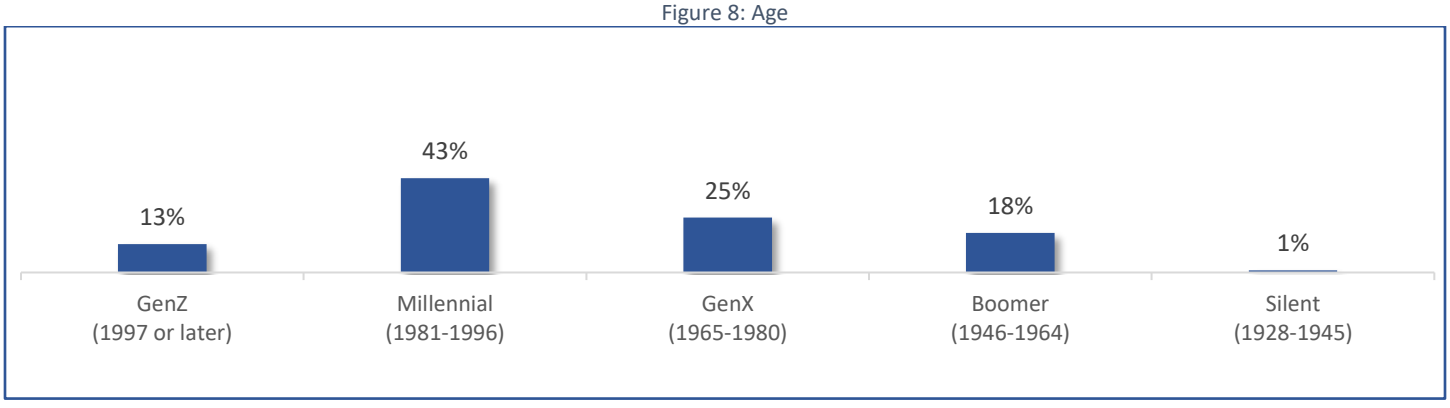
Q14. Which of the following best reflects your current employment status?
Base = Those answering (n=970)

Figure 7: Income



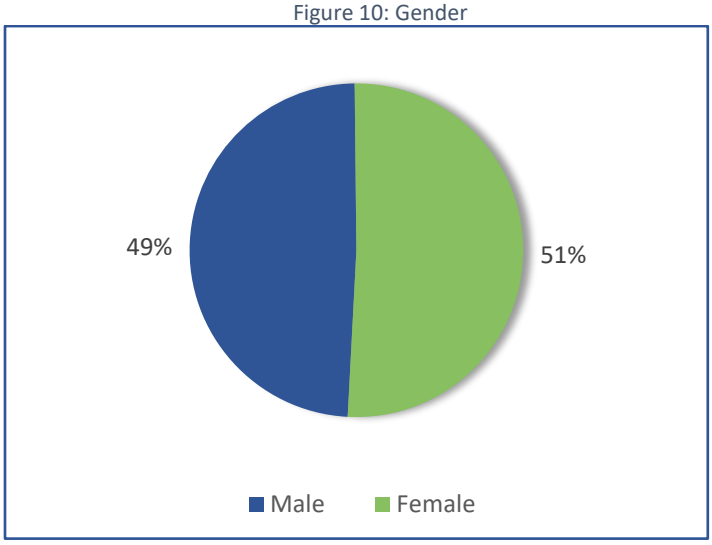
Q24. Which category best describes your household's total annual income?
Base = Those answering (n=664)

Figure 8: Age



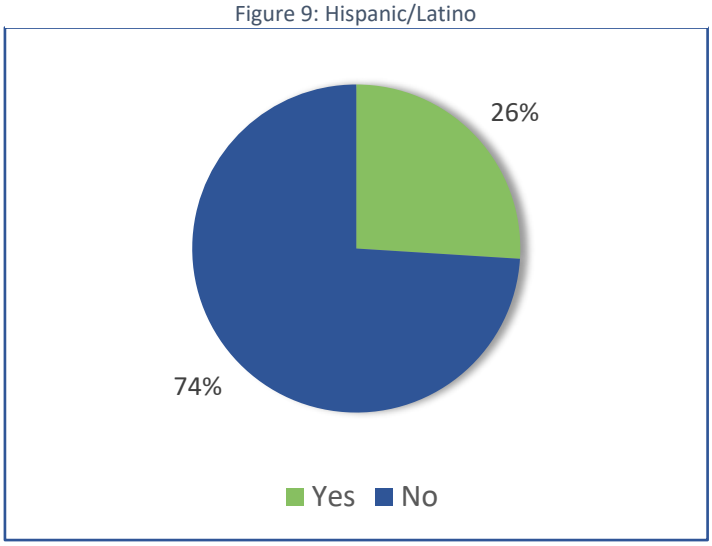
Q19. In what year were you born?
Base = Those answering (n=887)

Figure 10: Gender



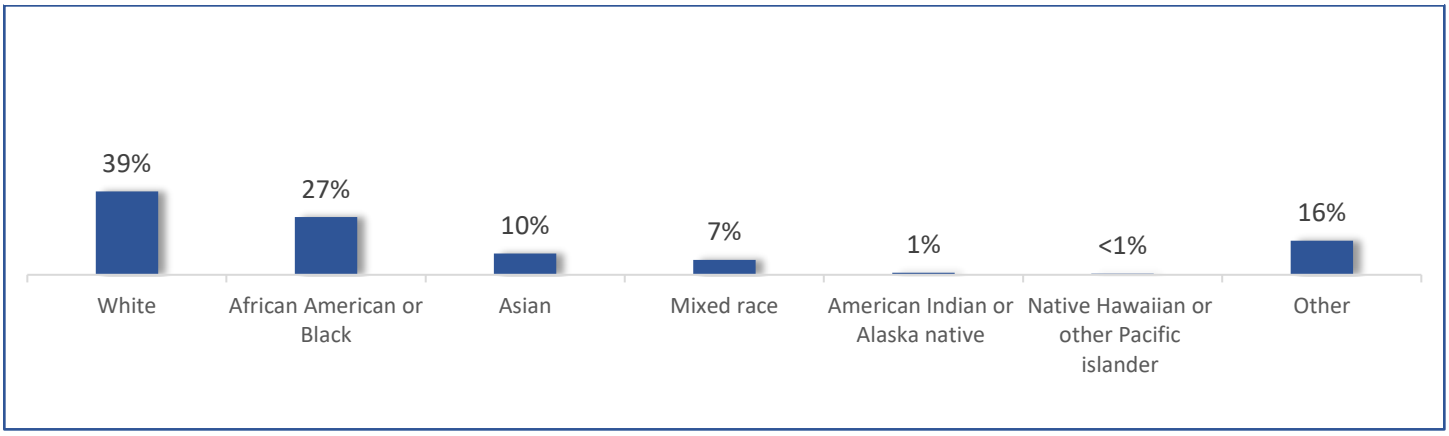
Q20. Gender
Base = Total sample (n=993)

Figure 9: Hispanic/Latino



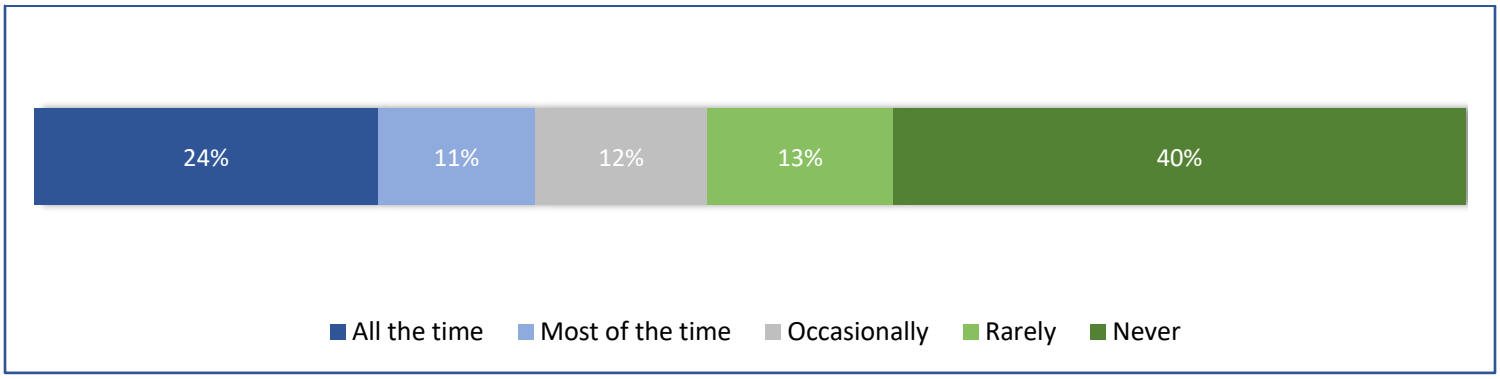
Q21. Are you of Hispanic or Latino descent?
Base = Those answering (n=953)

Figure 11: Race/Ethnicity



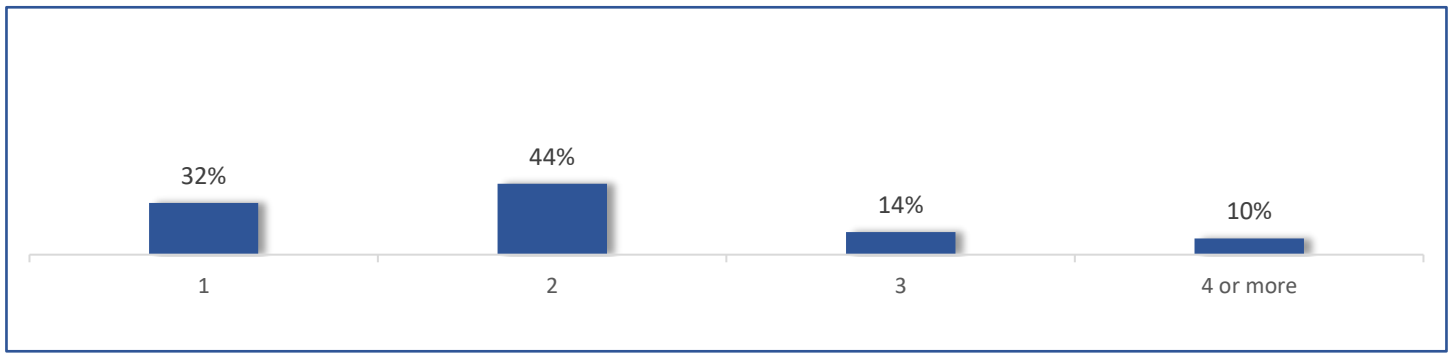
Q22. With which racial or ethnic group do you identify?
Base = Those answering (n=926)

Figure 12: Availability of Personal Vehicle



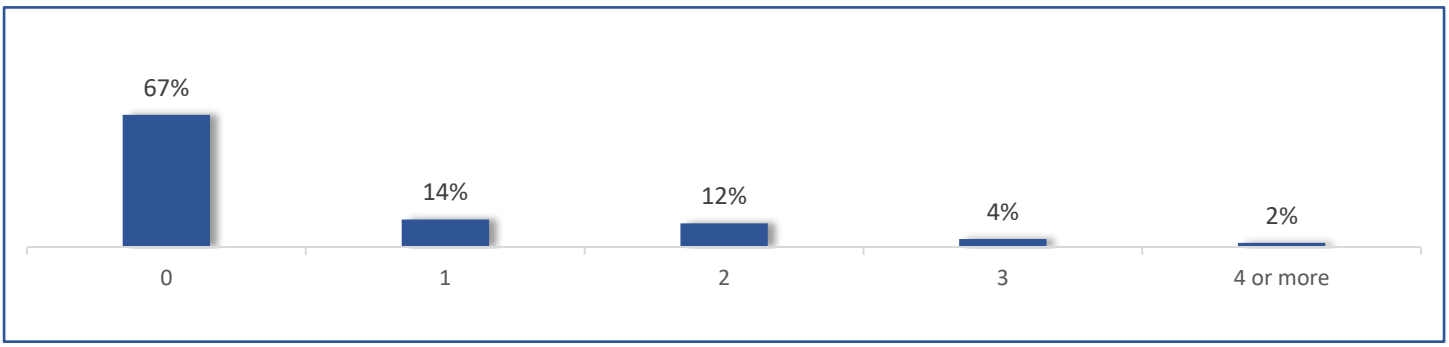
Q25. How often do you have a personal vehicle available to you?
Base = Total sample (n=993)

Figure 13: Number of Adults in Household



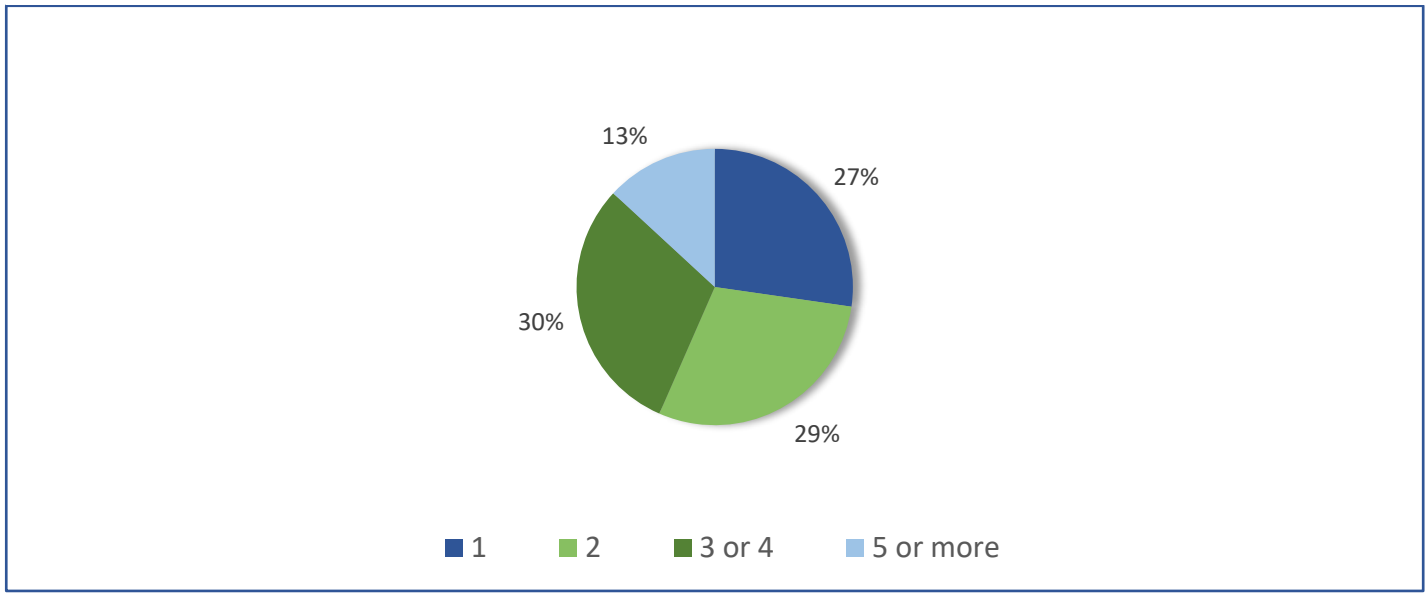
Q23. Including yourself, how many people live in your household? Number of adults over 18.
Base = Total sample (n=993)

Figure 14: Number of Children in Household



Q23. Including yourself, how many people live in your household? Number of children under 18.
Base = Total sample (n=993)

Figure 15: Household Size



Q23. Including yourself, how many people live in your household?
Base = Total sample (n=993)

SATISFACTION WITH ART

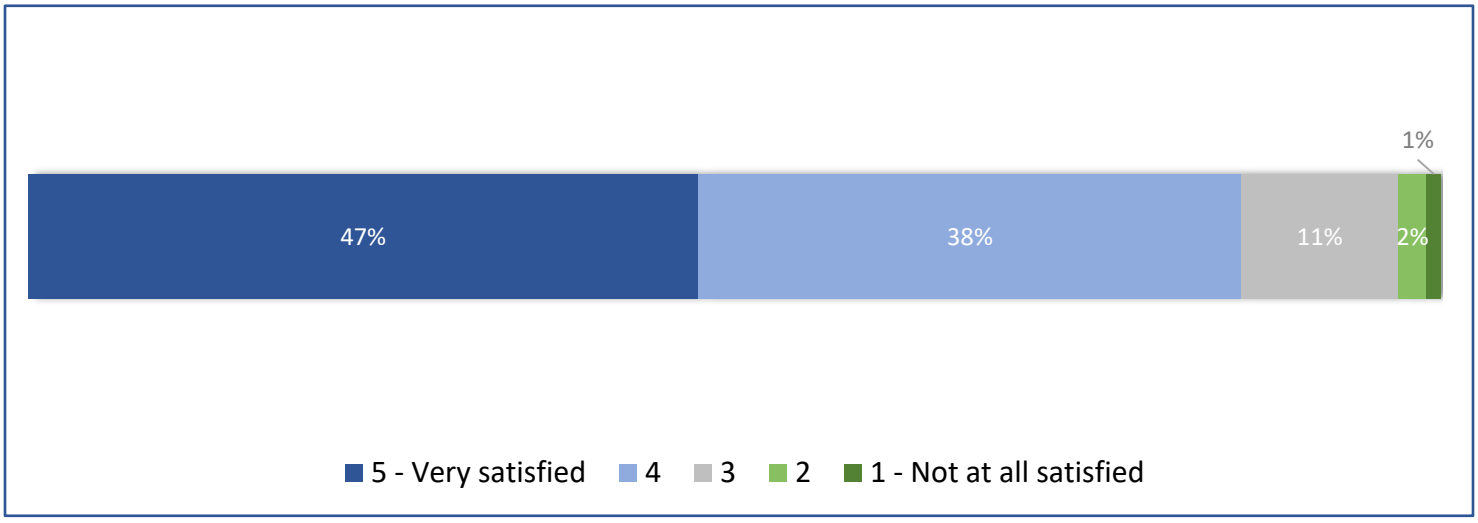
Overall Satisfaction

Overall, satisfaction is high among ART riders, with 86% indicating that they are satisfied (rated 4 or 5). This is relatively consistent with the 2013 findings where 90% were satisfied. However, the proportion of riders indicating they are 'very satisfied' has declined since 2013 (47% in 2019 vs. 63% in 2013).

At the route level, satisfaction tends to be highest among those surveyed on routes 43 (94% satisfied) and 55 (93%); satisfaction tends to be lowest among those surveyed on routes 42 (76%) and 75 (72%).

Satisfaction is relatively consistent across age, income, gender, and rider-type. Interestingly, those who only use ART for personal trips tend to give higher satisfaction ratings than those who only use ART to commute to work and/or school (93% vs. 84%).

Figure 16: Overall Satisfaction



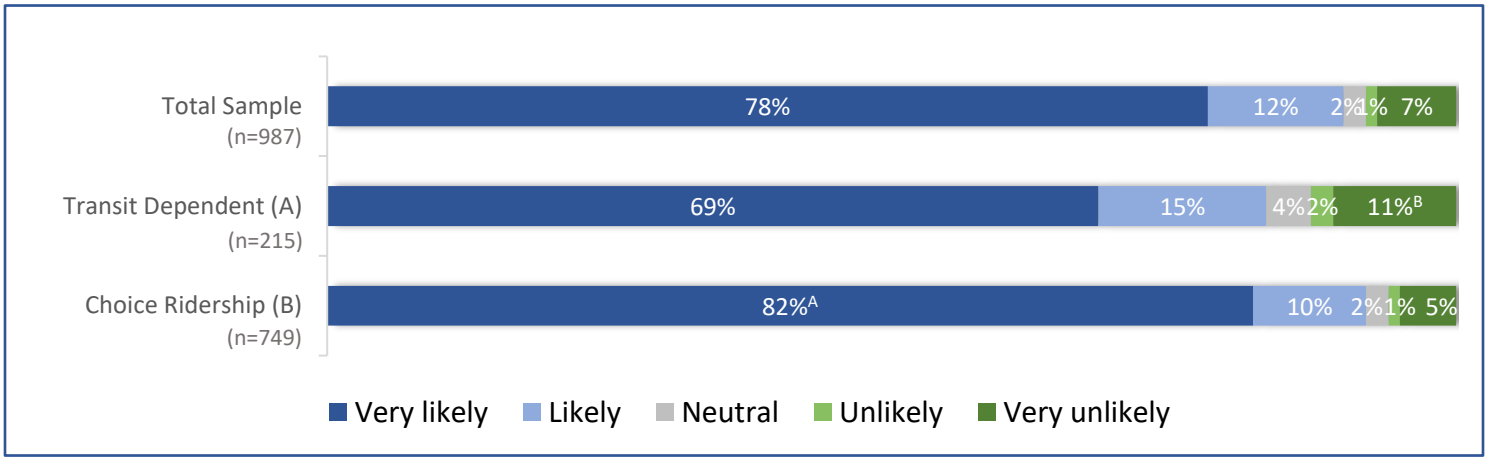
Q6. How satisfied are you OVERALL with your experience with ART?
Base = Those answering (n=968)

Likelihood to Use ART in the Future

Overall, ART riders are *very* likely to use ART in the future (78%). Notably, those who ride ART by choice are significantly more likely than those who are dependent on ART to say they are very likely to continue using this service (82% vs. 69%). In fact, 11% of transit dependent riders say they are *very* unlikely to use ART in the future (compared to 5% of the choice ridership). This suggests that transit dependent riders use ART because they have to, but they may be seeking alternate modes of transportation or would consider alternate modes if presented with the opportunity. This indicates a potential future loss of ridership if changes are not made to better meet the needs of the transit dependent rider population.

Likelihood to use ART in the future is not impacted by the types of trips taken on ART, but there are visible differences across some demographic markers. For example, those who are male, non-Hispanic/White, and/or earn more than $75,000 tend to be more likely to say they will continue using ART in the future.

Figure 17: Likelihood to Use ART in the Future



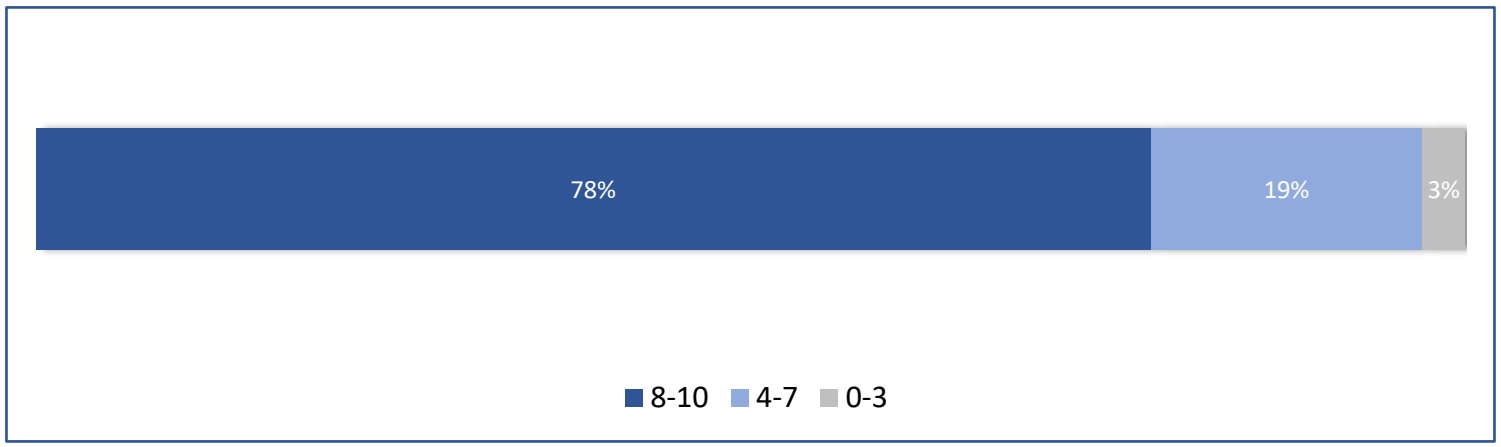
Q8. How likely is it that you will use ART in the future?
Base = Those answering
Significant differences are shown through the use of letters.

Likelihood to Recommend ART

About three-fourths of ART riders (78%) are very likely to recommend ART for travel around Arlington. This is unchanged from 2013. Compared to other local bus systems, the proportion of riders likely to recommend ART falls just below the average (84% average rating 8-10).

Riders who are 55 and older are significantly more likely than younger riders to be very likely to recommend ART for travel around Arlington (88% vs. 77% - 78%).

Figure 18: Likelihood to Recommend ART

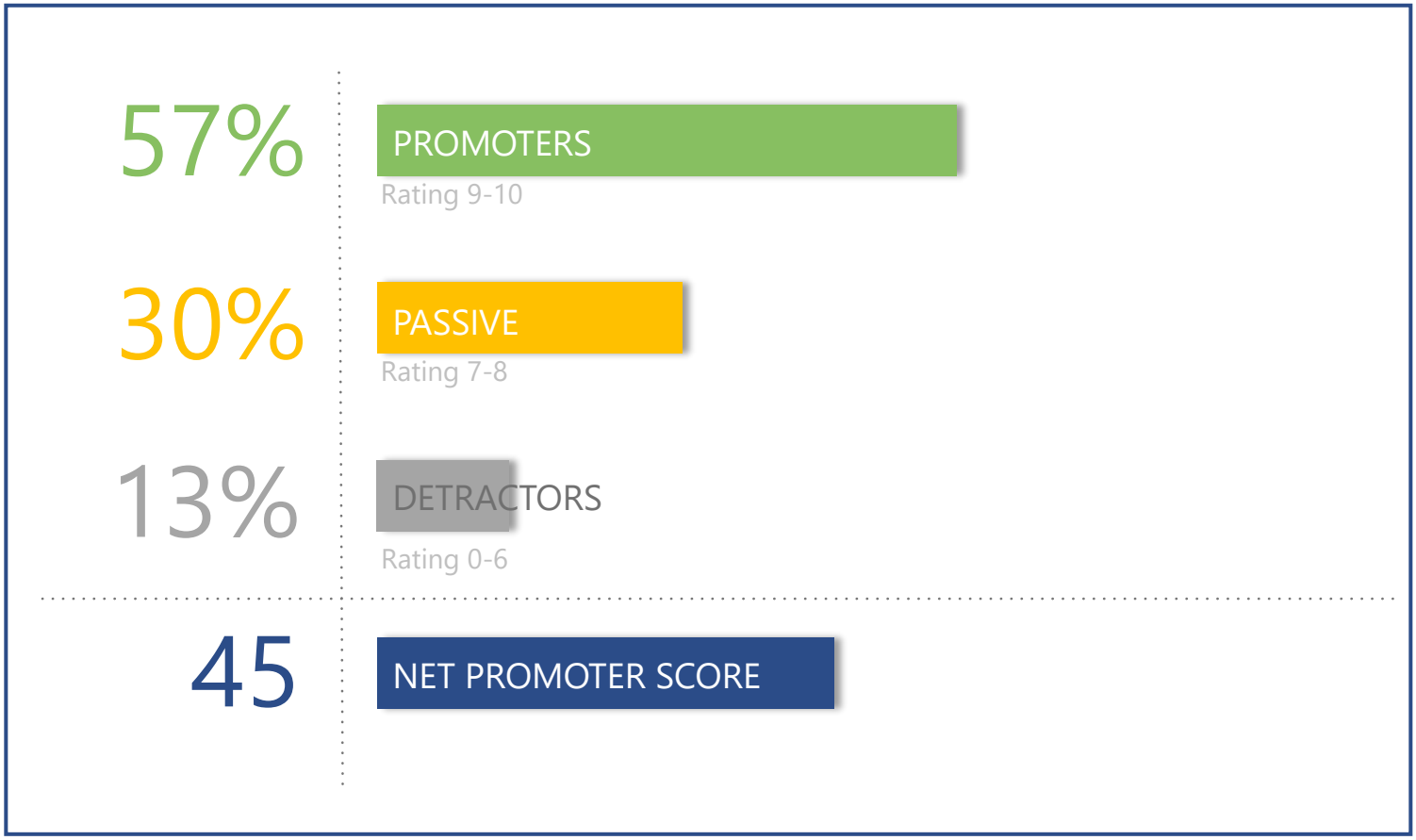


Q7. How likely are you to recommend ART for travel around Arlington?
Base = Those answering (n=963)

Net Promoter Score

Net Promoter Score (NPS) is a measure of customer loyalty that is used across a wide variety of industries. NPS is based on the concept that any firm, agency, or service provider's ultimate goal is to build customer loyalty and have customers who are willing to promote and advocate for the product.[4]

Figure 19: Net Promoter Score



Q7. How likely are you to recommend ART for travel around Arlington?
Base = Those answering (n=963)

An organization's Net Promoter Score (NPS) is calculated by subtracting the number of customers who are unlikely to recommend the organization (rating 0 to 6) from the number of those who are very likely to recommend (rating 9 to 10). 57% of riders can be considered Promoters, followed by 30% who can be considered Passive and 13% as Detractors, resulting in an NPS of 45. This represents a decrease from the NPS of 50 found in 2013 and is lower than is typically seen in the transportation industry, or with local bus service in particular.

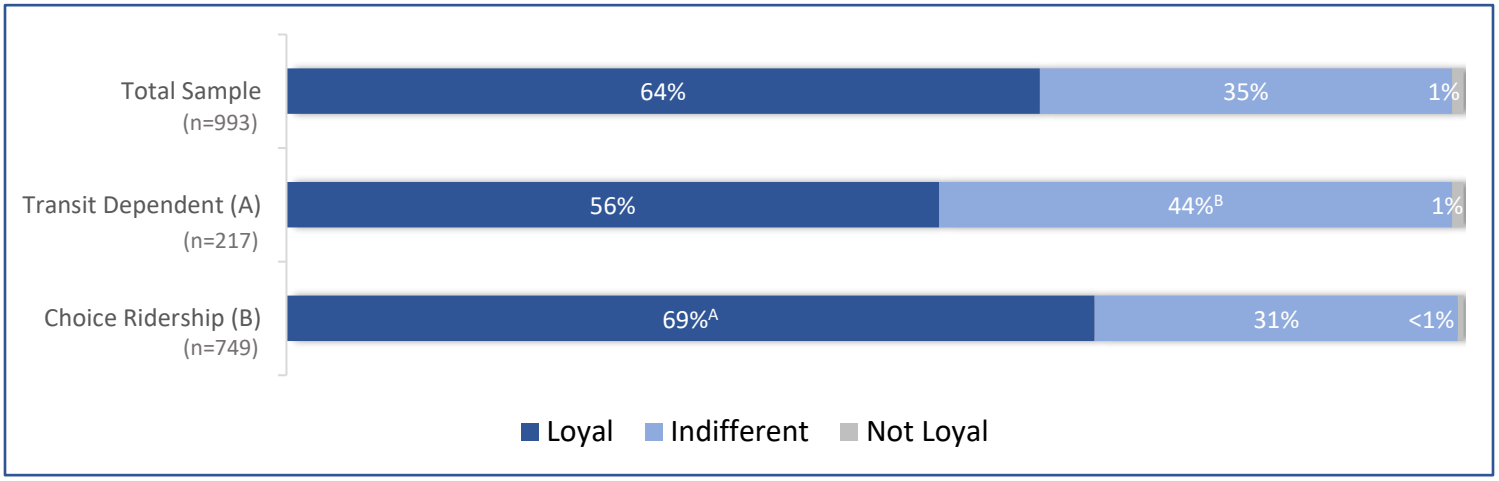
[4] Reichheld, Fred (2011). *The Ultimate Question 2.0*. Harvard Business School Publishing.

Loyalty Analysis

In addition to a Net Promoter Score, a loyalty analysis was also created for this research. Understanding loyalty is important in that it allows Arlington Transit to identify riders who are most likely to switch to the competition. This analysis takes into consideration responses to the three main satisfaction measures: 1. Ratings of their overall satisfaction; 2. Likelihood to recommend ART; and 3. Likelihood to use ART in the future. Riders who give positive responses for each of these three measures are considered loyal (a satisfaction level of 4 or 5; a rating of 8 to 10 for likelihood to recommend; and likely or very likely to use ART in the future). Those who give negative ratings for all three of these measures are considered not loyal, and those giving some other combination of responses are considered indifferent.

This research found that 64% of ART riders are considered loyal, 35% are indifferent and 1% are not loyal. Notably, choice riders are significantly more likely than transit dependent riders to be loyal (69% vs. 56%), while transit dependent riders are more likely to be indifferent (44% vs. 31%).

Figure 20: Loyalty



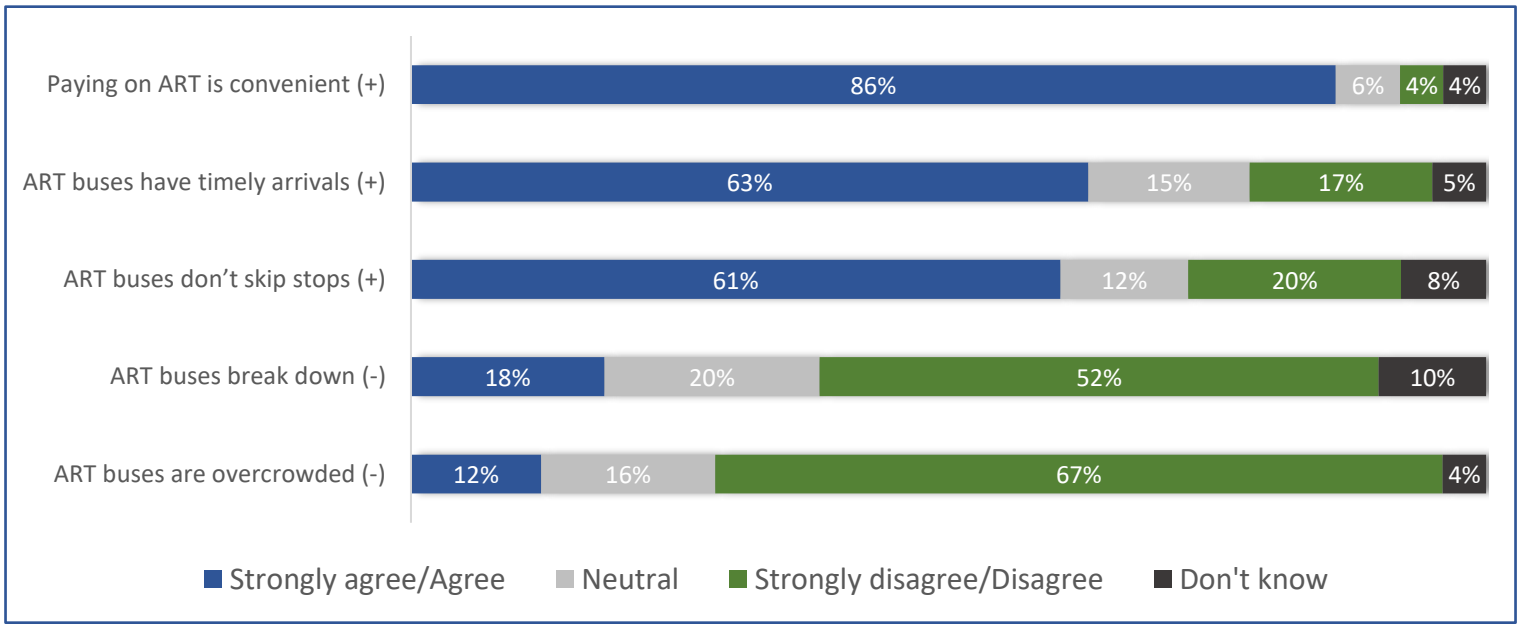
Q6. How satisfied are you OVERALL with your experience with ART?
Q7. How likely are you to recommend ART for travel around Arlington?
Q8. How likely is it that you will use ART in the future?
Base = Total sample
Significant differences are shown through the use of letters.

Ratings of ART

Respondents were asked to rate ART on several attributes, based on their experience with the service. Overall, riders tend to agree that paying on ART is convenient (86% agree), ART buses have timely arrivals (63% agree), and that ART buses don't skip stops (61% agree). Riders tend to disagree with the statements that ART buses are overcrowded (67% disagree) and ART buses break down (52%).

Interestingly, those who *only* use ART for personal trips give more positive ratings for timely arrivals than those who use ART to commute to work and/or school. This could reflect that riders on personal trips tend to be less time-sensitive time than those on commuting trips.

Figure 21: Ratings of ART



Q9. Based on your experience, how would you rate ART on each of these attributes?
Base = Total sample (n=993)
(+) indicates a positive statement. (-) indicates a negative statement.

When it comes to experiences on ART buses, choice riders tend to give more positive ratings than transit dependent riders. For example, choice riders are significantly more likely to agree or strongly agree that paying on ART is convenient (92% vs. 78%), ART buses have timely arrivals (68% vs. 55%), and ART buses don't skip stops (65% vs. 54%). They are also more likely to disagree or strongly disagree that ART buses break down (57% vs. 44%) and ART buses are overcrowded (73% vs. 57%).

Table 18: Ratings of ART by Ridership

% Agree	Transit Dependent (n=217) A	Choice Ridership (n=749) B	% Disagree	Transit Dependent (n=217) A	Choice Ridership (n=749) B
Paying on ART is convenient (+)	78%	92%[A]	Paying on ART is convenient (+)	5%	3%
ART buses have timely arrivals (+)	55%	68%[A]	ART buses have timely arrivals (+)	20%	16%
ART buses don't skip stops (+)	54%	65%[A]	ART buses don't skip stops (+)	22%	19%
ART buses break down (-)	23%	17%	ART buses break down (-)	44%	57%[A]
ART buses are overcrowded (-)	15%	11%	ART buses are overcrowded (-)	57%	73%[A]

Q9. Based on your experience, how would you rate ART on each of these attributes?
Base = Total sample (n=993)
(+) indicates a positive statement. (-) indicates a negative statement.
Significant differences are shown through the use of letters.

At the route level[5], route 43 tends to receive the most positive ratings for convenient payment, timely arrivals, and not skipping stops. As route 43 is a short, limited stop service route, positive ratings for timely arrivals and not skipping stops is not surprising. Comparing all of the routes surveyed, those surveyed on routes 41 and 75 tend to give higher agreement ratings for ART being overcrowded (16% – 18%) and breaking down (20% - 30%). Those surveyed on route 87 also tend to give higher agreement ratings for ART breaking down (24%).

Table 19: Ratings of ART by Route

% Agree	41 (n=169) A	42 (n=126) B	43 (n=249) C	52 (n=35*) D	55 (n=165) E	75 (n=57) F	77 (n=70) G	84 (n=20*) H	87 (n=102) I
Paying on ART is convenient (+)	83%[G]	88%[G]	95%[ABGHI]	97%[ABGHI]	91%[AG]	93%[AG]	70%	75%	84%[G]
ART buses have timely arrivals (+)	59%[H]	53%	82%[ABFGHI]	71%[BGH]	76%[ABFGHI]	58%	46%	35%	64%[GH]
ART buses don't skip stops (+)	53%	70%[AFGH]	76%[AFGHI]	66%	68%[AFG]	49%	51%	45%	58%
ART buses break down (-)	20%	17%	14%	23%	12%	30%[CE]	16%	25%	24%[E]
ART buses are overcrowded (-)	18%[BCEGI]	6%	7%	9%	10%	16%	9%	15%	6%

Q9. Based on your experience, how would you rate ART on each of these attributes?
Base = Total sample
(+) indicates a positive statement. (-) indicates a negative statement.
Significant differences are shown through the use of letters.
*Caution: Small base

[5] Due to the small base sizes, the results from routes 52 and 84 are not included in the written analysis. Caution is advised when reviewing the data for these routes.

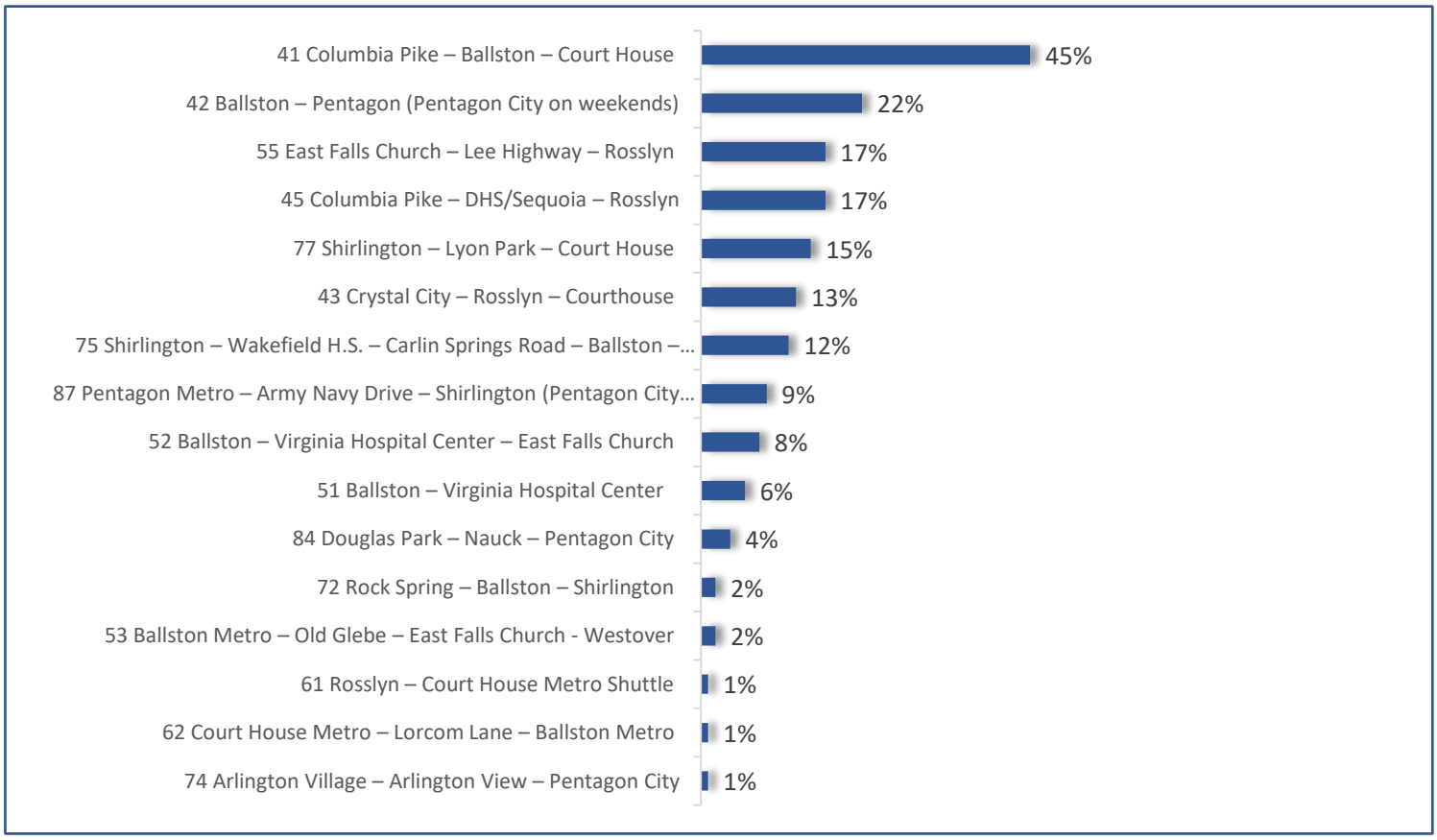
TRAVEL HABITS

Routes Regularly Used

45% of riders regularly use route 41; this is followed by 22% who regularly use route 42. However, it is important to note that this data could be affected by the methodology, as only nine of the 16 ART routes were surveyed for this research[6].

Overall, riders report regularly using an average of 2 different ART bus routes. Choice riders are significantly more likely to use just one route when compared to transit dependent riders (60% uses one route vs. 46%).

Figure 22: Routes Regularly Used



Q2. What routes do you regularly use?
Base = Those answering (n=990)
Multiple Responses Accepted

[6] Routes surveyed include: 41, 42, 43, 52, 55, 75, 77, 84, and 87

While route 41 is the most regularly used route for both transit dependent and choice riders, a significantly larger proportion of transit dependent riders regularly use this route (59% vs. 39%).

Transit dependent riders are also more likely to use routes 77 (20% vs. 14%) and 75 (18% vs. 10%). Conversely, choice riders are significantly more likely to regularly use routes 55 (20% vs. 12%), 43 (17% vs. 6%), and 84 (5% vs. 1%).

Table 20: Routes Regularly Used by Ridership

	Transit Dependent (n=217) A	Choice Ridership (n=747) B
41 Columbia Pike – Ballston – Court House	59%[B]	39%
42 Ballston – Pentagon (Pentagon City on weekends)	23%	22%
55 East Falls Church – Lee Highway – Rosslyn	12%	20%[A]
45 Columbia Pike – DHS/Sequoia – Rosslyn	20%	16%
77 Shirlington – Lyon Park – Court House	20%[B]	14%
43 Crystal City – Rosslyn – Courthouse	6%	17%[A]
75 Shirlington – Wakefield H.S. – Carlin Springs Road – Ballston – Virginia Square	18%[B]	10%
87 Pentagon Metro – Army Navy Drive – Shirlington (Pentagon City on weekends)	9%	10%
52 Ballston – Virginia Hospital Center – East Falls Church	11%	7%
51 Ballston – Virginia Hospital Center	8%	5%
84 Douglas Park – Nauck – Pentagon City	1%	5%[A]
72 Rock Spring – Ballston – Shirlington	5%	2%
53 Ballston Metro – Old Glebe – East Falls Church - Westover	2%	3%
61 Rosslyn – Court House Metro Shuttle	2%	1%
62 Court House Metro – Lorcom Lane – Ballston Metro	1%	1%
74 Arlington Village – Arlington View – Pentagon City	1%	<1%

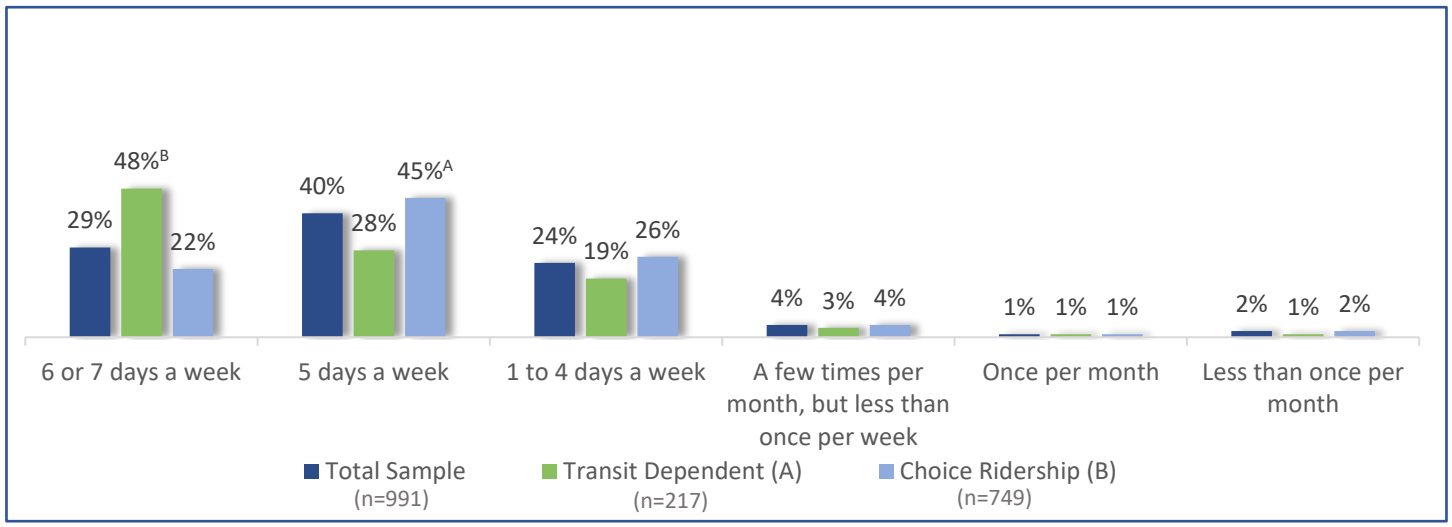
Q2. What routes do you regularly use?
Base = Those answering
Multiple Responses Accepted
Significant differences are shown through the use of letters

Frequency of Use

ART riders use the ART system frequently, with 93% of riders riding the bus at least once per week (up from 86% in 2013). Specifically, 69% ride the bus 5 or more days a week (29% ride 6 or 7 days a week, and 40% ride 5 days a week), and 24% ride the bus 1 to 4 days a week. Compared to choice riders, a significantly greater proportion of transit dependent riders use ART 6 or 7 days a week (48% vs. 22%). Choice riders are significantly more likely to use ART 5 days a week (45% vs. 28%).

Riders who identify as Hispanic or Latino are significantly more likely than those who identify as Non-Hispanic or Latino to ride the bus 6 or 7 days a week (47% vs. 23%). Similarly, those who identify as African American or Black are significantly more likely than those who identify as White to ride the bus 6 or 7 days a week (37% vs. 14%). Those who report earning lower income are significantly more likely than those who report earning higher income to ride the bus 6 or 7 days a week (48% vs. 9 – 20%).

Figure 23: Frequency of ART Use

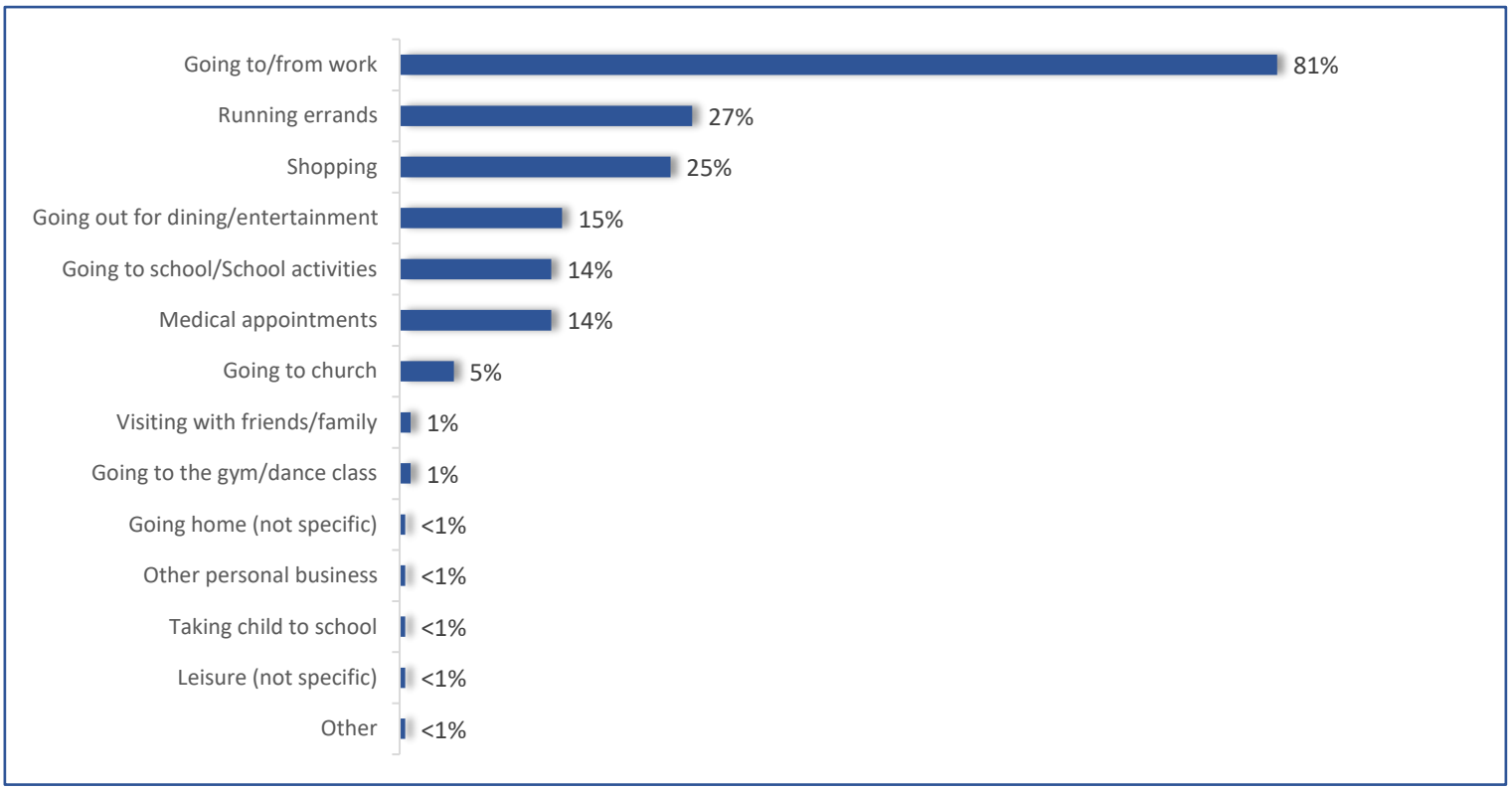


Q1. How often do you ride ART buses?
Base = Those answering
Significant differences are shown through the use of letters.

Trips Taken on the Bus

The majority of riders use the ART bus to travel to and/or from work (81%), while 27% use ART to run errands, and 25% use ART to shop.

Figure 24: Trips Taken on ART



Q3. For what types of trips do you ride the bus?
Base = Those answering (n=989)
Multiple Responses Accepted

Regardless of rider-type, most trips are taken by riders who primarily use ART to travel to and/or from work. However, a statistically greater proportion of choice riders use ART for this purpose (84% vs. 74%). Conversely, a greater proportion of transit dependent riders use ART for non-work trips, such as running errands (36% vs. 24%), shopping (33% vs. 23%), going to school or school activities (21% vs. 11%), medical appointments (23% vs. 11%), and/or going to church (8% vs. 4%).

Table 21: Trips Taken on ART by Ridership

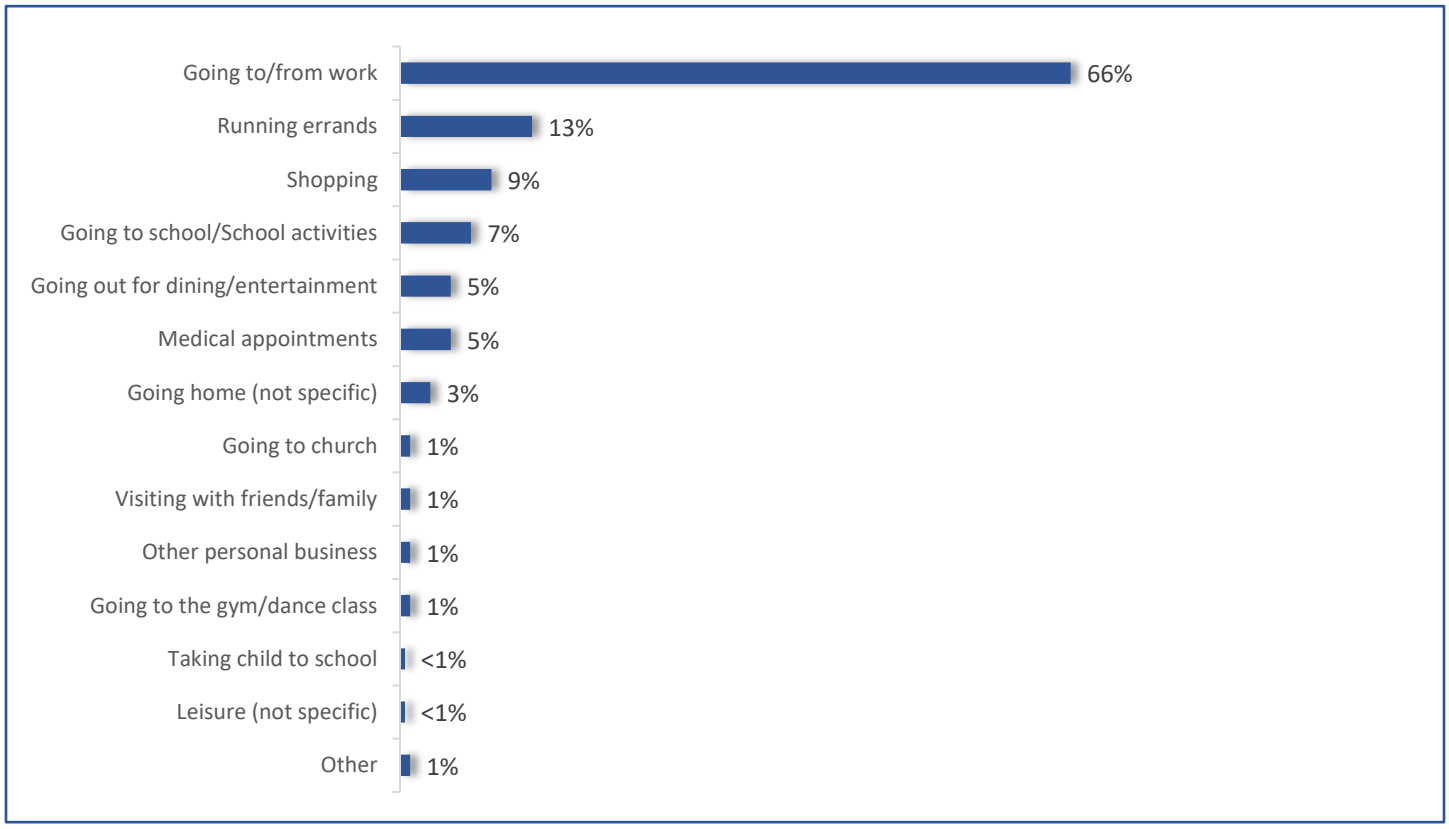
	Transit Dependent (n=217) A	Choice Ridership (n=748) B
Going to/from work	74%	84%[A]
Running errands	36%[B]	24%
Shopping	33%[B]	23%
Going out for dining/entertainment	19%	14%
Going to school/School activities	21%[B]	11%
Medical appointments	23%[B]	11%
Going to church	8%[B]	4%
Visiting with friends/family	1%	1%
Going to the gym/dance class	<1%	1%
Going home (not specific)	1%	<1%
Other personal business	1%	-
Taking child to school	-	<1%
Leisure (not specific)	-	<1%
Other	-	<1%

Q3. For what types of trips do you ride the bus?
Base = Those answering
Multiple Responses Accepted
Significant differences are shown through the use of letters.

Purpose of Surveyed Trip

Two-thirds of riders (66%) were surveyed while traveling to and/or from work, while 13% were surveyed while running errands. It is possible that these figures were influenced by the sampling plan, which favored weekday trips. By rider-type, choice riders were more likely than transit dependent riders to be traveling to work and/or school (74% vs. 65%), while transit dependent riders were more likely than choice riders to be traveling for personal reasons (38% vs. 28%).

Figure 25: Purpose of Surveyed Trip



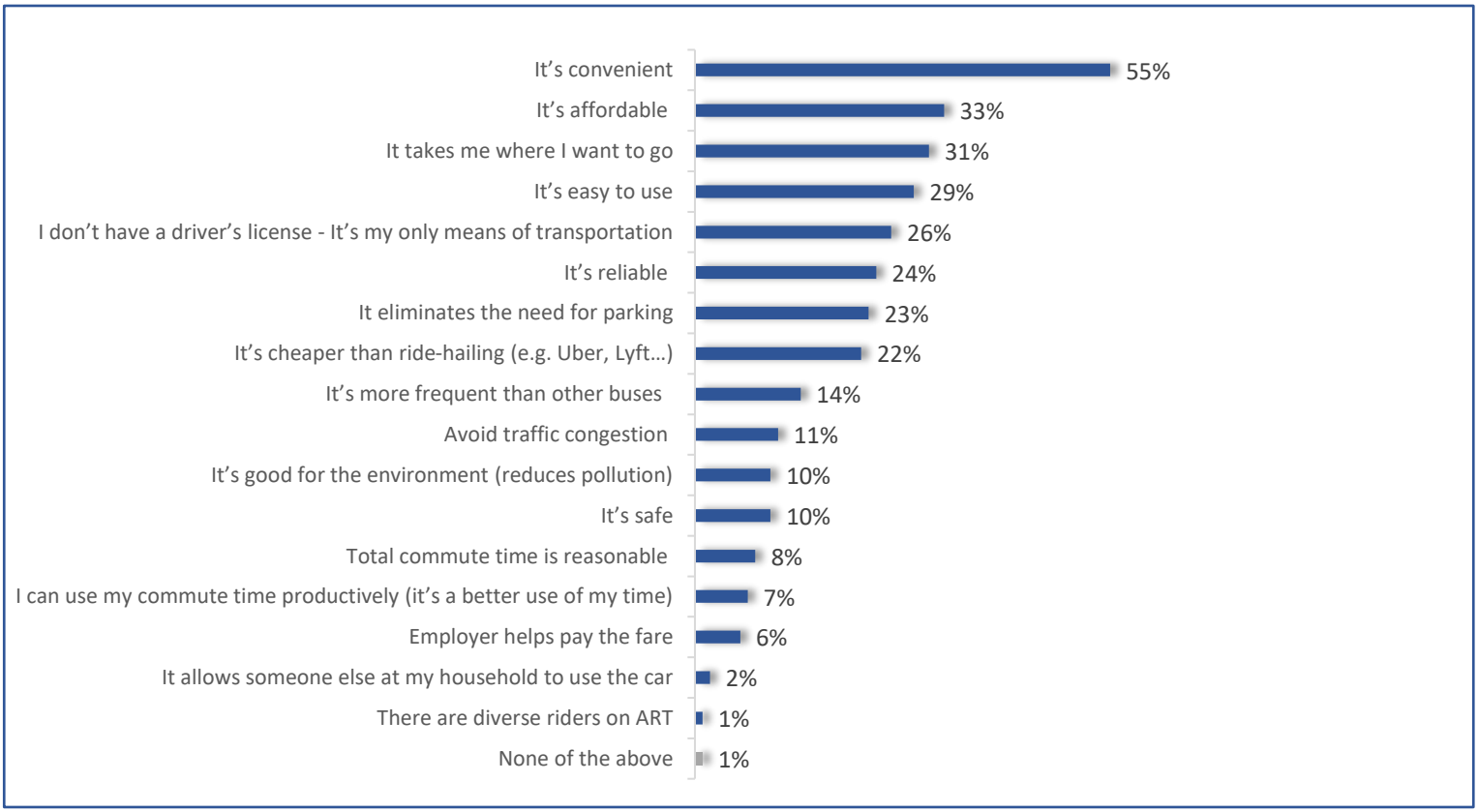
Q4. What is the purpose of this trip?
Base = Those answering (n=981)
Multiple Responses Accepted

Top Reasons for Riding ART

Respondents were asked to list the top five reasons they choose to ride ART. On average, riders provided three reasons for riding. The responses mentioned most often include: it is convenient (55%), affordable (33%), takes them where they want to go (31%), and is easy to use (29%). Notably, 26% choose to ride ART because they do not have a driver's license and/or it is their only means of transportation[7]. Other top answers include that ART is reliable (24%), it eliminates the need for parking (23%), and it is cheaper than ride-hailing (22%). When interpreting the results from this measure, it is important to keep in mind that the respondents were asked only to list the *top five* reasons for riding ART but a rider may consider many or all of these factors when choosing to ride ART.

The proportion of respondents who mention choosing ART because it is cheaper than ride-hailing (22%) and/or more frequent than other buses (14%) is notable in that this demonstrates a preference for ART in context of the competitive landscape. In other words, these riders are driven towards ART due to a shortcoming of a competitor.

Figure 26: Top Five Reasons for Riding ART



Q5. Thinking about all of the reasons you choose to ride ART, please tell me your top five reasons for riding.
Base = Those answering (n=976)
Multiple Responses Accepted

[7] These results are not comparable to the findings from 2013 due to changes in response parameters. Respondents were asked to select all applicable reasons in 2013, but only the top five reasons in 2019.

Regardless of rider-type, most riders choose to ride ART because it is convenient. However, choice riders are more likely than transit dependent riders to cite convenience as a reason (60% vs. 43%). Choice riders are also more likely to choose ART because it takes them where they want to go (33% vs. 25%), it eliminates the need for parking (29% vs. 9%), helps them avoid traffic congestion (14% vs. 4%), the total commute time is reasonable (9% vs. 4%), they can use the commute time productively (9% vs. 2%), and/or their employer helps pay the fare (7% vs. 2%). Conversely, transit dependent riders are significantly more likely to cite choosing ART because it is safe (11% vs. 9%).

Table 22: Top Five Reasons for Riding ART by Ridership

	Transit Dependent (n=217) A	Choice Ridership (n=749) B
It's convenient	43%	60%[A]
It's affordable	28%	35%
It takes me where I want to go	25%	33%[A]
It's easy to use	32%	28%
It's reliable	22%	25%
It eliminates the need for parking	9%	29%[A]
It's cheaper than ride-hailing (e.g. Uber, Lyft…)	26%	21%
It's more frequent than other buses	14%	15%
Avoid traffic congestion	4%	14%[A]
It's good for the environment (reduces pollution)	7%	11%
It's safe	11%[B]	9%
Total commute time is reasonable	4%	9%[A]
I can use my commute time productively (it's a better use of my time)	2%	9%[A]
Employer helps pay the fare	2%	7%[A]
It allows someone else at my household to use the car	1%	3%
There are diverse riders on ART	<1%	1%

Q5. Thinking about all of the reasons you choose to ride ART, please tell me your top five reasons for riding.
Base = Those answering
Multiple Responses Accepted
Significant differences are shown through the use of letters.

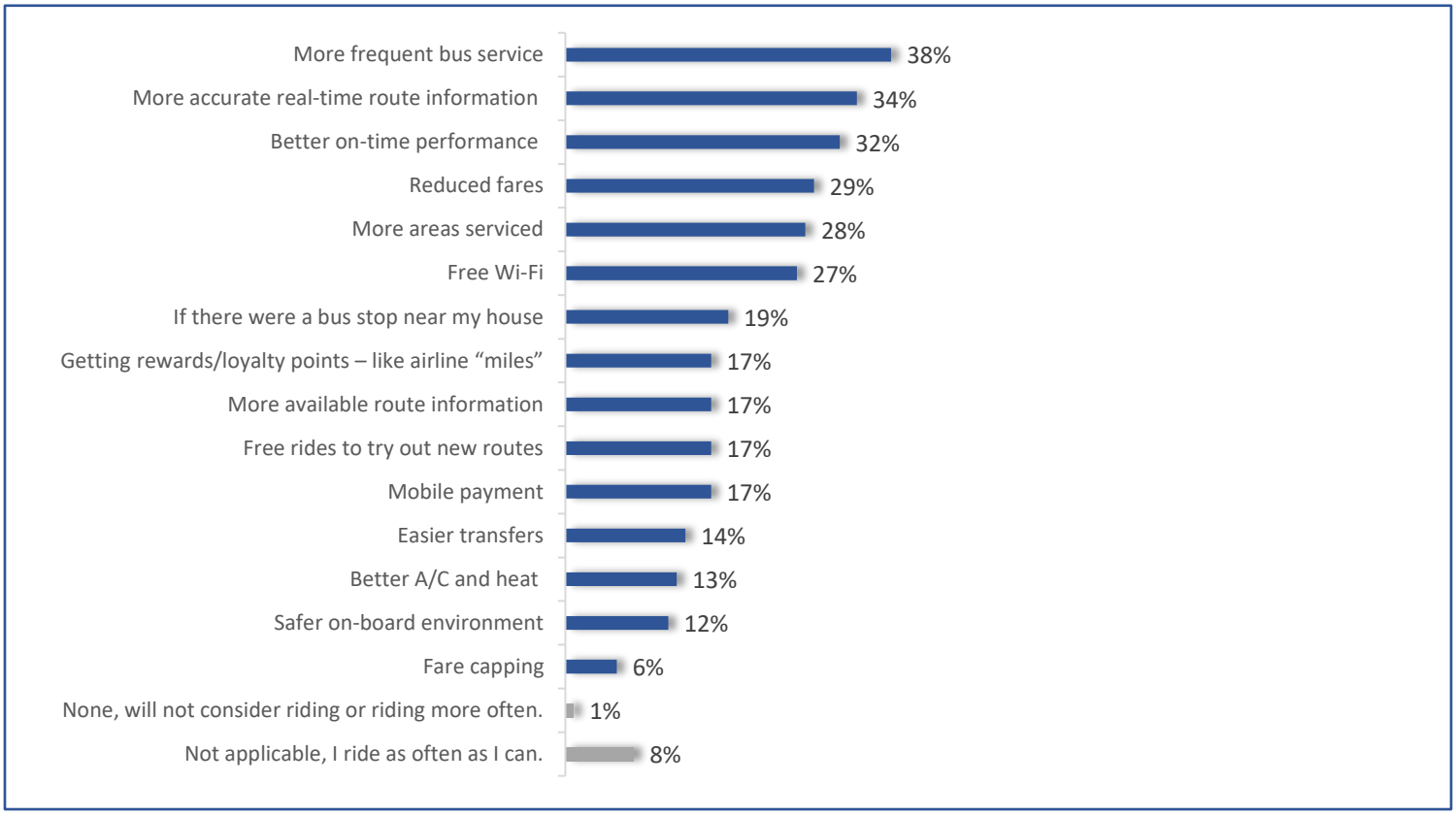
Ways to Increase Ridership

The ART riders who participated in this survey were read a list of items that might encourage someone to choose to ride the ART bus more often and asked to indicate the top five that would encourage them to do so. The responses selected most often were more frequent bus service (38%), more accurate real-time route information (34%), better on-time performance (32%), reduced fares (29%), more areas serviced (28%), and free Wi-Fi (27%).

Notably, 1% of riders indicated that none of these would encourage them to ride more often and 8% said they already ride as often as they can. This suggests that there is significant opportunity for Arlington Transit to make enhancements that will increase ridership onboard ART buses.

The choice riders were significantly more likely than transit dependent riders to select more accurate real-time route information (37% vs. 28%).

Figure 27: Top Five Ways to Encourage Ridership



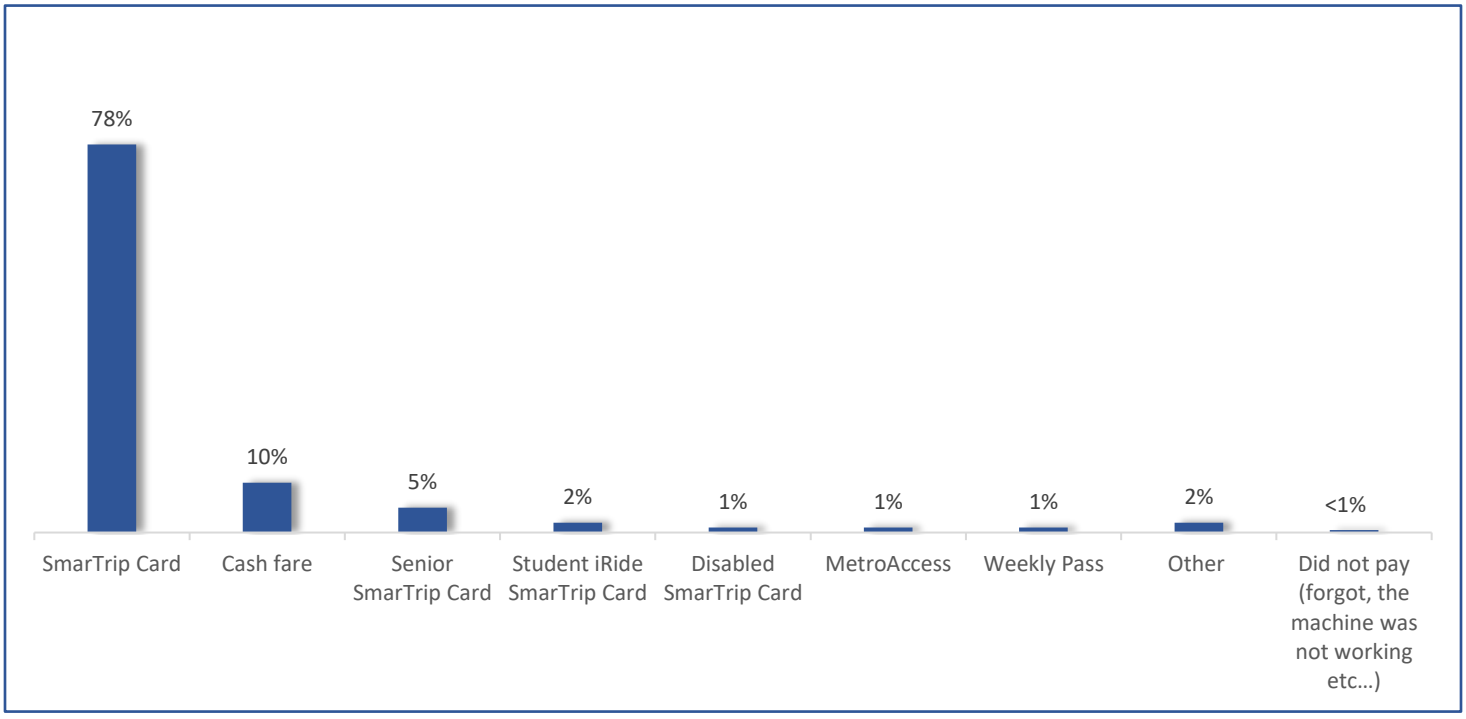
Q10. I'm going to read a list of some things that might encourage someone to ride the ART bus more often. Please tell me which of the following, if any, apply to you. I can accept your top five choices.
Base = Total sample (n=993)
Multiple Responses Accepted

Payment Method

According to this research, 86% of riders pay for their ART fare with a SmarTrip Card, while 10% pay with cash. Notably, choice riders are significantly more likely to pay for their bus fare with a SmarTrip Card (89% vs. 81%), while transit dependent riders are significantly more likely to pay for their fare with cash (14% vs. 8%).

While 96% of riders who are senior citizens paid for their fare with a SmarTrip Card, only 67% used a senior SmarTrip Card. This might suggest that awareness of the senior SmarTrip Card is limited; the reduced fare offered through this card should be promoted to potentially increase ridership among senior citizens.

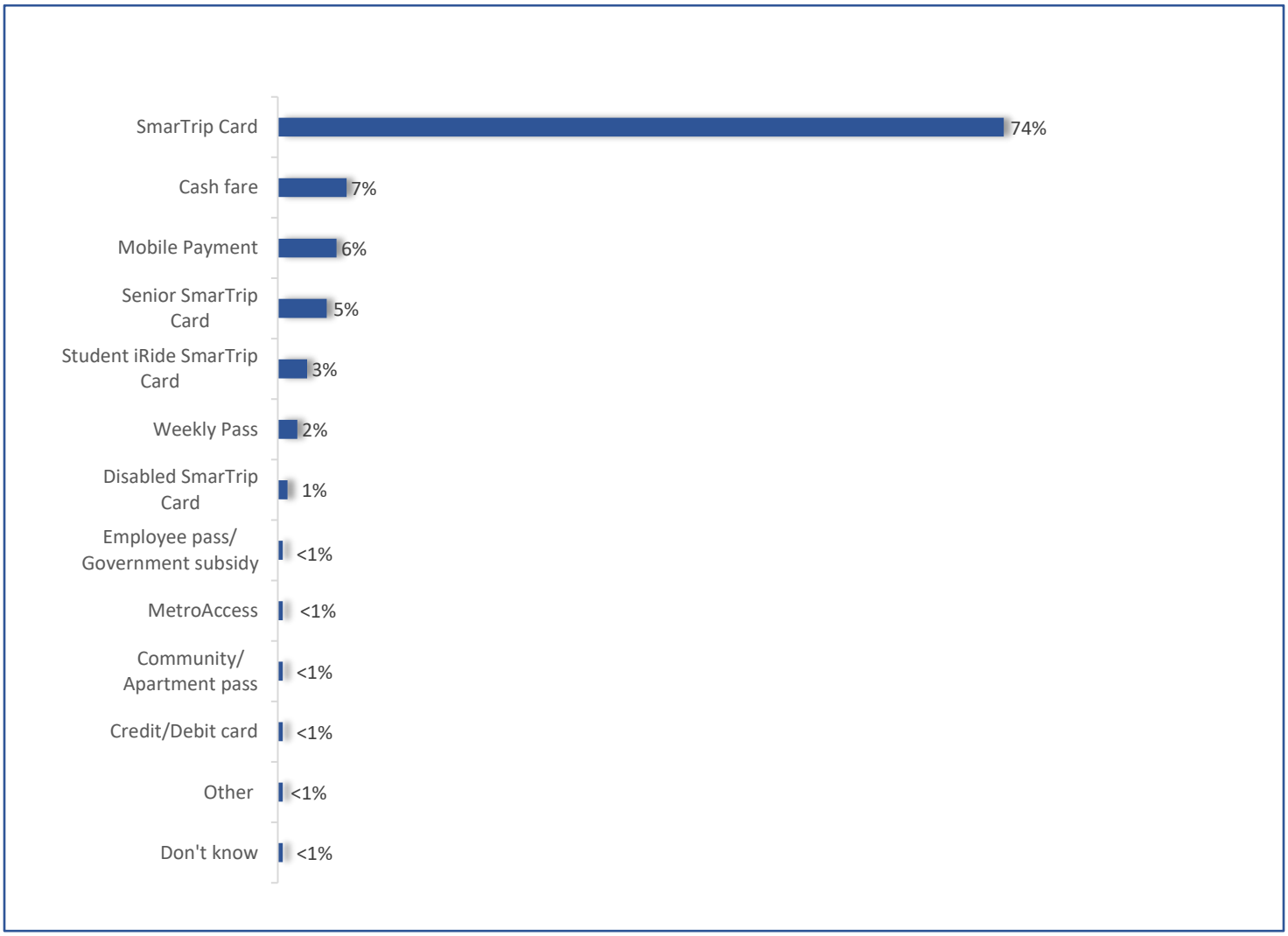
Figure 28: Payment Method for Surveyed Trip



Q11. How did you pay for this bus fare today?
Base = Total sample (n=993)

Surveyed respondents were asked which method of payment they would prefer to use, regardless of the payment method they used that trip. Most riders (83%) would prefer to use a SmarTrip Card. Interestingly, while the results from the focus group portion of this research suggested that non-ART riders find mobile payment to be an attractive offering, this option was only selected by 6% of current ART riders.

Figure 29: Preferred Method of Payment



Q12. How would you prefer to pay for your bus fares?
Base = Total sample (n=993)

ART Alternatives

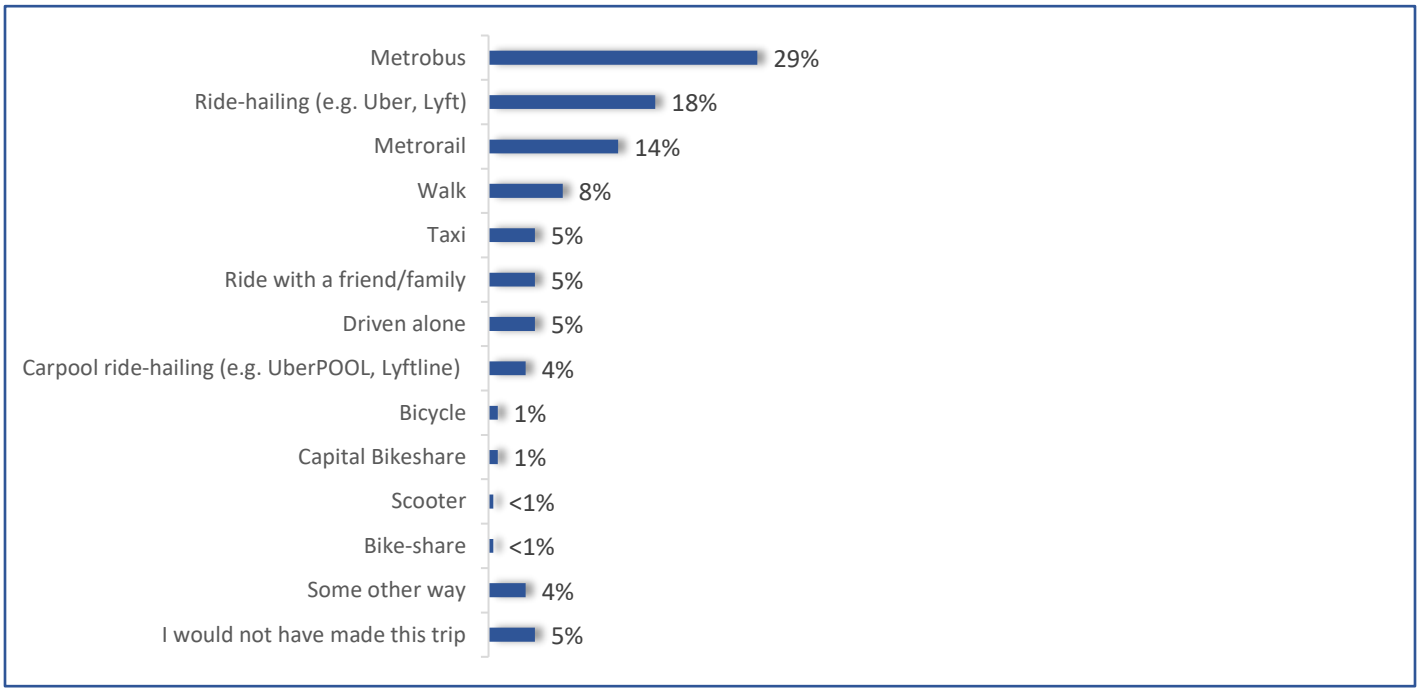
If ART had been unavailable for the surveyed trip, 29% of riders would have used Metrobus to make the trip instead, followed by ride-hailing (18%) and Metrorail (14%). Notably, the proportion of riders who would have driven alone has decreased since 2013 (5% in 2019 vs. 13% in 2013). Ride-hailing was not nearly as prevalent in 2013 as it is in 2019 (in fact, it was not included as an option in 2013), and it is possible that has greatly impacted the responses to this question. If ART had been unavailable, 5% of trips would not have been possible; this is relatively consistent with the 7% found in 2013.

Interestingly, these results are relatively consistent between those who use ART for the longest distance of their trip and those who use another mode of transportation. Significant differences are visible among age groups. While those 35 and older are most likely to turn to Metrobus if ART is unavailable, those under 35 demonstrate a preference for ride-hailing.

Both rider types are most likely to choose Metrobus if ART is unavailable. However, Choice riders are significantly more likely to choose Metrorail (18% vs. 5%), while transit dependent riders are more likely to choose a taxi (10% vs. 3%) or a ride with a friend or family member (8% vs. 4%).

Notably, the likelihood to use ride-hailing if ART is unavailable does not change across income levels. However, those who earn more than $35,000 a year are more likely than those who earn less to use Metrorail in this scenario.

Figure 30: ART Alternatives

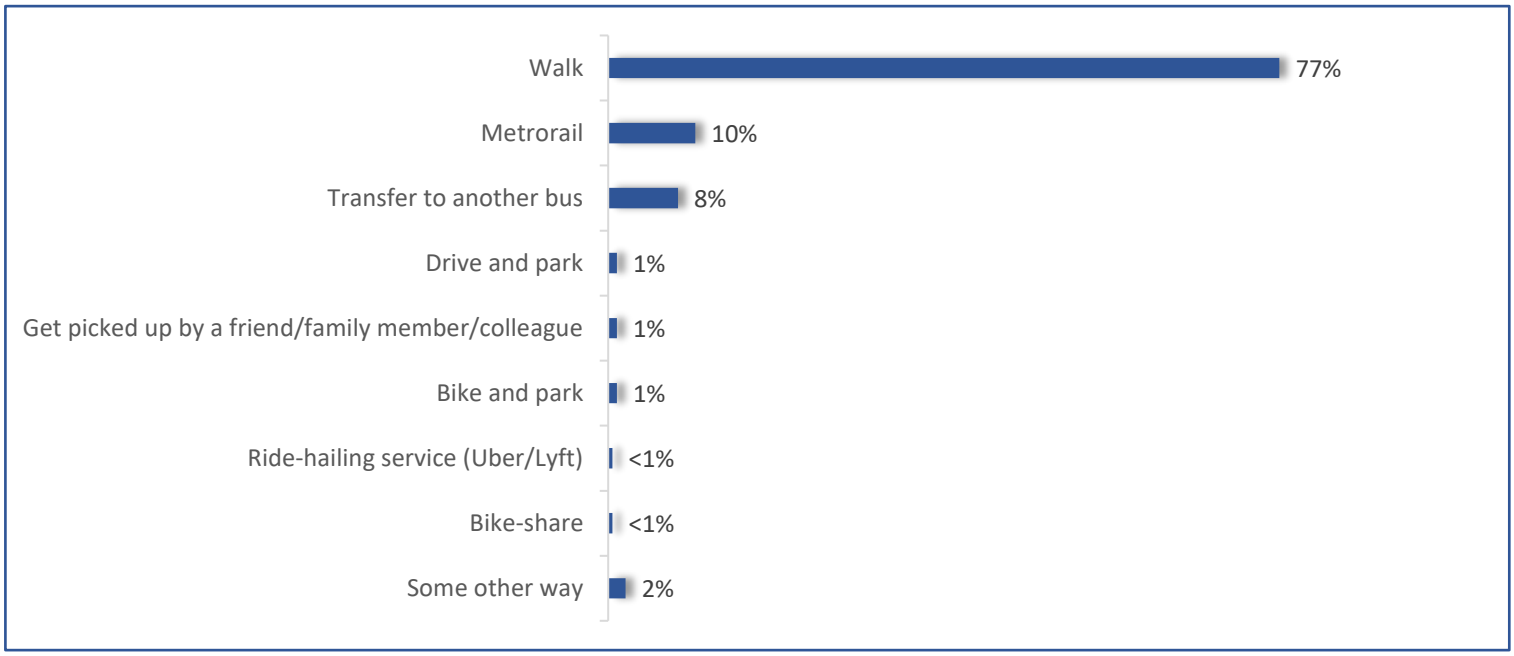


Q13. If ART had been unavailable today, how would you have made this trip?
Base = Total sample (n=993)

After Leaving the ART Bus

After leaving the ART bus, 77% of riders walk to reach their final destination, while 10% take Metrorail and 8% transfer to another bus. This is relatively consistent with the findings from 2013, indicating that the advent of ride-hailing apps has not impacted this aspect of the transportation experience greatly. However, the survey respondents were not asked about how they traveled to the ART bus, so these results may not adequately represent complementary travel modes.

Figure 31: Mode Used After Leaving the ART Bus



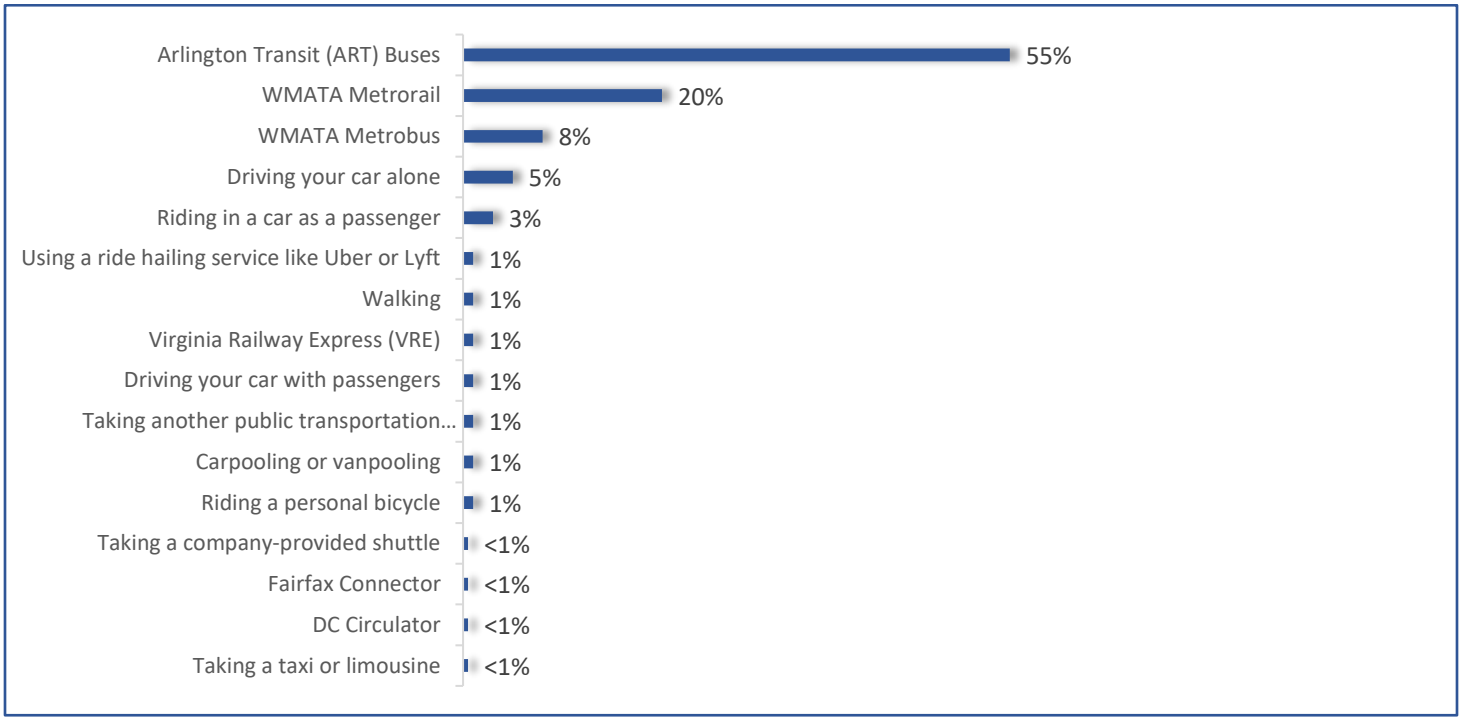
Q13A. How will you get to where you are going after leaving the bus?
Base = Those answering (n=987)

Primary Mode for Work/School

More than half of ART riders (55%) use ART for the longest distance of their trip to go to work and/or school, followed by 20% who use Metrorail. However, since the vast majority of ART riders use ART for at least a portion of their trip to and/or from work, ART is still a key mode in most of these riders' commutes, even if not the primary mode.

Overall, 85% of the ridership uses a mode of public transportation, including ART, for the longest distance of their trip to travel to work and/or school.

Figure 32: Primary Mode for Work/School

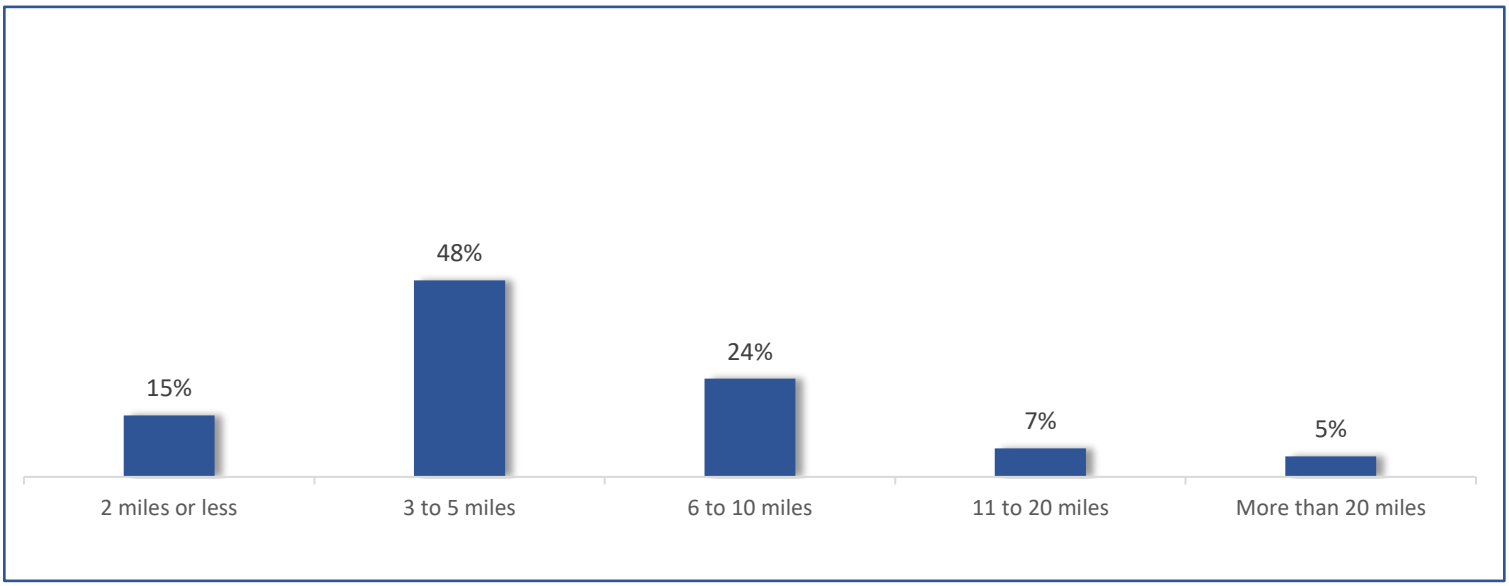


Q16. In a typical week, what type of transportation do you use each day, for the longest distance of your trip, to go TO work/school?
Base = Those who work/attend school and answering (n=900)

Distance to Work/School

Overall, ART riders live an average of 7.2 miles from their work and/or school, with the majority living less than 5 miles away. There are no significant differences between the rider-types for this measure.

Figure 33: Distance to Work/School



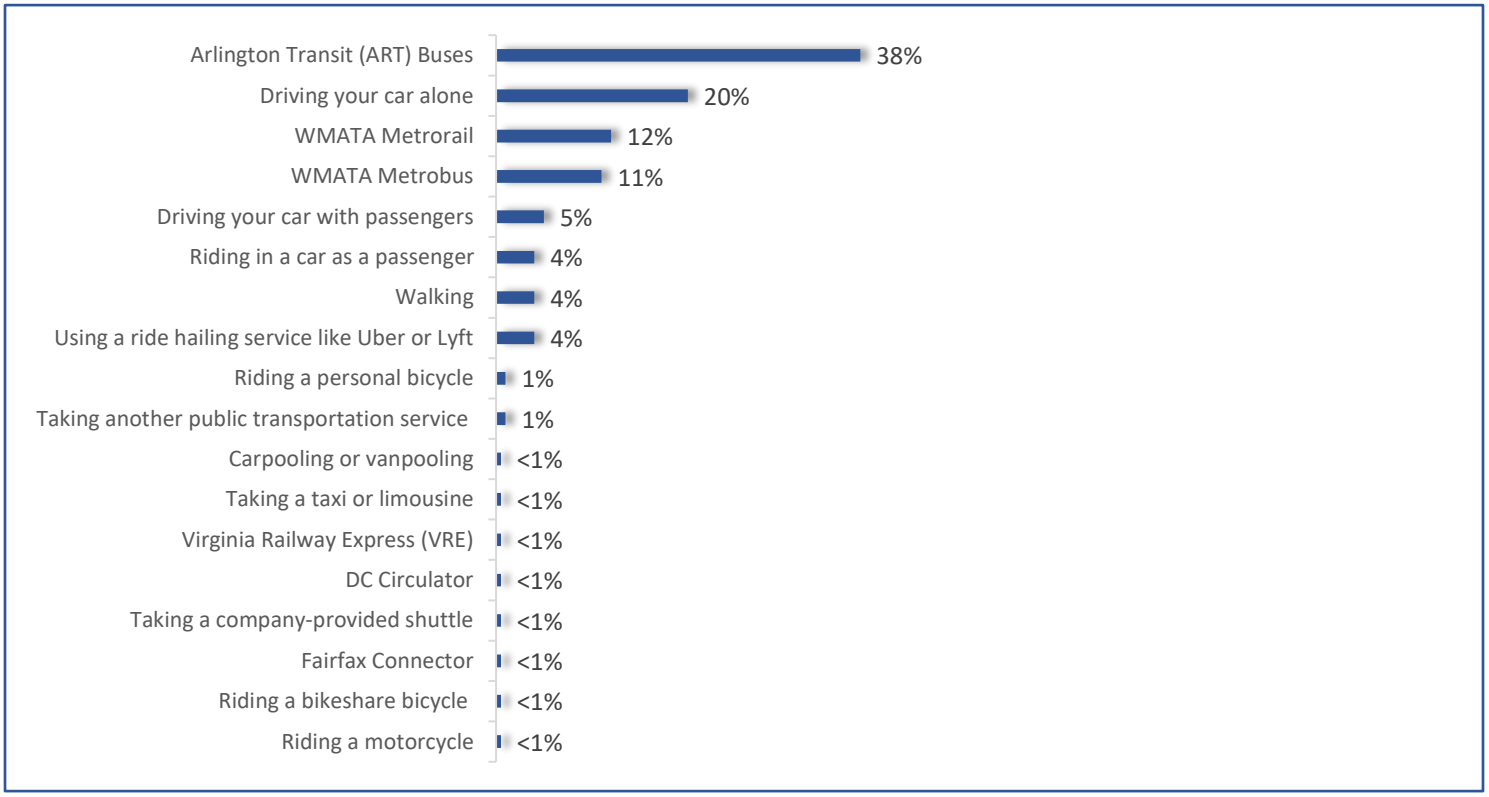
Q15. About how many miles is it from your home to your work or school (one-way)?
Base = Those who work/attend school and answering (n=910)

Primary Mode for Personal Trips

38% of riders use ART for the longest distance of their trip to go to locations for shopping, errands, socializing, etc., followed by 20% who use Metrorail. Overall, 61% of riders use a mode of public transportation, including ART, to get to locations for shopping, errands, socializing, etc.

The primary mode of transportation used to reach locations for shopping, errands, socializing, etc. varies based on the rider-type. Transit dependent riders are more likely to primarily use ART for personal trips (49% vs. 33%), while choice riders are more likely to drive alone (25% vs. 6%) or drive with passengers (7% vs. 1%).

Figure 34: Primary Mode for Personal Trips



Q17. In a typical week, what type of transportation do you use each day, for the longest distance of your trip, to go to locations for shopping, errands, socializing, etc.?
Base = Those answering (n=948)

Travel Changes

Compared to one year ago, 45% of ART riders use ART less often, and another 45% use the service about the same amount. Only 5% of riders use ART more often than one year ago. This is relatively consistent across both rider-types and trip purposes.

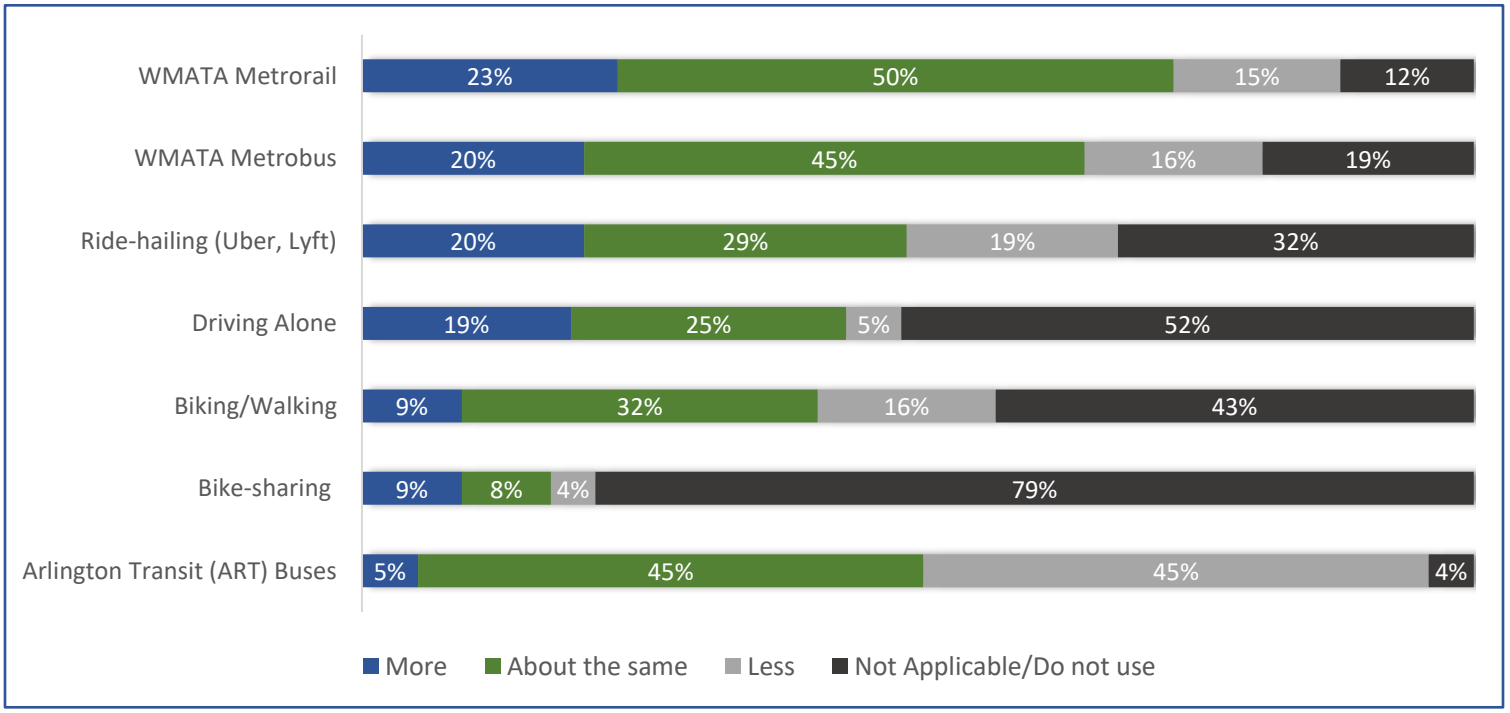
Interestingly, those who ride the ART bus least often demonstrate the proportionally largest increase in ART bus usage (19% using more often than one year ago), while those who ride the ART bus most often (5 or more days per week) are more likely to have decreased their usage or maintained the same amount. These findings are similar to those from TransitCenter's *Who's on Board 2019* report, which finds an increase in the number of "occasional" transit riders (who use transit twice a week or less) but a decrease in the number of both "all-purpose" riders (who use transit at least three times a week for purposes beyond commuting) and "commuter" riders (who use transit at least three times a week solely for commuting) from 2017 to 2019 (Higashide & Buchanan, 2019).

About one-fifth of riders have increased their usage of Metrorail (23%), Metrobus (20%), ride-hailing (20%), and/or driving alone (19%). Notably, a similar proportion of riders have *decreased* their use of ride-hailing (19%).

However, since this survey does not provide the insight of those who stopped riding ART entirely in the past year, further exploration of lapsed riders is needed to fully understand how the advent of ride-hailing has impacted ART ridership.

While there is a reported increase in bike-sharing use, this service is not used by the majority of ART rider (79%).

Figure 35: Travel Changes



Q18. Compared to one year ago, please tell me if you are using each of the following modes more, less, or about the same amount.
Base = Total sample (n=993)

6 RESULTS FROM ONLINE RESEARCH AMONG ARLINGTON COUNTY RESIDENTS AND WORKERS

METHODOLOGY

Data Collection

An online panel was utilized to reach respondents who live, work, and/or go to school in Arlington County. This portion of the research did not stipulate that respondents use any form of public transit, so the results from this survey include those who use public transportation in the Washington, DC metropolitan area and those who do not. This survey was offered in English and respondents were offered an incentive for their participation through the sample provider.

Most respondents who started and qualified for this research survey completed the survey, but there are visible drop-off points at questions S2 and S3 (please refer to Appendix for the Survey Questionnaire). Overall, 399 online panel surveys were completed between March 6, 2019 and March 28, 2019.

As this research was not designed to capture only the opinions of Arlington County residents but also those who commute to the area, there is no defined population to compare this sample to in order to assess how representative these results are in comparison to the demographics of Arlington County.

READING THIS REPORT

Sampling Error

As a result of only a portion of the entire population completing a survey, the data are subject to sampling error. A total of 399 surveys results in a maximum standard error of ±4.9 percentage points at the 95% confidence level. However, depending on the data being examined, the sampling error may be smaller. Sampling errors are shown below at the 95% confidence level for various percentages.

Table 23: Sampling Error

If the percentage found is around:	50%	40% or 60%	30% or 70%	20% or 80%	10% or 90%	1% or 99%
The standard error in percentage points is:						
Total sample (n=399)	±4.9	±4.8	±4.5	±3.9	±2.9	±1.0

For example, if a question yielded a percentage of 20%, then we can be sure 95 out of 100 times that the true percentage would lie between 16.1% and 23.9% (20% ±3.9 percentage points).

Caution should be taken when evaluating data with a small sample size or base (n<50) due to the high level of sampling error around the data, which can lead to results that do not accurately represent the population as a whole.

Percentages do not always add up to 100% due to rounding.

Statistical Significance

Statistical significance means that there is a 95% chance that a difference found in this research would also have been found if everyone who lives and/or works in Arlington County had been surveyed. Depending on the data being examined, t-tests and z-tests were utilized to determine if the differences observed between various groups were statistically significant. The word 'significant' will be used through the report to identify the presence of statistically significant differences.

Where appropriate, comparisons have been made between gender, age, transportation usage, income, and other descriptors. Due to the variability of the types of comparisons made, any chart that includes statistical testing includes a footnote to explain how to read that table.

KEY FINDINGS

Overview of Findings

The findings from this research suggest that while those who use ART are satisfied with the service, there is opportunity to increase ridership through making enhancements to the service and disseminating information about ART, which will be explored in detail in this report. Notably, this research found that those who stopped or decreased their use of ART buses most often did so based on personal life circumstances, such as a change in job or residential location. In other words, the decline in ridership does not appear to be due to negative experiences or perceptions of ART.

The final online sample was segmented into three groups based on the types of transportation used in a typical week: frequent ART riders (25%), public transit riders who do not ride ART (31%), and those who do not typically use any public transit (37%)[8]. Throughout the report, comparisons will be made between these three groups of respondents to examine whether the experiences and perceptions of traveling throughout Arlington County differ based on the respondents' travel patterns. For example, this research suggests that it may be easier to earn more trips from those who already take another form of public transportation than to earn more trips from those who primarily drive. For clarity, the definition for each group is outlined below:

- ***Frequent ART riders*** are those who indicate that they use the ART bus in a typical week to travel to work/school and/or personal trips.
- ***Public transit riders*** are those who do not take ART in a typical week, but use other forms of public transportation. This group includes those who never take the ART bus (65%) as well as those who have used ART buses before but do not ride ART in a typical week (35%).
- ***Non-public transit users*** are those who do not take any form of public transit in a typical week. Instead, these respondents mostly drive alone (95%).

Experience with ART

Use

Overall, one-half of those surveyed have used ART buses before (50%), while just less than one-half have heard of ART buses but have not used them (48%). On the other hand, only 3% of respondents have never heard of ART buses[9]. Notably, all respondents, regardless of age, gender, or income, were equally likely to have used ART buses before.

[8] Due to non-response patterns, 7% of the sample could not be categorized into any of the transportation segments.

[9] Responses do not add up to 100% due to rounding. To one decimal place, the percentages are as follows: have used ART buses (49.6%), have heard of ART buses but have not used them (47.9%), have not heard of ART buses (2.5%).

Those who have heard of ART buses but not used them were asked why they have not used this service. Almost one-half of these respondents (46%) indicated that they have not used ART because they are satisfied with their current transportation options. Other top mentions include that ART does not go where their destinations are (13%), ART does not suit their lifestyle (12%), and/or they do not know where it goes (the routes) (11%).

Satisfaction

The majority of those who have ever used ART are satisfied or very satisfied with their experience (78%). In fact, few (5%) are dissatisfied or very dissatisfied with their experience. While frequent ART riders gave the highest satisfaction ratings of ART, non-public transportation users gave comparable ratings (85% satisfied or very satisfied vs. 78%). Conversely, public transit riders provided the lowest satisfaction ratings, with 68% indicating that they are satisfied or very satisfied.

Ratings of ART

Overall, about two-thirds of those who have heard of or used ART (64%) agree or strongly agree that they have a positive image of ART buses. However, agreement with this statement is significantly lower among public transit riders (59%) and non-public transit users (57%) than among frequent ART riders (86%). Notably, few (5%) disagree or strongly disagree with this statement. This is an important finding for Arlington Transit in that it suggests that perceptions of ART are not a barrier to usage.

ART receives comparatively lower ratings for the measures that address familiarity, suggesting that there is room for improvement in making information about ART better known.

To assess whether familiarity with the ART system is a potential barrier to usage, this study sought to understand riders and non-riders' level of familiarity across several measures. Overall, ART receives lower ratings for the measures that address familiarity than perceptions of ART. Less than one-half agree or strongly agree that they are familiar with ART's payment options (42%), ART's routes (31%), and/or ART's schedule (30%). Frequent ART riders were significantly more likely to provide positive ratings on these familiarity measures than those who do not ride ART in a typical week. These lower ratings suggest that there is room for improvement in making information about ART better known among those who live and/or work in Arlington County. This is particularly important as a lack of knowledge about and/or familiarity with ART is demonstrated to be a barrier to ART use in this research.

Issues Experienced on ART

Those who have used ART buses (50% of total sample) were asked if they had ever experienced certain problems while riding the bus. While about one-half had never experienced any of these issues (51%), the remainder had encountered some type of problem onboard ART. The problem experienced most often was the bus arriving more than 10 minutes late (31%), followed by the bus being overcrowded (20%), and not showing up at all (13%).

Travel Patterns

Mode Choice in Time-Sensitive Situations

Respondents were asked to select which mode of transportation they would pick to use if they were running late for an appointment, assuming each of the listed modes could get them to their destination. Nearly six in ten respondents would choose to drive a car (58%), followed by one-fourth who would use a ride-hailing service like Uber or Lyft (23%). Notably, only 2% of respondents indicated that they would choose ART in this scenario, suggesting a possible barrier to using the ART bus in time-sensitive situations.

Time-sensitive situations present a potential barrier to ART use.

Access and Awareness of Bus Stops

Overall, the majority of those surveyed live within two blocks of a bus stop (71%), suggesting that limited access to a bus line should not be considered a barrier to transit usage among this population. Furthermore, awareness of the bus stop is high, with only 4% indicating they do not know where the nearest bus stop is.

Travel Changes

Respondents were asked to indicate if they use several modes of transportation more than one year ago, about the same amount, or less than one year ago for trips to work and/or school and personal trips. Interestingly, for each of the modes tested for work trips, there is a roughly even proportion of respondents who have increased and decreased their usage of that mode. For example, while 9% of the total sample have increased their ART bus usage over the past year, 10% have decreased their use. While this might suggest that there is no net change in ridership, it is difficult to determine if the volume of increased usage offsets the volume of decreased usage. In other words, a person who stops riding ART entirely may take away more trips than is added by a person who increased their usage by one trip per week. Perhaps most notable is that a greater proportion of frequent ART riders increased their use of ART in the past year than decreased their use (29% increased and 19% decreased).

Consistent with the pattern seen in the work/school trip changes section, a roughly equal proportion of respondents have increased and decreased their usage of the ART bus for personal trips (8% increased vs. 7% decreased). Unlike changes found among commuting trips, there is a greater proportion of respondents who have increased their ride-hailing use than have decreased their use (19% increased vs. 9% decreased). Conversely, there is a greater proportion of respondents who have decreased their use of Metrorail (15% decreased vs. 9% increased) and Metrobus (10% decreased vs. 5% increased).

Those who have decreased their ART bus usage for either work/school and/or personal trips (10% of the total sample) were asked to indicate what caused that change. About one-third of those who decreased their ART bus use said this change was due to a change in job/school status or location (37%). Other top mentions included that the

routes and schedules were not suitable anymore (27%), their personal preference changed (22%), and/or that they had a change in residential location (20%).

To assess how increased usage of ride-hailing services like Uber or Lyft is affecting ART ridership, respondents were asked to indicate the modes they are using less due to their increased use of ride-hailing services. The top mode mentioned by these respondents was driving alone (56%), followed by Metrorail (35%), getting dropped off or getting rides from friends or family (31%), and/or walking (29%). Nearly two in ten respondents indicated that they use ART bus less often due to an increase in ride-hailing (19%). These results are likely impacted by the high number of people who drive alone included in this research (88%, n=340).

Seeking out Information

As demonstrated throughout this report, access to information may be a key component in increasing ART ridership. Therefore, it is critical to understand the best channels to disseminate information about ART routes and schedules. Overall, about one-third of respondents (34%) said the Arlington Transit website is the best way to provide information, followed by 15% who said social media, and 14% through apps such as Nextdoor. Across the age breakouts, younger respondents show greater preference for digital channels such as social media (19%) and text messaging (12%), while those 55 years of age and older prefer more traditional means of communication such as email (13%) or brochures and pamphlets (13%).

Regardless of rider type, Google Maps/Apple Maps is the tool used most often to access real-time information. However, two of the top three channels frequent ART riders utilize to access real-time information are directly under Arlington Transit influence. Efforts should be made to ensure that the information available on the Arlington Transit website and through physical signage is accurate, up to date, and easily accessible—aspects most valued by users as suggested by previous research.

Nearly six in ten public transit riders look for information directly through a transit agency app or website (based on the high proportion of respondents in this segment who use Metrorail (91%, n=113), this finding may reflect those who use WMATA). Considering that public transit riders tend to turn directly to a transit agency as a source of information, the Arlington Transit website should be promoted to help get information about the ART bus in front of those who do not frequently use this service.

Ways to Increase Ridership

All respondents, regardless of previous ART experience or current ART usage, were asked to select the top five items that are most likely to make them ride the ART bus more often. Overall, the top mentions include more frequent bus service (28%), more areas serviced (26%), reduced fares (23%), free transfers between modes (22%), free rides to try out new routes (22%), and/or free WiFi (20%). Notably, 15% of respondents indicated that there is nothing that will make them ride the ART bus more often and 2% said they already ride as often as they can. This suggests ample opportunity to make enhancements that will increase ridership.

Ways to Increase Ridership:

1. More frequent bus service
2. More areas serviced
3. Reduced fares

Consistent with the findings from the onboard study, more frequent bus service was the top response selected by frequent ART riders in the online survey (40%). This is followed by more areas serviced (34%), reduced fares (31%), free transfers between modes (29%), more accurate real-time schedule information (29%), and better on-time performance (27%).

Notably, frequent ART riders tended to be more likely than the other rider types to select options that would enhance their experience onboard ART buses such as more shelters/benches at bus stops (23%) and newer and more modern buses (15%). Conversely, public transit riders were most likely to select more available route information (34%), further suggesting that lack of information is a barrier to ART usage among non-riders.

Opportunity to convert non-public transportation users into frequent ART riders appears more difficult. One-fourth of these respondents (25%) indicated that there is nothing that will make them ride ART more often. However, this still suggests that it is possible to bring new riders into the system.

With only 10% of respondents between 18 and 34 years old[10] indicating that they will not consider riding ART more often, this demographic demonstrates the largest potential for increased ridership (compared to 22% of those 55 years of age and older). Top mentions from this age group include more frequent bus service (26%), free WiFi (26%), free rides to try out new routes (25%), reduced fares (24%), free transfers between modes (22%), and mobile payment (22%). Compared to their older counterparts, this group also demonstrated higher levels of interest in a rewards/loyalty points system (21%) and better integration with Uber and Lyft (15%).

A close examination of those who indicated they will not consider riding ART more often (15%, n=60) reveals that these respondents are mostly over the age of 35 (73%), employed (78%), and have an average annual household income of $111,100. Most of these respondents have never ridden ART before (84%) but tend to have a positive or neutral image of ART buses (46% and 50%, respectively). When asked why they have not used ART before, most

[10] This age group represents the greatest proportion of respondents (n=156)

said they are satisfied with their current transportation options (57%), ART does not go where their destinations are (17%), and/or ART does not suit their lifestyle (17%).

Overall, this research finds that people are satisfied with ART and are open to using this service more often. However, efforts must be made to incentivize potential riders to start using ART or use the system more often. While current riders would like to see enhancements that would improve their experience on-board the bus, those who do not currently use the system would like to see improvements to the availability of information about ART's routes and schedules.

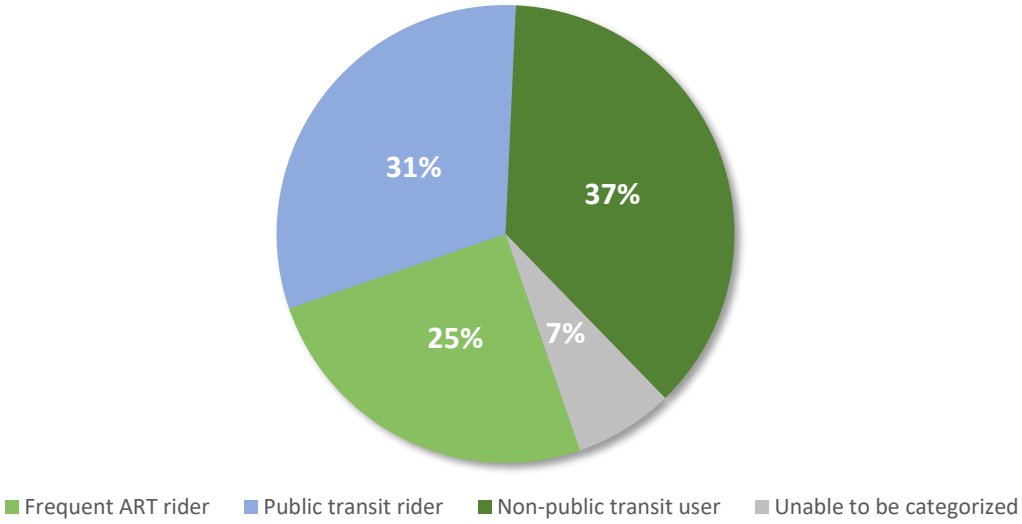
RESPONDENT PROFILE

Transportation Segments

The final online sample was segmented into three groups based on the types of transportation used in a typical week: frequent ART riders (25%), public transit riders who do not ride ART (31%), and those who do not typically use any public transit (37%)[11]. Throughout the report, comparisons will be made between these three groups of respondents to examine whether the experiences and perceptions of traveling throughout Arlington County differ based on the respondents' travel patterns. For example, this research suggests that it may be easier to earn more trips from those who already take another form of public transportation than to earn more trips from those who primarily drive. For clarity, the definition for each group is outlined below:

- ***Frequent ART riders*** (n=99) are those who indicate that they use the ART bus in a typical week to travel to work/school and/or personal trips.
- ***Public transit riders*** (n=124) are those who do not take ART in a typical week, but use other forms of public transportation. This group includes those who never take the ART bus (65%) as well as those who have used ART buses before but do not ride ART in a typical week (35%).
- ***Non-public transit users*** (n=148) are those who do not take any form of public transit in a typical week. Instead, these respondents mostly drive alone (88% drive a car to work/school; 95% drive a car for personal trips).

Figure 36: Transportation Segments



S2. In a typical week, how many one-way trips do you take for personal trips (such as shopping, errands, dining out, or visiting friends or family)?
S3. In a typical week, how many one-way trips do you take for work/school?
Base = Total sample (n=399)

[11] Due to non-response patterns, 7% of the sample could not be categorized into any of the transportation segments.

Employment Status and Income

The majority of respondents are employed at least part-time (69% employed full-time; 10% employed part-time). However, there is a sizeable portion who are not employed and not currently looking for work (16%). Most of the respondents who selected this response option are over the age of 55, suggesting that this could be understood as 'retired'.

Among all respondents, the median reported income is $105,500, with about two-thirds of respondents (65%) reporting a household income of at least $75,000 a year. The median income reported by frequent ART riders in this study is higher than the income reported by those who participated in the intercept portion of this research ($82,000 vs. $51,500), which may impact the results when comparing this data to the findings from the onboard research.

Age and Gender

The respondents in this study span a range of ages, with 39% falling between the ages of 18 to 34, 34% between the ages of 35 and 54, and 27% between the ages of 55 and 85. More females participated in this study than males (61% vs. 39%).

Race and Ethnicity

Compared to the riders surveyed for the onboard study, this population is far less racially and ethnically diverse. Most of the online respondents identify as White (81%), and non-Hispanic (88%)[12], while only four in ten onboard respondents identified as White (39%) and three-fourths as non-Hispanic (74%).

Personal Vehicle

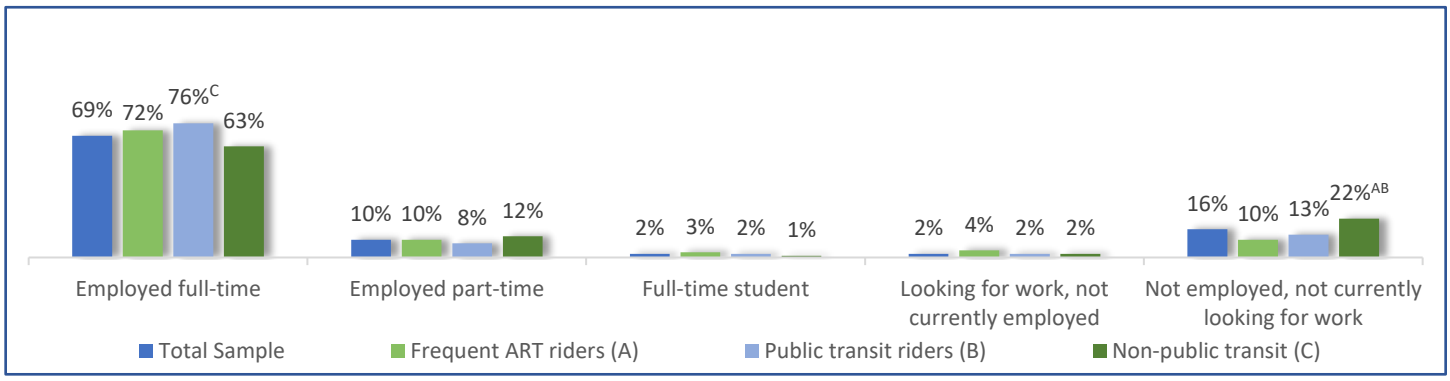
Overall, about two-thirds of those surveyed (67%) have access to a vehicle all of the time. Notably, even most of those who use ART and/or other forms of transportation have access to a vehicle all or most of the time (71% of frequent ART riders; 79% of public transit riders), suggesting that most of these respondents are potentially choice riders.

Household Makeup

The average household size reported in this research is 2 people. Most of those surveyed do not live in a household with children under the age of 18 (75%).

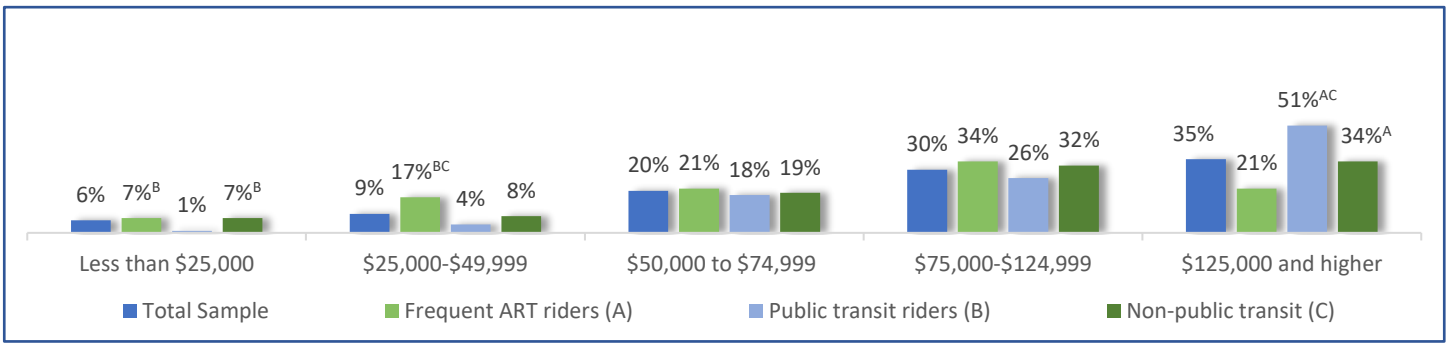
[12] To align with the census, respondents are asked two separate questions that address race/ethnicity. One question asks if the respondent identifies as Hispanic or Latino. The second question asks with which racial or ethnic group or groups the respondent identifies.

Figure 37: Employment Status



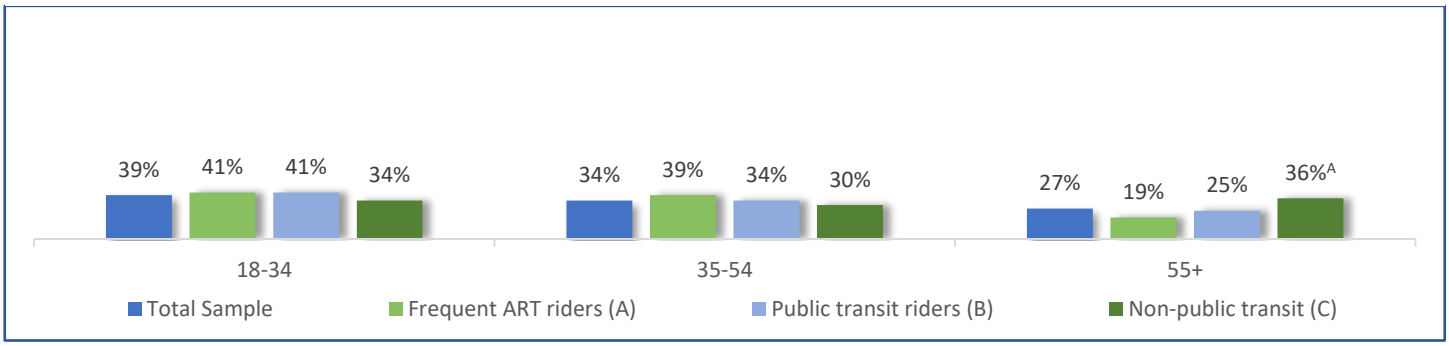
Q5. Which of the following best reflects your current employment status?
Base = Those answering (Total sample, n=395; Frequent ART riders, n=98; Public transit riders, n=123; Non-public transit, n=147)
Significant differences are shown through the use of letters; A = value is significantly greater than ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Figure 38: Household Income



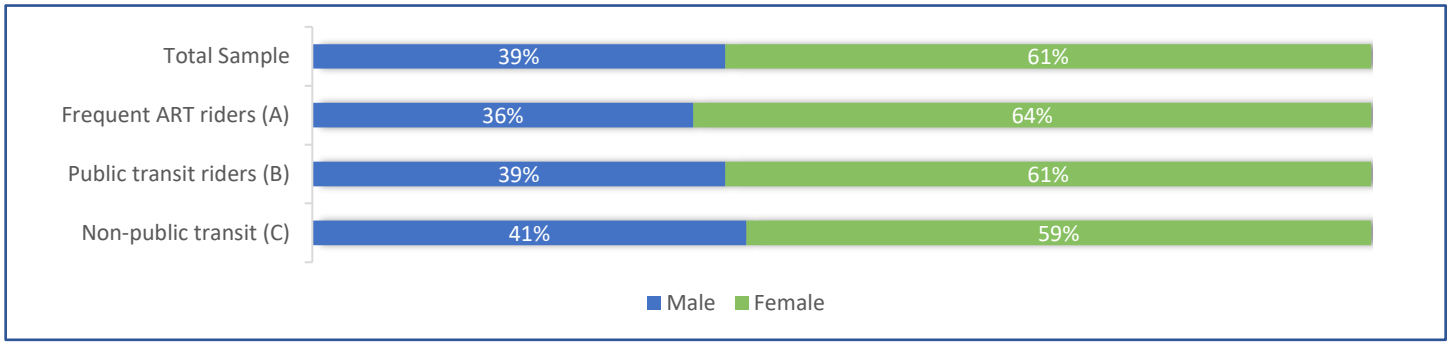
D6. Which category best describes your household's total annual income?
Base = Those answering (Total sample, n=377; frequent ART riders, n=95; Public transit riders, n=119; Non-public transit, n=137)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Figure 39: Age



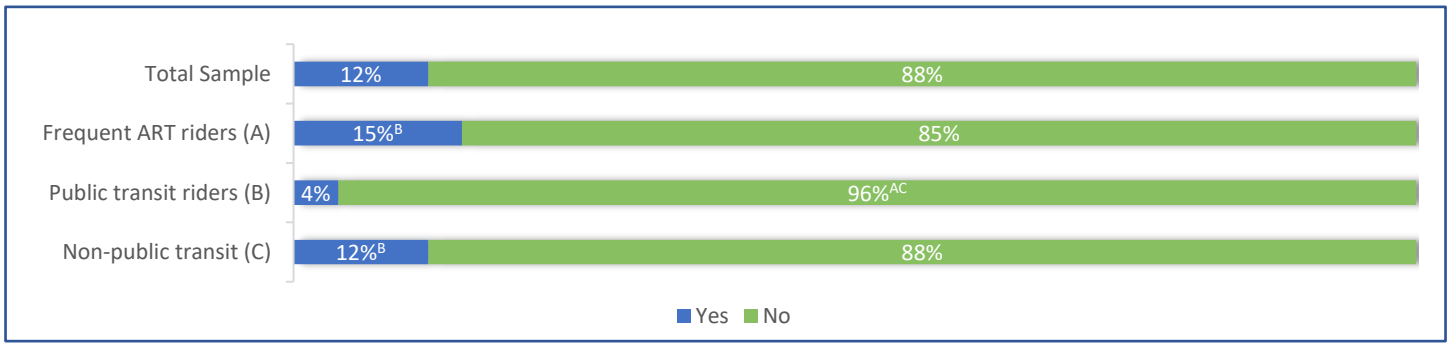
S1C. In what year were you born?
Base = Total sample (Total sample, n=399; Frequent ART riders, n=99; Public transit, n=124; Non-public transit, n=148)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Figure 40: Gender



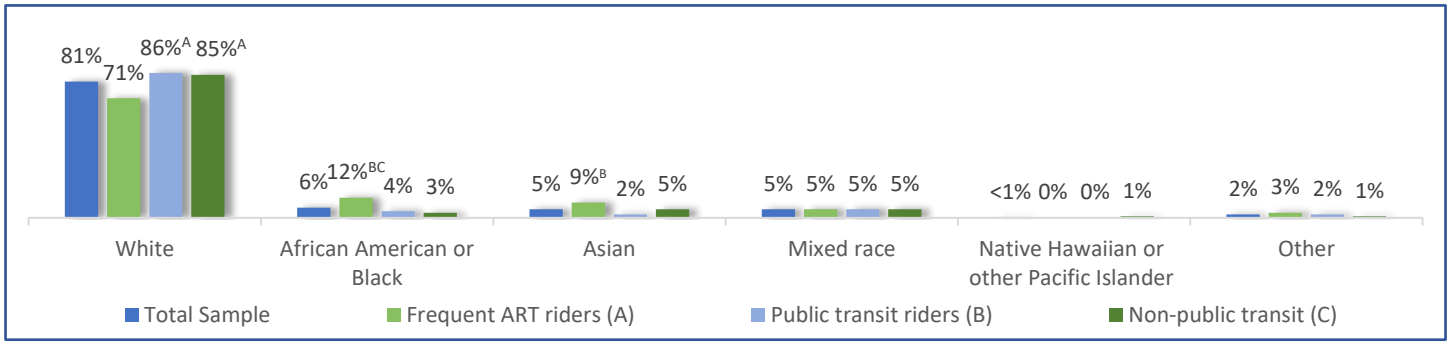
D2. Are you?
Base = Those answering (Total sample, n=397; Frequent ART riders, n=97; Public transit riders, n=124; Non-public transit, n=148)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Figure 41: Hispanic/Latino



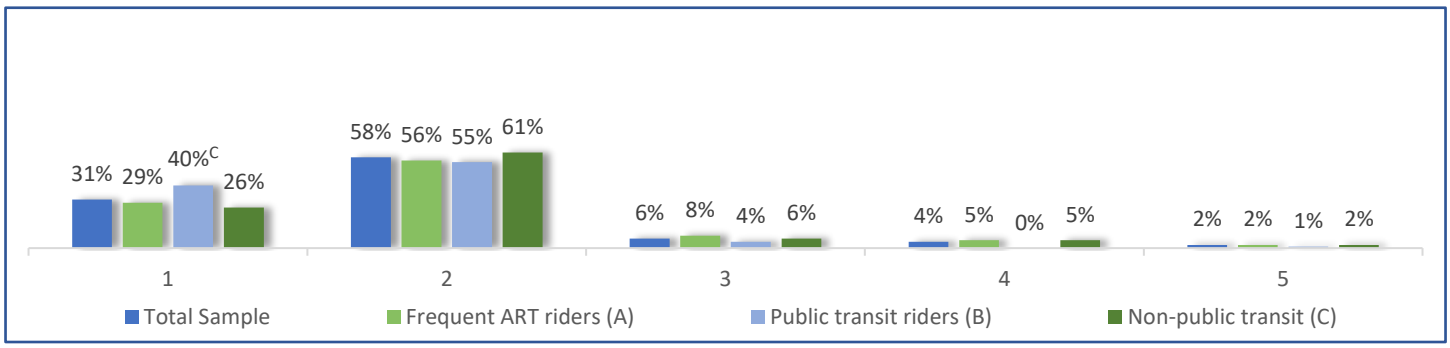
D3. Are you of Hispanic or Latino descent?
Base = Those answering (Total sample, n=390; Frequent ART riders, n=97; Public transit riders, n=123; Non-public transit, n=143)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Figure 42: Race/Ethnicity



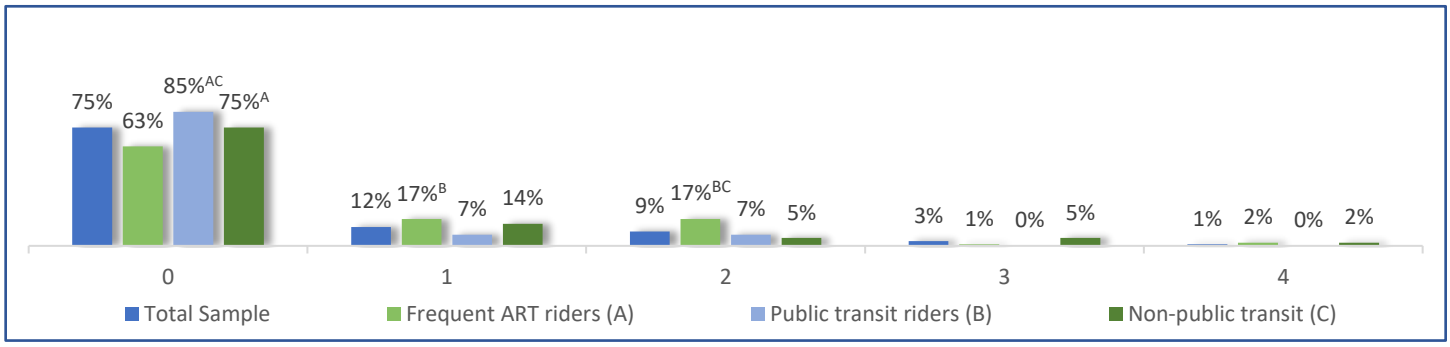
D4. With which racial or ethnic group do you identify?
Base = Those answering (Total sample, n=387; frequent ART riders, n=95; Public transit riders, n=122; Non-public transit, n=145)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Figure 43: Number of Adults 18+



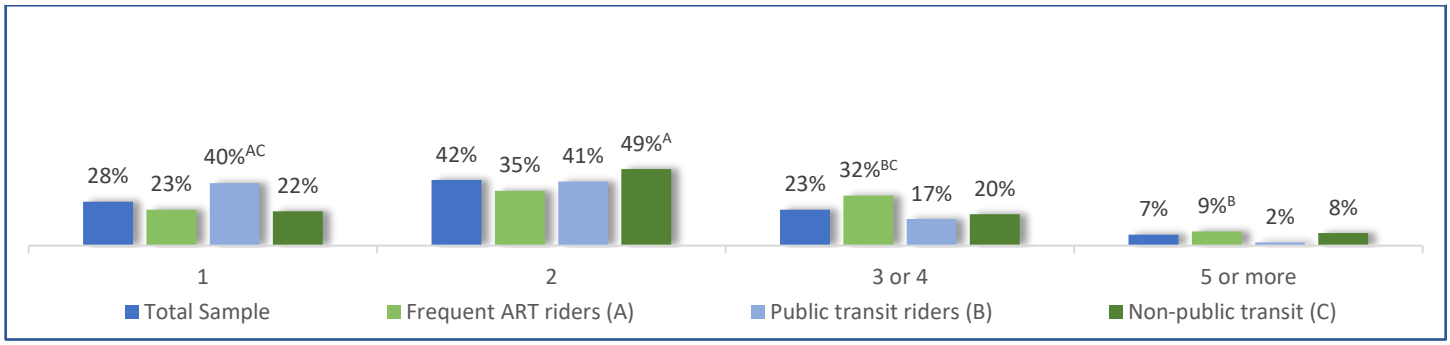
D5A. Including yourself, how many people live in your household? Number of adults 18+.
Base = Total sample (Total sample, n=399; Frequent ART riders, n=99; Public transit riders, n=124; Non-public transit, n=148)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Figure 44: Number of Children Under 18



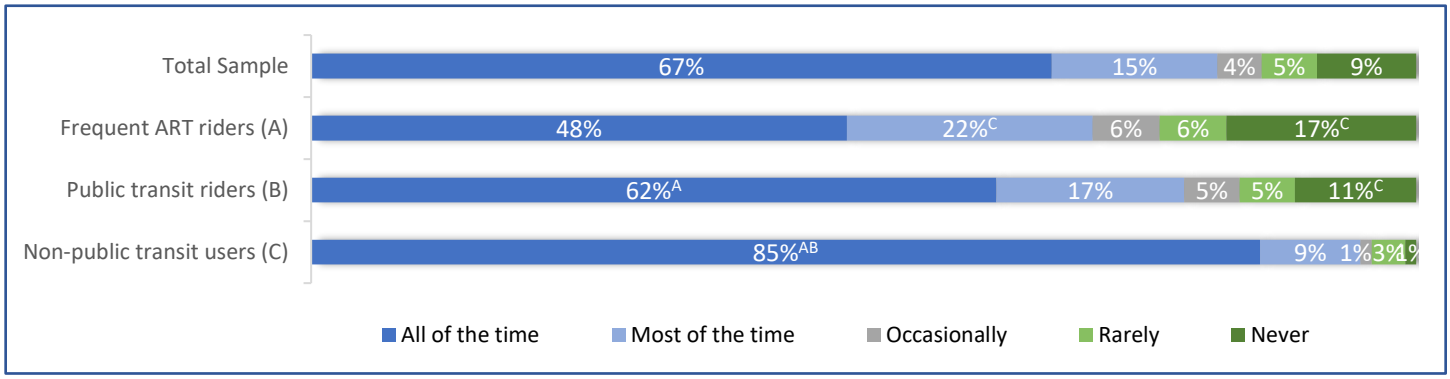
D5B. Including yourself, how many people live in your household? Number of children under 18.
Base = Total sample (Total sample, n=399; Frequent ART riders, n=99; Public transit riders, n=124; Non-public transit, n=148)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Figure 45: Household Size



D5A. Including yourself, how many people live in your household?
Base = Total sample (Total sample, n=399; Frequent ART riders, n=99; Public transit riders, n=124; Non-public transit, n=148)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Figure 46: Access to Personal Vehicle



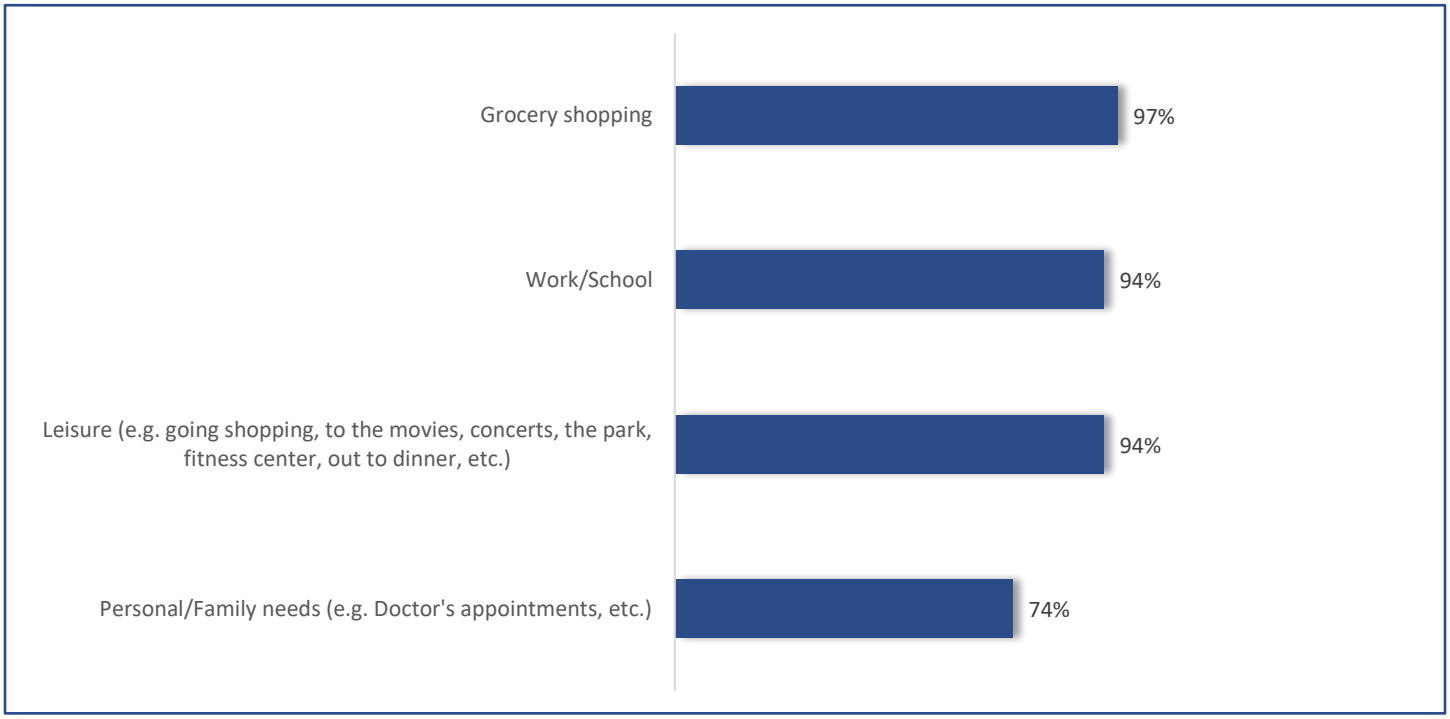
D7. How often do you have a personal vehicle available to you?
Base = Total sample (Total sample, n=399; Frequent ART riders, n=99; Public transit riders, n=124; Non-public transit, n=148)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

TRAVEL PATTERNS

In a typical week, 94% of respondents indicated making at least one trip to work/school, 97% for grocery shopping, 94% for leisure and 74% for personal/family needs.

Looking at the median number of trips taken each week[13], respondents who work or go to school typically make 10 one-way trips each week. The frequency of personal trips taken each week is lower, with respondents taking a median of 4 one-way trips for leisure, 2 one-way trips for grocery shopping, and 2 one-way trips for personal needs.

Figure 47: Those Who Take at Least One Trip in a Typical Week



Q4. In a typical week, how many one-way trips do you make to the following destinations?

[1]Base = Those who work or go to school and answering (n=315)

[2]Base = Those answering (n=376-387)

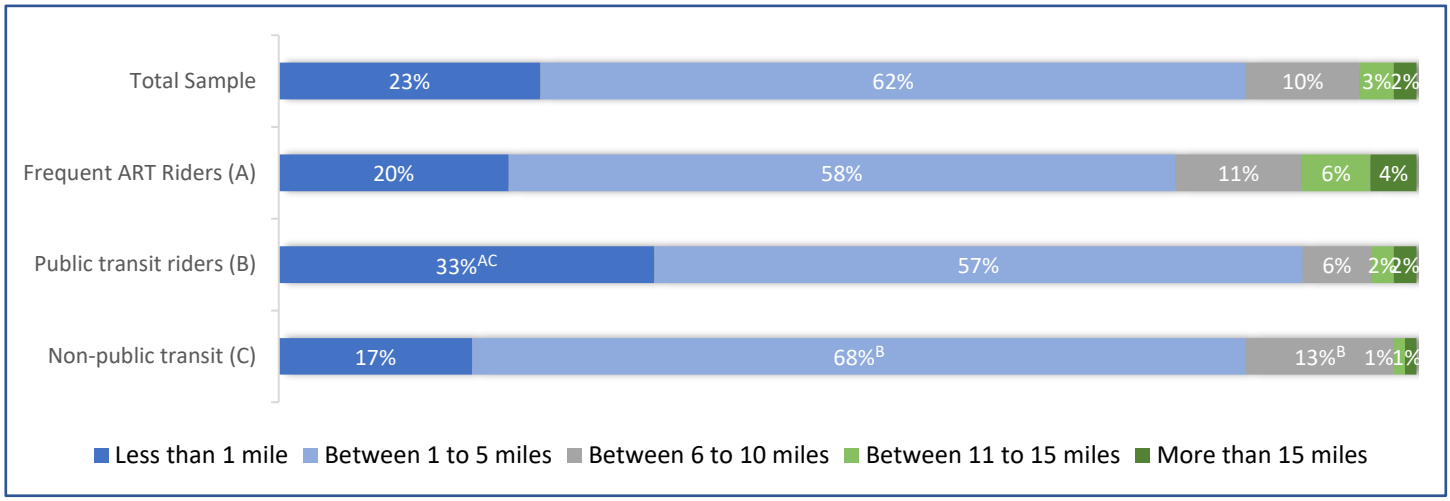
[13] Due to the presence of outliers, the median best represented the true central tendency.

Personal Trips

Distance Traveled for Personal Trips

Regardless of rider type, most respondents travel between 1 and 5 miles to shop for household needs (e.g. groceries, clothing, or other household supplies). However, public transit riders are the most likely to travel less than 1 mile to shop for these needs. It is possible that this difference is due to the larger proportion of public transit riders who primarily walk to make personal trips (31% of public transit riders, compared to 20% of frequent ART riders and 9% of non-public transit users).

Figure 48: Distance Traveled for Household Needs



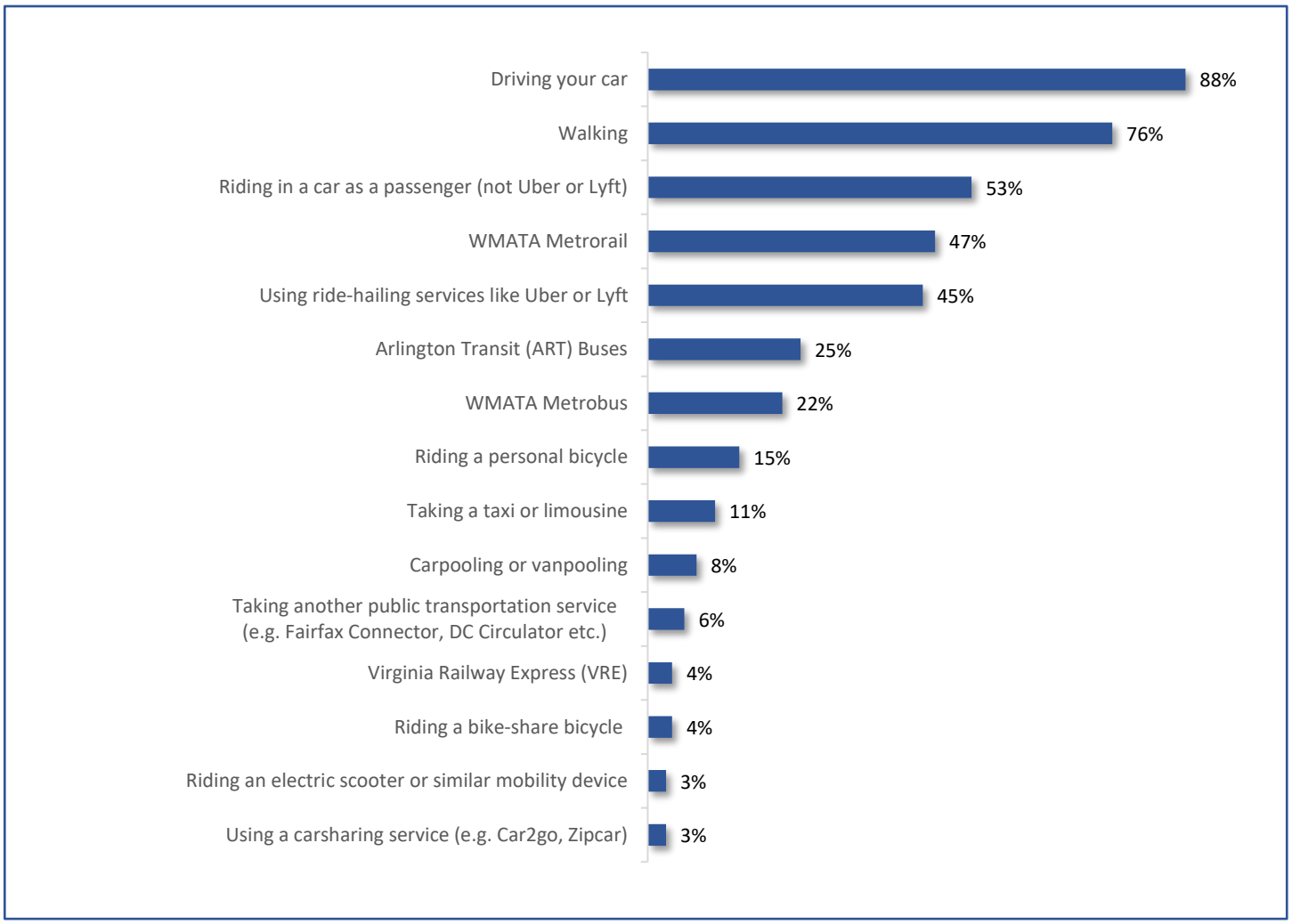
Q2. How far do you typically travel from your home to shop for your household needs (e.g. groceries, clothing, or other household supplies)?
Base = Those answering (Total sample, n=397; Frequent ART riders, n=98; Public transit riders, n=124; Non-public transit, n=147)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Modes Used to Make Personal Trips

Respondents were shown the list of transportation modes below and asked to indicate how many one-way trips they take for personal trips by each mode. Most respondents drive a car (88%) and/or walk (76%) at least once per week to make personal trips, such as shopping, running errands, dining out, or visiting friends or family. About one-half make these trips by riding as a passenger in a car (not Uber or Lyft) (53%), Metrorail (47%), and/or ride-hailing services like Uber or Lyft (45%). About one-fourth of respondents typically use ART (25%) and/or Metrobus (22%).

While the proportion of respondents who use ride-hailing at least once per week is high compared to the other modes listed, the average number of trips taken in a typical week is low (3 one-way trips on average). In comparison, those who drive take an average of 9 one-way trips per week and those who walk take an average of 6 one-way trips per week. Respondents take an average of 4 one-way trips on ART, Metrorail, and Metrobus in a typical week.

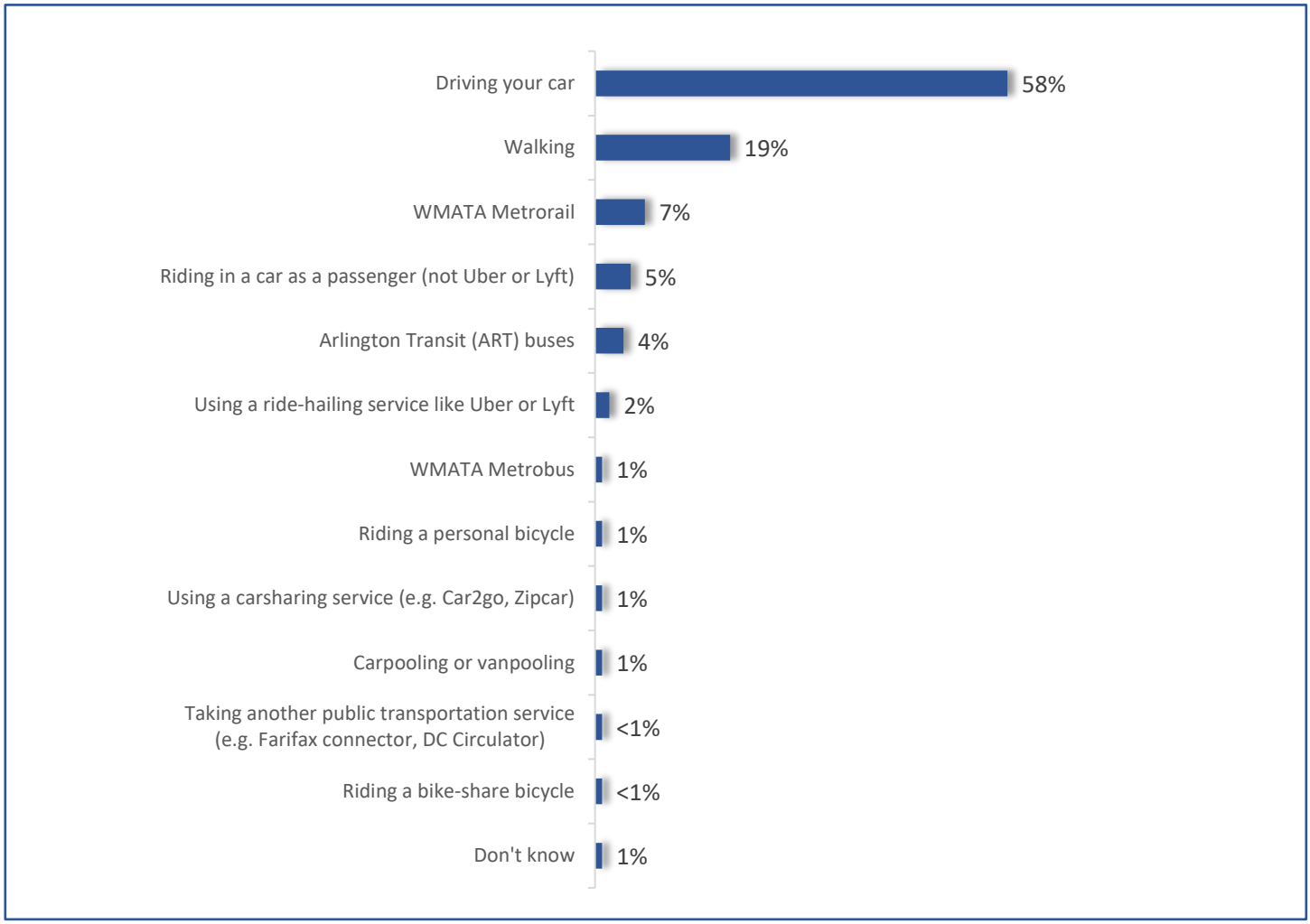
Figure 49: Modes Used at Least Once per Week for Personal Trips



S2. In a typical week, how many one-way trips do you take for personal trips (such as shopping, running errands, dining out, or visiting friends or family)?
Base = Those answering (n=370-387)

For the purposes of this research, the primary mode used to make personal trips is considered the mode used for the greatest frequency of one-way trips in a typical week. Almost six in ten respondents indicated that they drive their car most often to make personal trips (58%), followed by walking (19%). ART buses are the primary mode for just 4% of these respondents when making personal trips. However, this statistic increases to 17% among those who use ART in a typical week.

Figure 50: Primary Mode for Personal Trips



S2/S2B. Primary mode for personal trips
Base = Total sample (n=399)

Modes Used to Make Personal Trips by Rider Type

Examining the modes of transportation used to make personal trips across the different transportation segments, significant differences appear. This question contributed to the definition of the segmentation, so these differences are influenced by the nature of this analysis. However, these results are useful to provide context about which modes of transportation each segment uses. Large proportions of both frequent ART riders (81%) and public transit riders (81%) drive a car to make personal trips. However, those who ride ART or use other forms of public transportation tend to be more likely to use all other modes of transportation, including ride-hailing and walking. Notably, those who ride ART also tend to be more likely to use Metrobus as well.

Interestingly, while the results from the onboard study found that less than one-half of the ridership uses ART for personal trips (46%), almost all of the frequent ART riders surveyed in this portion of the research use ART for personal trips (98%).

Table 24: Modes Used at Least Once per Week for Personal Trips by Rider Type

Modes of transit for personal trips	Frequent ART riders (n=92-98) A	Public transit riders (n=122-124) B	Non-public transit (n=146-148) C
Driving your car	81%	81%	95%[AB]
Walking	81%[C]	87%[C]	62%
Riding in a car as a passenger (not Uber or Lyft)	61%[C]	56%[C]	43%
WMATA Metrorail	73%	82%	-
Using ride-hailing services like Uber or Lyft	57%[C]	51%[C]	32%
Arlington Transit (ART) Buses	98%	-	-
WMATA Metrobus	59%[B]	20%	-
Riding a personal bicycle	21%[C]	15%	11%
Taking a taxi or limousine	18%[BC]	8%	9%
Carpooling or vanpooling	17%[BC]	3%	6%
Taking another public transportation service (e.g. Fairfax Connector, DC Circulator etc.)	14%	9%	-
Virginia Railway Express (VRE)	12%[B]	2%	-
Riding a bike-share bicycle	4%	5%	2%
Riding an electric scooter or similar mobility device	4%	4%	2%
Using carsharing service (e.g. Car2go, Zipcar)	3%	5%	-

S2. In a typical week, how many one-way trips do you take for personal trips (such as shopping, errands, dining out, or visiting friends or family)?
Base = Those answering
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Modes Used to Make Personal Trips by Demographic Group

While all ages are most likely to utilize a car to make personal trips, this research suggests that those over the age of 35 are more likely to use a car than their younger counterparts (91% vs. 83%). On the other hand, the younger respondents exhibited more use of ride-hailing services like Uber or Lyft to make these types of trips.

There are not many differences between males and females when it comes to the types of transportation used to make personal trips. The only statistical differences are that males are more likely to drive a car (93% vs. 84%) and females are more likely to ride in a car as a passenger (58% vs. 44%).

The proportion of respondents who ride ART decreases as income increases, with those who earn less than $50,000 having the greatest proportion of respondents who use ART for personal trips (40%). Interestingly, use of ride-hailing services does not change significantly across income brackets, suggesting that this service is accessible to those with varied levels of income.

Table 25: Modes Used for Personal Trips by Age, Gender, and Income

Modes of transit for personal trips	Age			Gender		Income		
	18-34 (n=145-151) A	35-54 (n=121-128) B	55+ (n=104-109) C	Male (n=144-153) D	Female (n=224-232) E	<$50K (n=51-54) F	$50K - <$100K (n=107-113) G	$100K+ (n=191-201) H
Driving your car	83%	91%[A]	91%[A]	93%[E]	84%	75%	85%	93%[FG]
Walking	74%	78%	77%	76%	76%	75%	74%	78%
Riding in a car as a passenger (not Uber or Lyft)	58%	48%	50%	44%	58%[D]	56%	50%	53%
WMATA Metrorail	50%	47%	41%	49%	45%	37%	47%	50%
Using ride-hailing services like Uber or Lyft	61%[BC]	45%[C]	23%	46%	46%	40%	52%	45%
Arlington Transit (ART) Buses	27%	30%[C]	18%	23%	26%	40%[H]	32%[H]	19%
WMATA Metrobus	20%	25%	21%	22%	22%	30%	25%	20%
Riding a personal bicycle	17%	17%	10%	19%	12%	15%	18%	13%
Taking a taxi or limousine	14%[C]	11%	6%	14%	9%	23%[H]	10%	9%
Carpooling or vanpooling	14%	9%	-	7%	9%	13%	14%[H]	5%
Taking another public transportation service (e.g. Fairfax Connector, DC Circulator etc.)	8%	5%	6%	6%	7%	10%	8%	5%
Virginia Railway Express (VRE)	3%	7%	-	3%	4%	10%[H]	7%[H]	1%
Riding a bike-share bicycle	7%[C]	3%	1%	4%	4%	4%	7%	3%
Riding an electric scooter or similar mobility device	8%[B]	1%	-	3%	3%	2%	3%	4%
Using carsharing service (e.g. Car2go, Zipcar)	3%	4%	-	4%	2%	2%	5%	2%

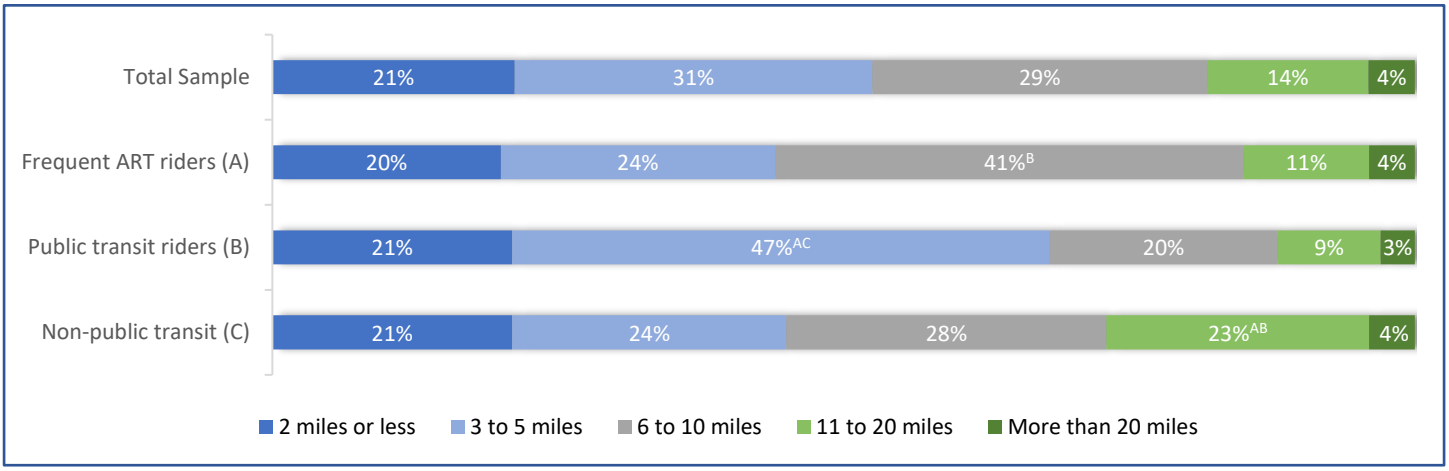
S2. In a typical week, how many one-way trips do you take for personal trips (such as shopping, errands, dining out, or visiting friends or family)?
Base = Those answering
Significant differences are shown through the use of letters.

Commuting Trips

Distance Traveled for Commuting Trips

Overall, most of the respondents surveyed live less than 10 miles from work/school. Specifically, 21% live 2 miles or less from work/school, 31% live 3 to 5 miles, and 29% live 6 to 10 miles. Among the rider types, those who ride ART are most likely to live 6 to 10 miles from work/school (41%). Public transit riders tend to live closer, with 47% living 3 to 5 miles from work/school. Non-public transit users report traveling the furthest distance to work/school, with 23% traveling 11 to 20 miles.

Figure 51: Distance Traveled to Work/School



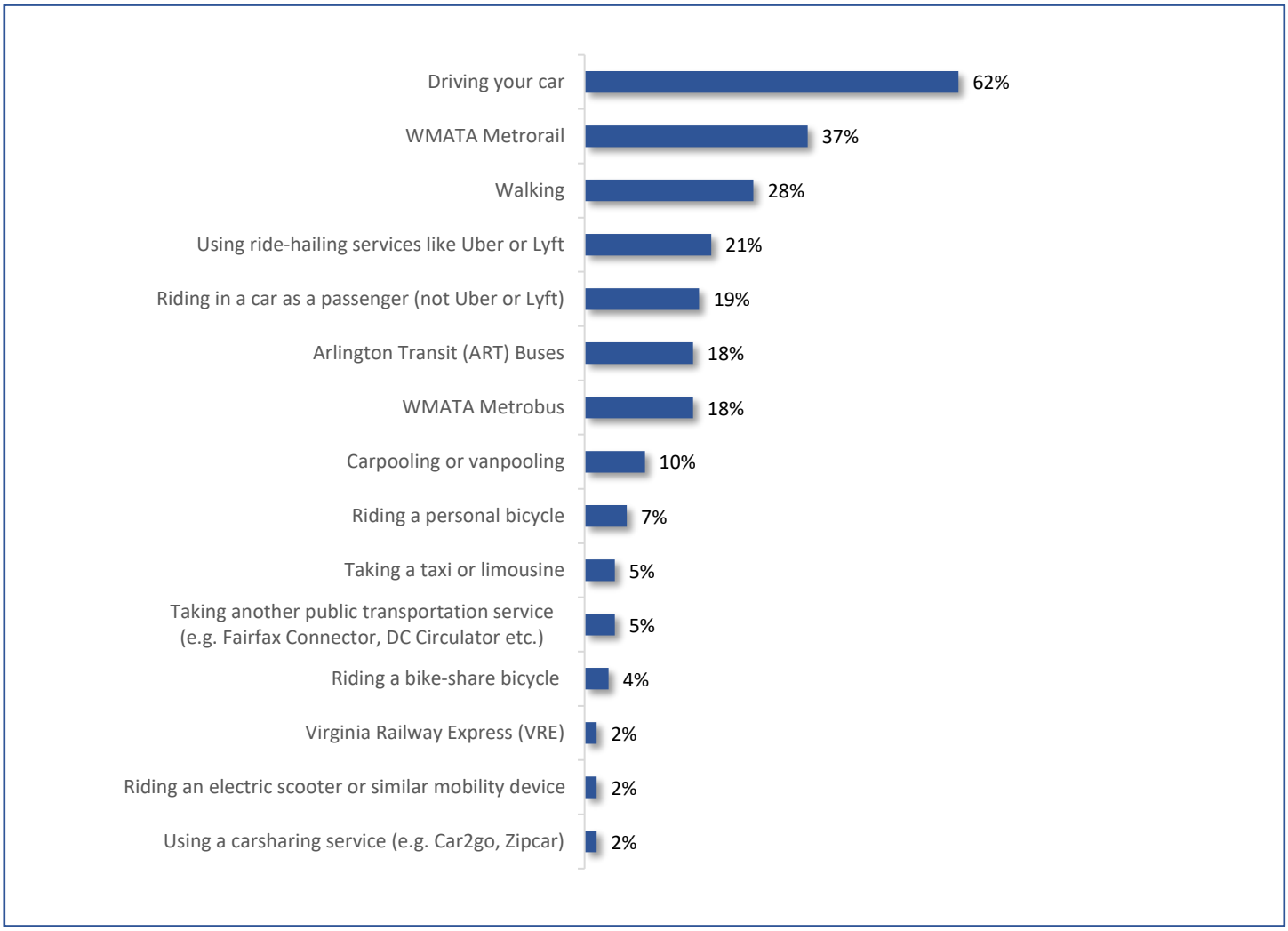
Q6. About how many miles is it from your home to your work or school (one-way)?
Base = Those who work/attend school and answering (Total sample, n=319; frequent ART riders, n=83; Public transit riders, n=104; Non-public transit, n=109)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Modes Used to Commute to Work/School

Almost two-thirds of respondents (62%) drive a car at least once per week to travel to work and/or school, followed by 37% who use Metrorail, 28% who walk, and 21% who use a ride-hailing service like Uber or Lyft. Almost two in ten respondents use ART buses and/or Metrobus (18% each).

Those who drive a car to work/school make an average of 9 one-way trips by car in a typical week. On average, those who commute to work/school make 6 one-way trips via Metrorail, 6 one-way trips via walking, 5 one-way trips via Metrobus, and 4 one-way trips via ART in a typical week. While the proportion of respondents who use ride-hailing is higher, the number of trips taken in a typical week is comparatively lower than for other modes (3 one-way trips on average).

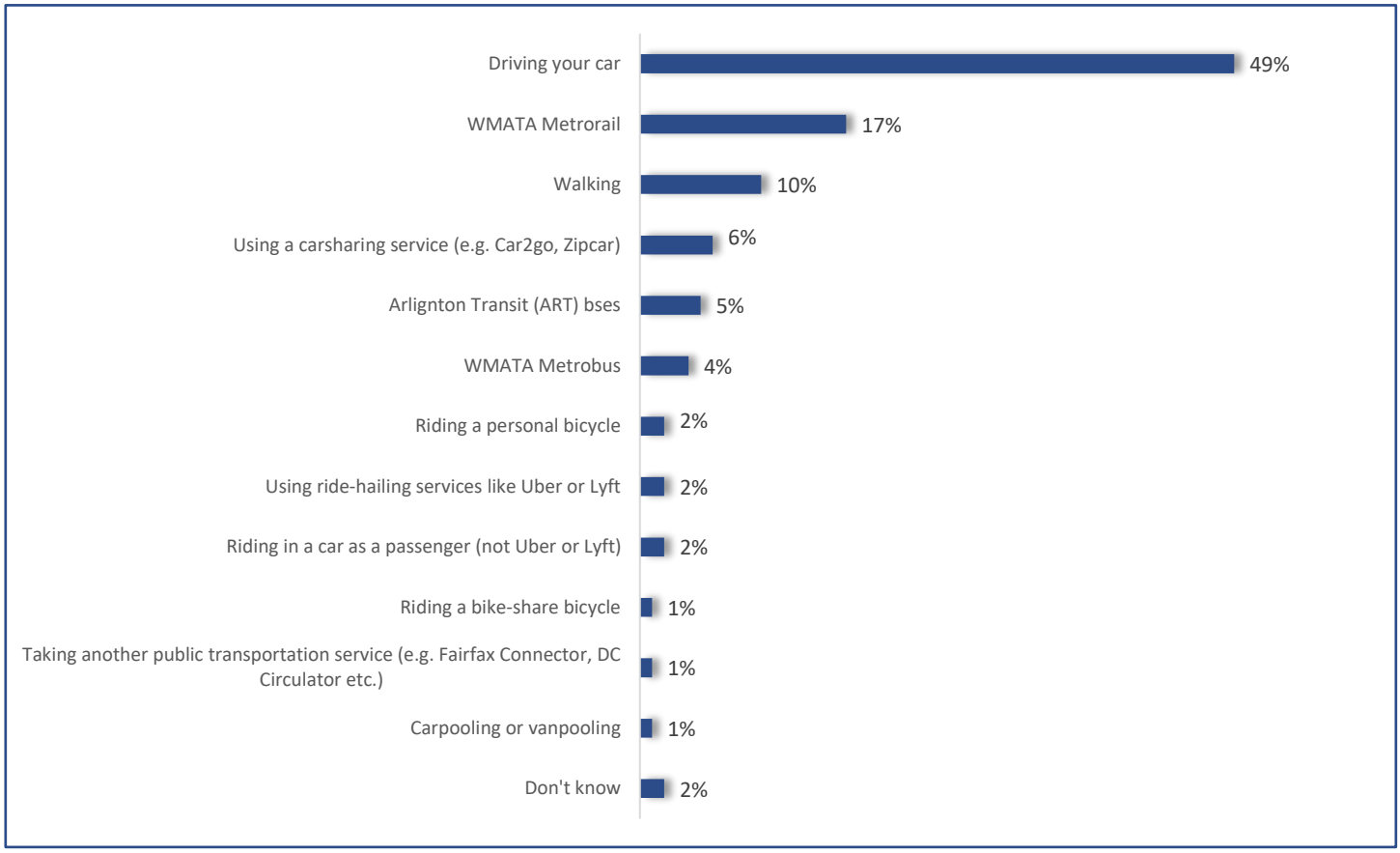
Figure 52: Modes Used at Least Once per Week to Travel to Work/School



S3. In a typical week, how many one-way trips do you take for work/school?
Base = Those who work or go to school and answering (n=292-309)

For the purposes of this research, the primary mode used to commute is considered the mode used for the greatest frequency of one-way trips in a typical week. Almost one-half of respondents indicated that they drive their car most often to commute to work/school (49%), followed distantly by Metrorail (17%). ART buses were determined to be the primary mode for personal trips for just 5% of these respondents. However, this statistic increases to 18% among those who use ART in a typical week.

Figure 53: Primary Mode for Commuting



S3/S3B. Primary mode for work/school
Base = Those who work or go to school (n=323)

Modes Used to Commute to Work/School by Rider Type

Examining the modes of transportation used to commute across the different transportation segments, significant differences appear. However, this question contributed to the definition of the segmentation, so these differences are to be expected. About two-thirds of frequent ART riders who travel to work/school take the ART bus (65%) and/or drive a car (62%), followed by 52% who use Metrorail, and 44% who use Metrobus. Once again, this demonstrates a visibly different behavior than was found in the onboard study, where almost all ART riders use the bus to commute. Interestingly, frequent ART riders are significantly more likely than either of the other two rider types to use a ride-hailing service to travel to work/school (36% vs. 8% of non-public transit respondents and 21% of public transit riders).

Table 26: Modes Used to Travel to Work/School by Rider Type

Modes of transit for work/school trips	Frequent ART riders (n=75-82) A	Public transit riders (n=102-105) B	Non-public transit (n=110-111) C
Driving your car	62%[B]	33%	88%[AB]
WMATA Metrorail	52%	66%	-
Walking	39%[C]	33%[C]	14%
Using ride-hailing services like Uber or Lyft	36%[BC]	21%[C]	8%
Riding in a car as a passenger (not Uber or Lyft)	35%[BC]	12%	12%
Arlington Transit (ART) Buses	65%	-	-
WMATA Metrobus	44%[B]	19%	-
Carpooling or vanpooling	24%[BC]	6%	3%
Riding a personal bicycle	12%	5%	5%
Taking a taxi or limousine	13%[BC]	1%	4%
Taking another public transportation service (e.g. Fairfax Connector, DC Circulator etc.)	13%	6%	-
Riding a bike-share bicycle	8%	5%	-
Virginia Railway Express (VRE)	7%	2%	-
Riding an electric scooter or similar mobility device	5%	-	1%
Using carsharing service (e.g. Car2go, Zipcar)	3%	3%	1%

S3. In a typical week, how many one-way trips do you take for work/school?
Base = Those who work or go to school and answering
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Modes Used to Commute by Demographic Group

There are very few significant differences when it comes to the types of transportation different age groups use to travel to work/school.

There are almost no significant differences between males and females when it comes to the types of transportation used to commute to work/school.

The proportion of respondents who ride ART decreases as income increases, with those who earn less than $50,000 having the greatest proportion of respondents who use ART to commute to work/school (33%). Interestingly, use of ride-hailing services does not change significantly across income brackets.

Table 27: Modes Used at Least Once per Week to Travel to Work/School by Age, Gender, and Income

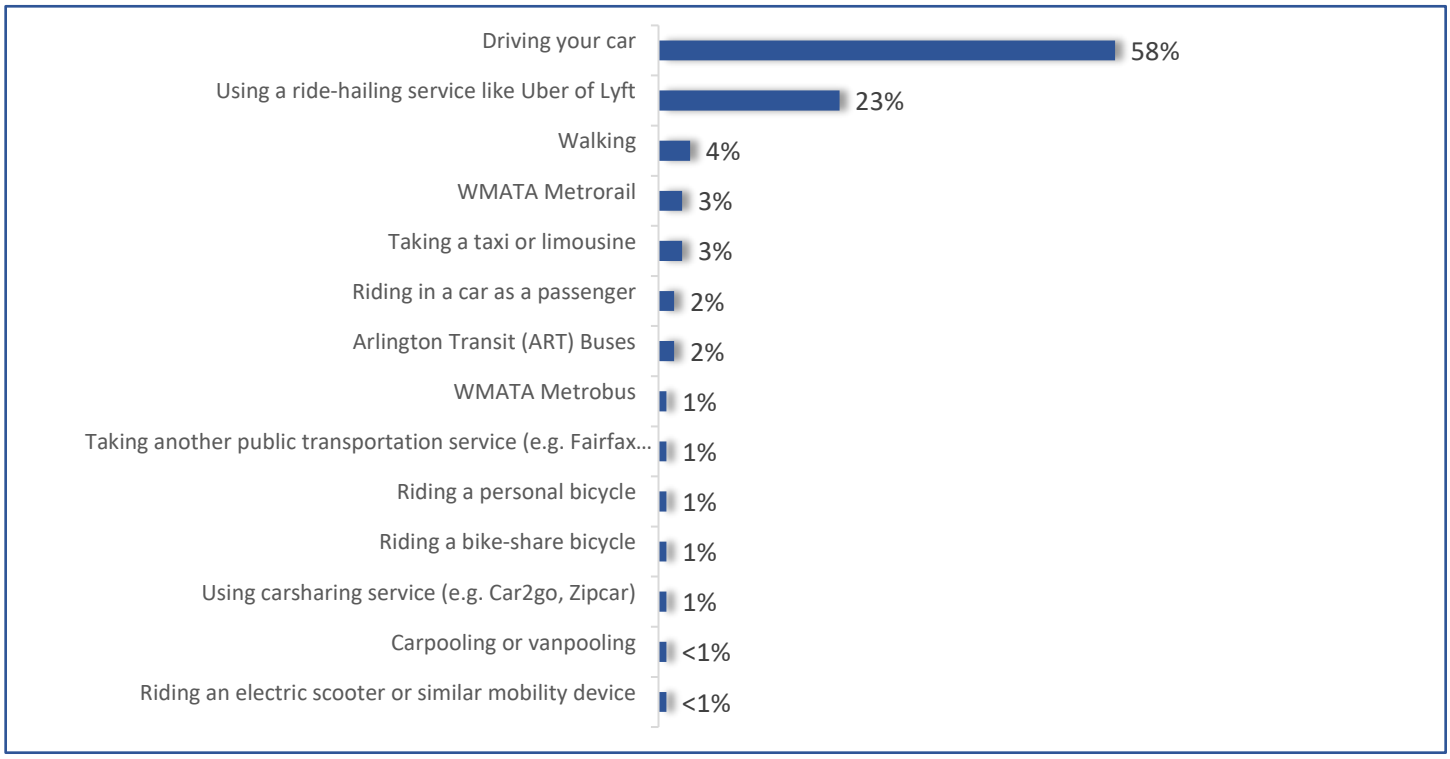
Modes of transit for work/school trips	Age			Gender		Income		
	18-34 (n=132-141) A	35-54 (n=115-121) B	55+ (n=45-47) C	Male (n=114-121) D	Female (n=176-186) E	<$50K (n=39-42) F	$50K - <$100K (n=83-92) G	$100K+ (n=155-160) H
Driving your car	62%	65%	55%	62%	62%	71%	67%	57%
WMATA Metrorail	42%	34%	32%	36%	39%	32%	33%	42%
Walking	26%	31%	30%	25%	31%	38%	23%	30%
Using ride-hailing services like Uber or Lyft	22%	22%	16%	20%	22%	20%	29%	18%
Riding in a car as a passenger (not Uber or Lyft)	20%	19%	17%	19%	20%	29%	23%	16%
Arlington Transit (ART) Buses	18%	20%C	9%	17%	18%	33%H	21%	13%
WMATA Metrobus	19%	16%	22%	19%	18%	26%	16%	19%
Carpooling or vanpooling	15%	8%	-	8%	12%	24%H	13%	6%
Riding a personal bicycle	9%C	6%	2%	8%	6%	5%	8%	6%
Taking a taxi or limousine	6%	5%	2%	9%E	3%	13%	4%	5%
Taking another public transportation service (e.g. Fairfax Connector, DC Circulator etc.)	7%	6%	-	5%	6%	12%	6%	4%
Riding a bike-share bicycle	5%	4%	-	5%	3%	10%	5%	3%
Virginia Railway Express (VRE)	4%	2%	-	2%	3%	10%	1%	1%
Riding an electric scooter or similar mobility device	4%	-	-	2%	2%	2%	2%	1%
Using carsharing service (e.g. Car2go, Zipcar)	1%	3%	2%	2%	2%	5%	1%	2%

S3. In a typical week, how many one-way trips do you take for work/school?
Base = Those who work or go to school and answering
Significant differences are shown through the use of letters.

Mode Choice During Time-sensitive Situations

Respondents were asked to select which mode of transportation they would pick to use if they were running late for an appointment, assuming each of the listed modes could get them to their destination. Nearly six in ten respondents would choose to drive a car (58%), followed by one-fourth who would use a ride-hailing service like Uber or Lyft (23%). Notably, only 2% of respondents indicated that they would choose ART in this scenario, suggesting a possible barrier to using the ART bus in time-sensitive situations.

Figure 54: Mode Selected When Running Late



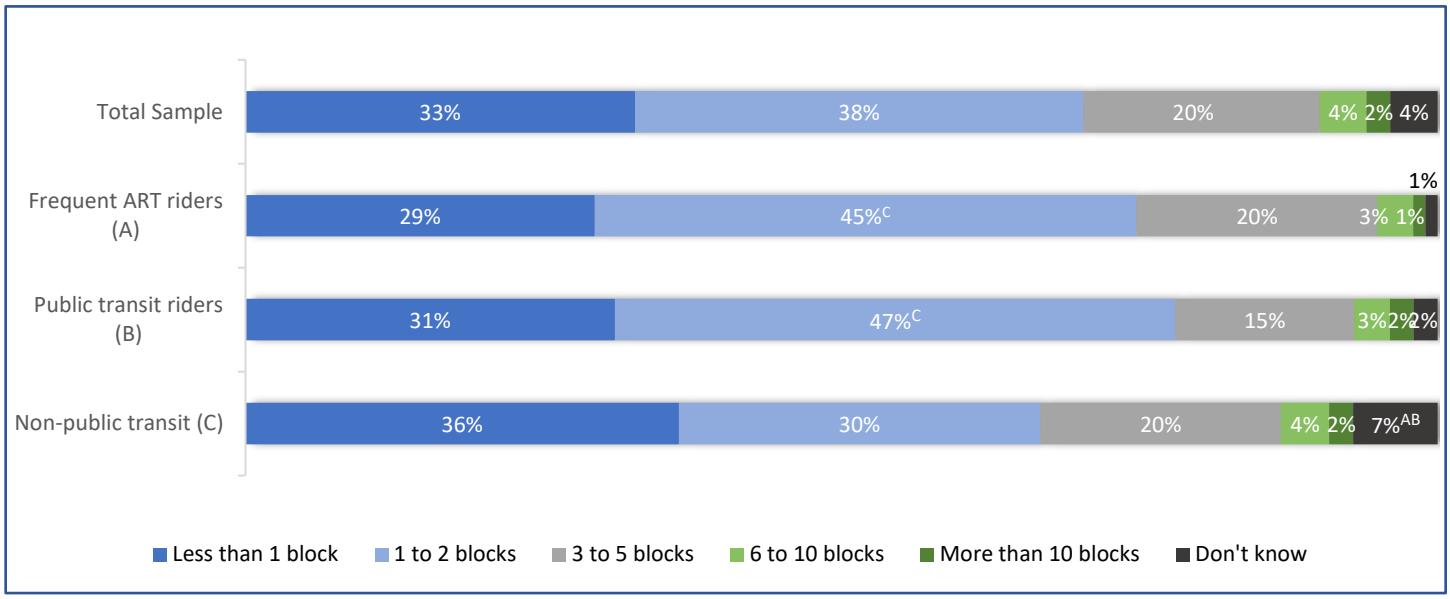
Q3. Assuming each of the following modes could get you to your destination, which mode would you pick to use if you were running late for an appointment?
Base = Total sample (n=399)

Bus Stop Awareness

Bus Stop Distance from Home

Overall, the majority of those surveyed live within two blocks of a bus stop (71%), suggesting that limited access to a bus line should not be considered a barrier to transit usage among this population. Furthermore, awareness of the bus stop proximity to home is high, with only 4% indicating they do not know where the nearest bus stop is. While those who do not use public transit have a comparatively lower level of awareness of where the nearest bus stop is (7% don't know), this is still a high level of awareness overall.

Figure 55: Distance from Home to Nearest Bus Stop

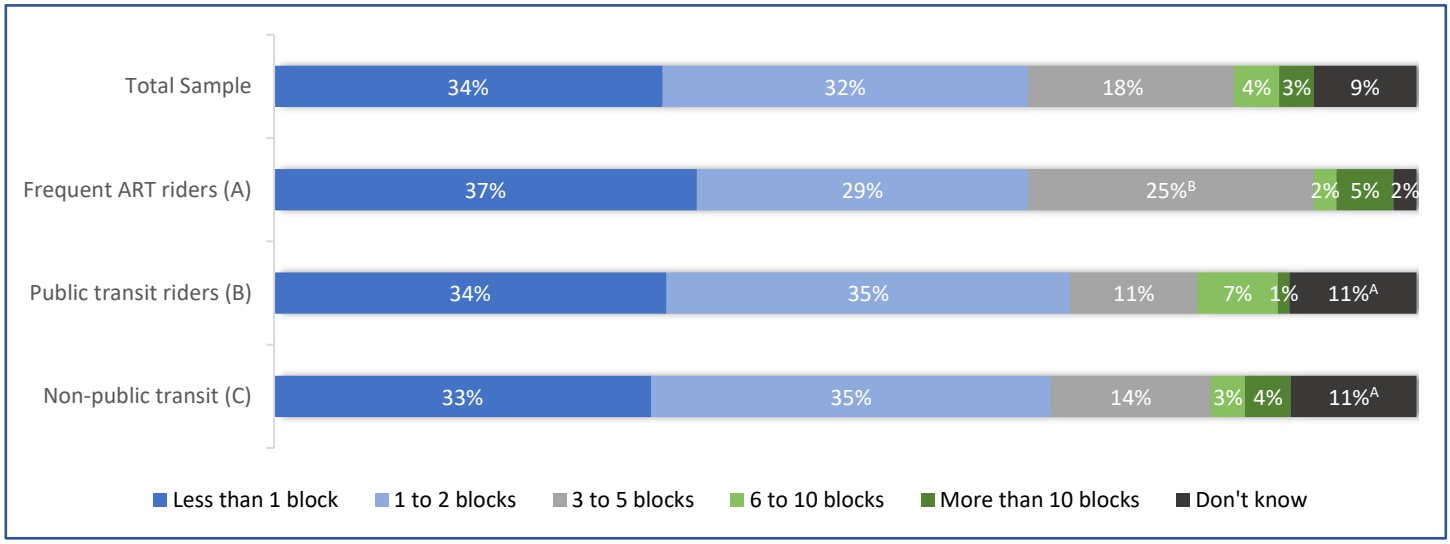


Q1. How far from your home is the nearest bus stop?
Base = Total sample (Total sample, n=399; Frequent ART riders, n=99; Public transit riders, n=124; Non-public transit, n=148)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Bus Stop Distance from Work/School

Overall, the majority of those surveyed work within two blocks of a bus stop (66%). Awareness of the nearest bus stop to work/school is a bit lower than found for home, but the majority still demonstrate awareness. Frequent ART riders are most aware of where the nearest bus stop is located, while about one in ten public transit riders and non-public transit riders do not know where the nearest bus stop is located (11% each).

Figure 56: Distance from Work/School to Nearest Bus Stop

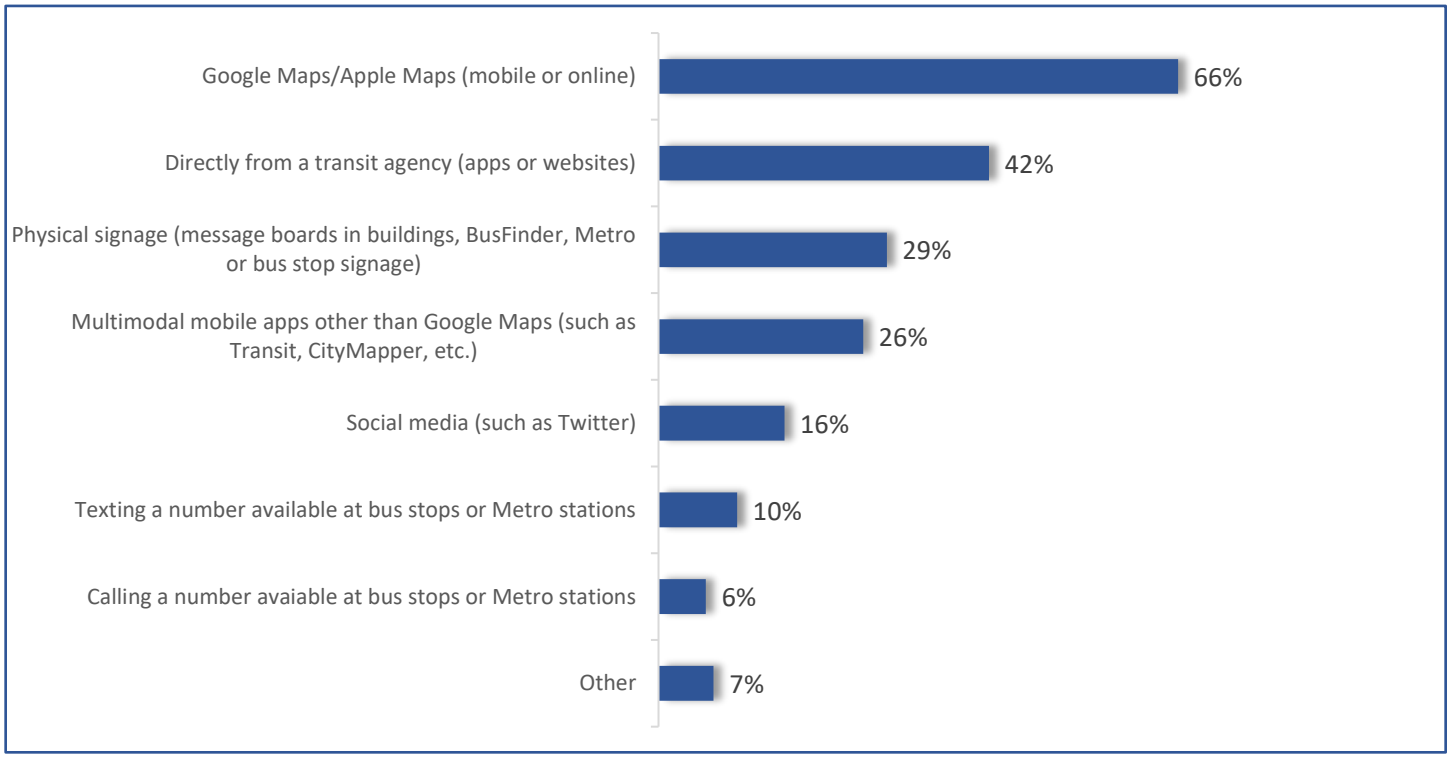


Q7. How far is the nearest bus stop from your work/school?
Base = Those who work/attend school (Total sample, n=323; Frequent ART riders, n=84; Public transit riders, n=105; Non-public transit, n=111)
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Real-time Information

Respondents were asked where they look for real-time travel information. Overall, Google Maps and/or Apple Maps (mobile or online) are the most popular sources of real-time information for this population, with 66% of respondents utilizing these resources. This is followed by real-time information obtained directly from a transit agency (apps or website) (42%), physical signage (message boards, BusFinder, Metro or bus stop signage) (29%), and multimodal apps other than Google Maps (such as Transit, CityMapper, etc.) (26%).

Figure 57: Sources of Real-time Information



Q16. Where do you look for real-time travel information?
Base = Total sample (n=399)
Multiple Responses Accepted

EXPERIENCES WITH ART BUSES

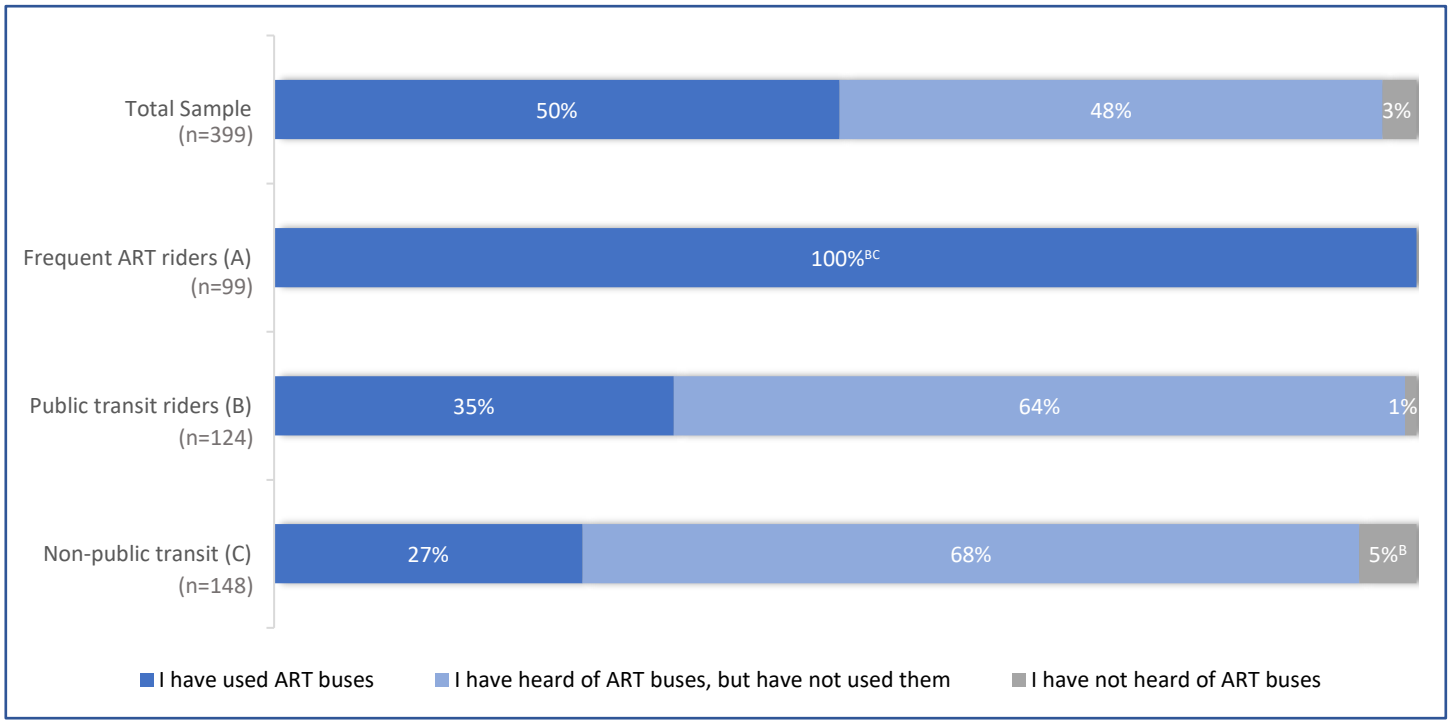
Use and Awareness of ART Buses

Overall, one-half of those surveyed have used ART buses before (50%), while just less than one-half have heard of ART buses but have not used them (48%). Notably, only 3% of respondents have never heard of ART buses.

Even though public transit riders and non-public transit users do not take ART buses in a typical week, portions of these populations have used the ART bus before. In fact, about one-third of the public transit riders (35%) and about one-fourth of non-public transit users (27%) have used ART before.

Notably, all respondents, regardless of age, gender or income, were equally likely to have used ART buses before.

Figure 58: Use and Awareness of ART



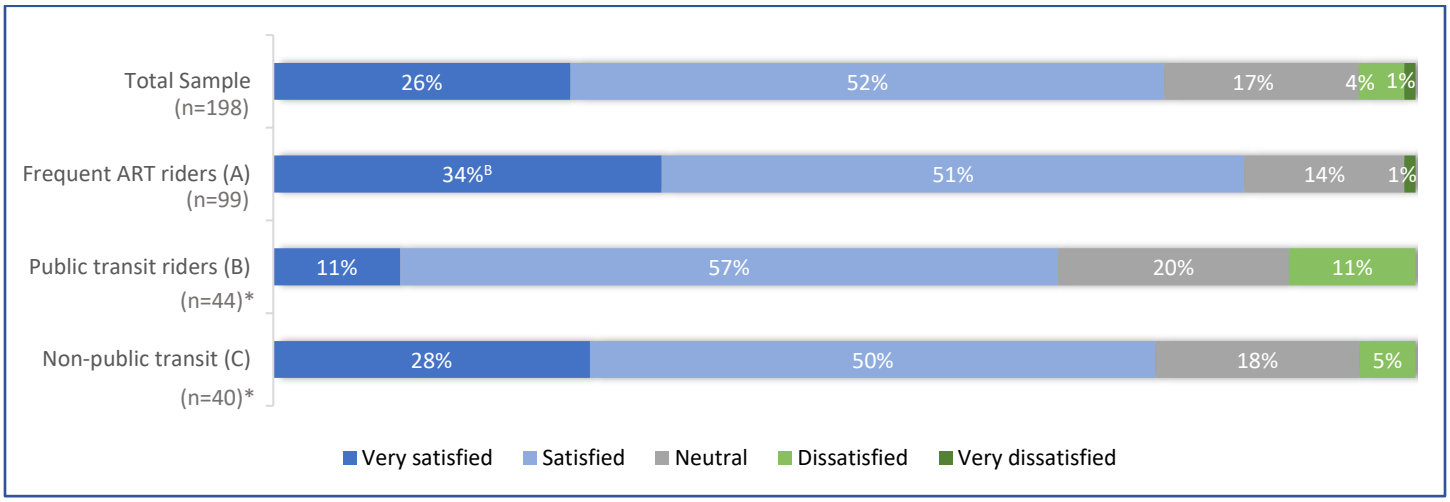
Q17. Have you ever used ART buses?
Base = Total sample
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users

Overall Experience with ART

Those who have ever used ART buses were asked to rate their overall experience with ART. The majority of those who have used ART are satisfied or very satisfied with their experience (78%). In fact, few (5%) are dissatisfied or very dissatisfied with their experience.

While frequent ART riders gave the highest satisfaction ratings (85% satisfied or very satisfied), almost eight in ten non-public transportation users gave ratings of satisfied or very satisfied (78%). Conversely, public transit riders provided the lowest satisfaction ratings, with 68% indicating that they are satisfied or very satisfied.

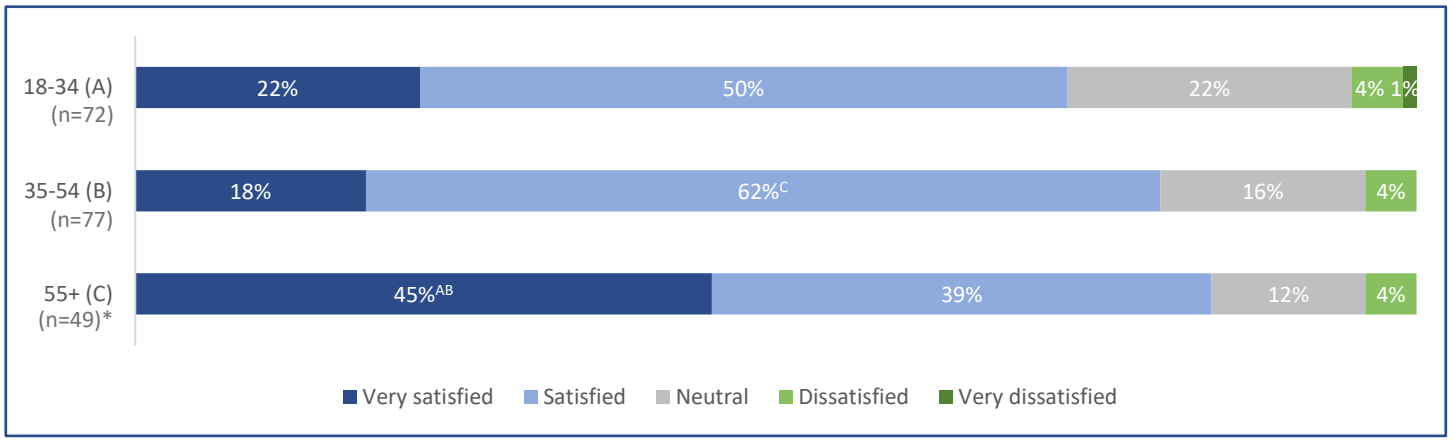
Figure 59: Overall Experience with ART



Q20. How would you rate your overall experience with ART?
Base = Those who have used ART
Significant differences are shown through the use of letters; A = value is significantly greater than frequent ART riders; B = value is significantly greater than public transit riders; C = value is significantly greater than non-public transit users
*Caution: Small base

There were no significant differences for this measure when comparing the results between genders and income brackets, but there are visible differences between ages. Those 55 and older are significantly more likely than their younger counterparts to be very satisfied with their experience on ART buses (45% vs. 18% of 35-54 age bracket and 22% of 18-34 age bracket).

Figure 60: Overall Experience with ART by Age



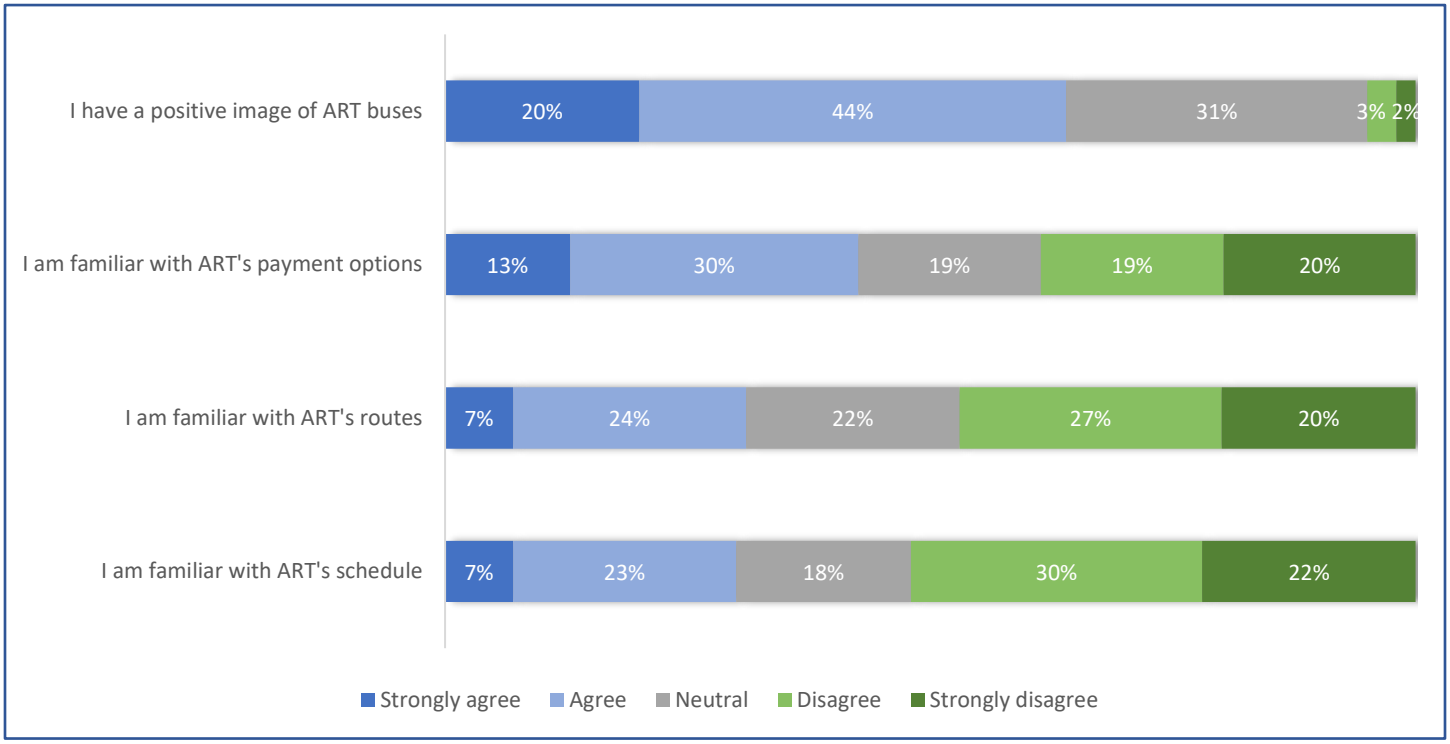
Q20. How would you rate your overall experience with ART?
Base = Those who have used ART
Significant differences are shown through the use of letters.
*Caution: Small base

Ratings of ART

Overall, about two-thirds of those who have heard of or used ART (64%) agree or strongly agree that they have a positive image of ART buses. However, agreement with this statement is significantly lower among public transit riders (59%) and non-public transit users (57%) than among ART users (86%). Notably, few (5%) disagree or strongly disagree with this statement. This is an important finding for Arlington Transit in that it suggests that perceptions of ART are not a barrier to usage.

ART receives comparatively lower ratings for the measures that address familiarity. Less than one-half agree or strongly agree that they are familiar with ART's payment options (42%), ART's routes (31%), and/or ART's schedule (30%). Frequent ART riders were significantly more likely to provide positive ratings on these measures than their counterparts. These lower ratings suggest that there is room for improvement in making information about ART better known among those who live and/or work in Arlington County.

Figure 61: Ratings of ART



Q18-19. Please indicate your level of agreement or disagreement with the following statement(s):
Base = Those who have heard of or used ART (n=389)

Table 28: Ratings of ART by Rider Type, Age, Gender, and Income

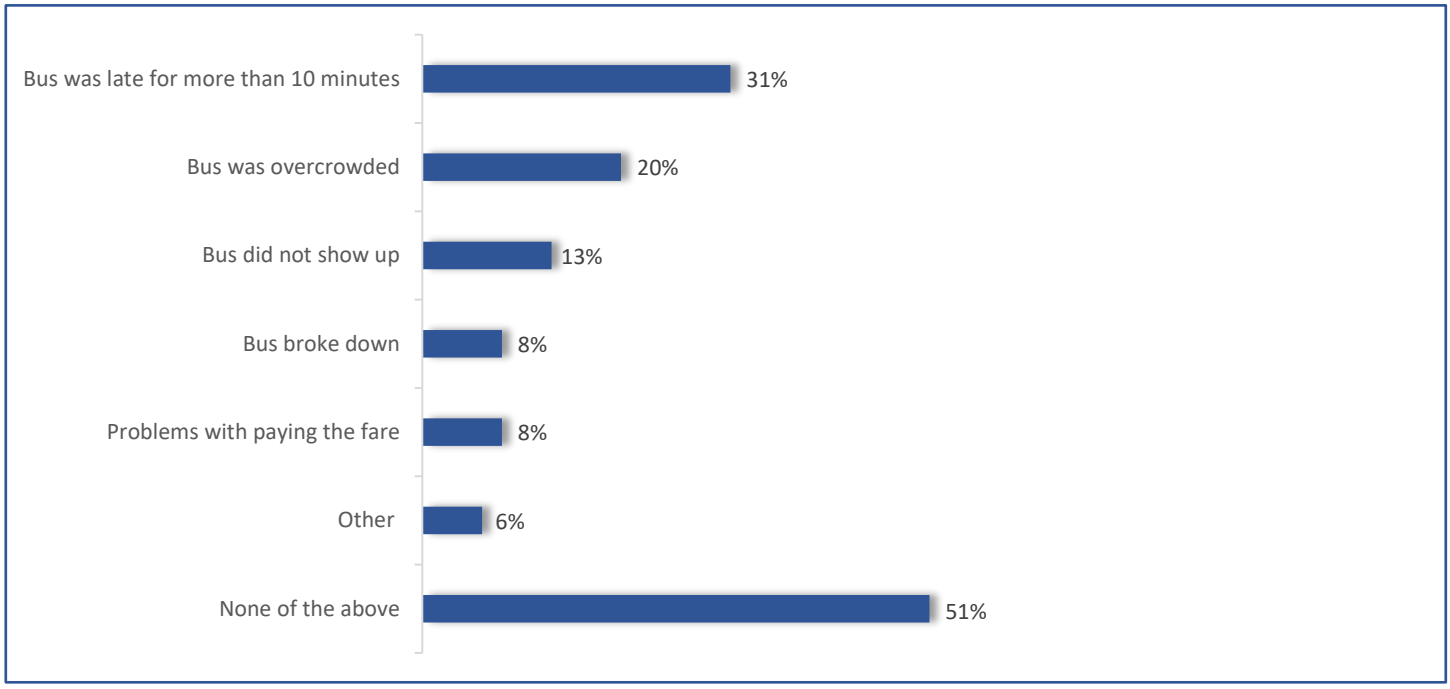
Net: Agree	Rider Type			Age			Gender		Income		
	Freq. ART riders (n=99) A	Public transit riders (n=123) B	Non-public Transit (n=141) C	18-34 (n=150) D	35-54 (n=132) E	55+ (n=107) F	Male (n=153) G	Female (n=234) H	<$50K (n=52) I	$50K - <$100K (n=115) J	$100K+ (n=200) K
I have a positive image of ART Buses	86%[BC]	59%	57%	57%	65%	73%[D]	68%	62%	69%	62%	66%
I am familiar with ART's schedule	71%[BC]	15%	14%	29%	36%	24%	33%	28%	46%[K]	34%	25%
I am familiar with ART's Routes	71%[BC]	13%	18%	28%	36%	29%	32%	31%	42%	31%	29%
I am familiar with ART's payment options	85%[BC]	33%	22%	45%[F]	46%[F]	33%	45%	40%	54%	45%	40%

Q18-19. Please indicate your level of agreement or disagreement with the following statement(s):
Base = Those who have heard of or used ART
Significant differences are shown through the use of letters.

Issues Experienced on ART

Those who have used ART buses were asked if they had ever experienced certain problems while riding the bus. While about one-half had never experienced any of these issues (51%), the remainder had encountered some type of problem onboard ART. The problem experienced most often was the bus arriving more than 10 minutes late (31%), followed by the bus being overcrowded (20%), and not showing up at all (13%).

Figure 62: Issues Experienced on ART

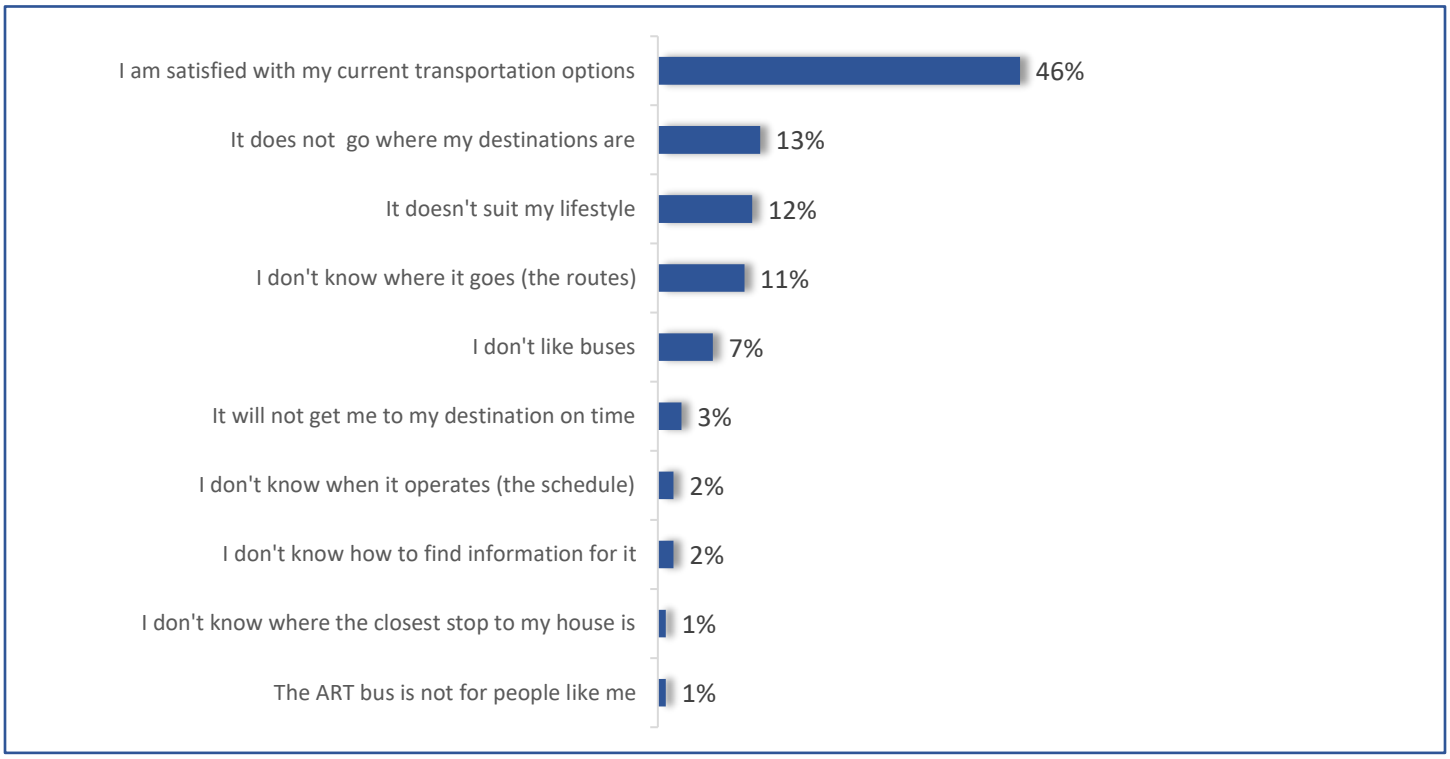


Q21. Have you ever experienced any of the following problems while riding ART?
Base = Those who have used ART (n=198)

Reasons for Not Riding ART

Those who have heard of ART buses but not used them were asked why they have not used this service. Almost one-half of these respondents (46%) indicated that they have not used ART because they are satisfied with their current transportation options. Other top mentions include that ART does not go where their destinations are (13%), ART does not suit their lifestyle (12%), and/or they do not know where it goes (the routes) (11%).

Figure 63: Reasons for Not Riding ART



Q22. What is the main reason you have not used this service?
Base = Those who have heard of ART, but have not used it (n=191)
Top Mentions

When examining the results of this measure by rider type, some interesting differences appear. Public transit riders are significantly more likely than non-public transportation users to indicate that they do not use ART because they do not know where it goes (18% vs. 5%). Conversely, non-public transportation users are more likely to indicate reasons related to personal preference, such as ART does not suit their lifestyle (20% vs. 4%).

Interestingly, a similar observation can be made between age groups. Those under 34 years old are significantly more likely than those 55 and older to indicate that ART does not suit their lifestyle (19% vs. 5%) and/or they do not like buses (10% vs. 2%).

There are no statistically significant differences among genders or income brackets.

Table 29: Reasons for Not Using ART by Rider Type, Age, Gender, and Income

Reasons for not using ART	Rider Type		Age			Gender		Income		
	Public transit riders (n=79) A	Non-public transit (n=101) B	18-34 (n=78) C	35-54 (n=55) D	55+ (n=58) E	Male (n=72) F	Female (n=119) G	<$50K (n=18)* H	$50K - <$100K (n=55) I	$100K+ (n=103) J
I am satisfied with my current transportation options	47%	44%	40%	49%	50%	46%	45%	44%	42%	48%
It does not go to where my destinations are	16%	11%	6%	18%[C]	17%	14%	13%	-	13%	13%
It doesn't suit my lifestyle	4%	20%[A]	19%[E]	9%	5%	7%	15%	11%	20%	9%
I don't know where it goes (the routes)	18%[B]	5%	12%	5%	16%	11%	11%	17%	11%	12%
I don't like buses	4%	11%	10%[E]	9%	2%	10%	6%	11%	7%	7%
It will not get me to my destination on time	3%	3%	5%	2%	2%	6%	2%	6%	2%	4%
I don't know when it operates (the schedule)	4%	1%	1%	2%	3%	4%	1%	-	2%	3%
I don't know how to find information for it	1%	1%	3%	2%	-	-	3%	6%	2%	1%
I don't know where the closest stop to my house is	1%	-	1%	-	-	-	1%	-	2%	-
The ART Bus is not for people like me	-	1%	-	2%	-	-	1%	-	-	-

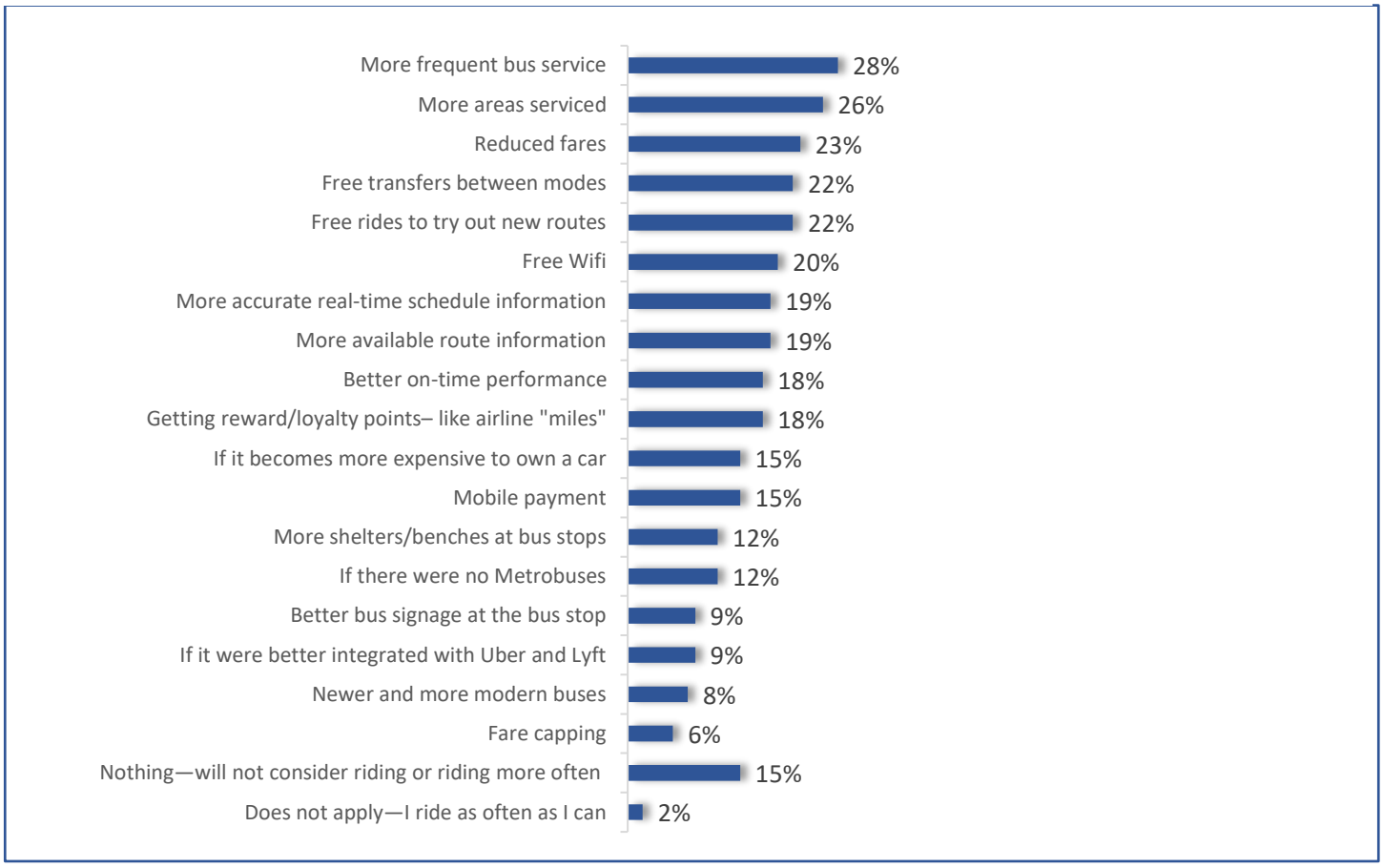
Q22. What is the main reason you have not used this service?
Base = Those who have heard of ART, but have not used it
Significant differences are shown through the use of letters.
*Caution: Small base

Ways to Increase Ridership

All respondents, regardless of previous ART experience or current ART usage, were asked to select up to five items that are most likely to make them ride the ART bus more often. Overall, the most frequently selected options include more frequent bus service (28%), more areas serviced (26%), reduced fares (23%), free transfers between modes (22%), free rides to try out new routes (22%), and/or free WiFi (20%).

Notably, 15% of respondents indicated that there is nothing that will make them ride the ART bus more often and 2% said they already ride as often as they can. This suggests ample opportunity to make enhancements that will increase ridership. A close examination of those who indicated they will not consider riding ART more often (15%, n=60) reveals that these respondents are mostly over the age of 35 (73%), employed (78%), and have an average annual household income of $111,100. Most of these respondents have never ridden ART before (84%) but tend to have a positive or neutral image of ART buses (46% and 50%, respectively). When asked why they have not used ART before, most said they are satisfied with their current transportation options (57%), ART does not go where their destinations are (17%), and/or ART does not suit their lifestyle (17%).

Figure 64: Ways to Increase Ridership



Q23. Please select the five options that are most likely to make you ride the ART bus more often.
Base = Total sample (n=399)
Multiple Responses Accepted
Top Mentions

Ways to Increase Ridership by Rider Type

Consistent with the findings from the onboard study, more frequent bus service was the top response selected by ART riders in the online survey (40%). This is followed by more areas serviced (34%), reduced fares (31%), free transfers between modes (29%), more accurate real-time schedule information (29%), and better on-time performance (27%).

Notably, frequent ART riders tended to be more likely than the other rider types to select options that would enhance their experience onboard ART buses such as more shelters/benches at bus stops (23%) and newer and more modern buses (15%). Conversely, public transit riders were most likely to select more available route information (34%), further suggesting that lack of information is a barrier to ART usage among non-riders.

Opportunity to convert non-public transportation users into ART riders appears more difficult. One-fourth of these respondents (25%) indicated that there is nothing that will make them ride ART more often. However, this still suggests that it is possible to bring new riders into the system. Top mentions among this population were more frequent bus service (22%), free rides to try out new routes (22%), more areas serviced (21%), and free WiFi (20%).

Ways to Increase Ridership by Age

With only 10% of respondents between the ages of 18 and 34 indicating that they will not consider riding ART more often, this demographic demonstrates the largest potential for increased ridership (compared to 22% of those 55 and older). Top mentions from this age group include more frequent bus service (26%), free WiFi (26%), free rides to try out new routes (25%), reduced fares (24%), free transfers between modes (22%), and mobile payment (22%). Compared to their older counterparts, this group also demonstrated higher levels of interest in a rewards/loyalty points system (21%) and better integration with Uber and Lyft (15%).

Ways to Increase Ridership by Gender

Overall, responses among males and females are relatively consistent. However, there are two items which received statistically different levels of interest. Females were significantly more likely to select a rewards/loyalty points program as an option that would encourage them to ride ART buses more (20% vs. 13%), while males were more likely to indicate that they would ride more if it became more expensive to own a car (21% vs. 12%).

Ways to Increase Ridership by Income

Those who have a household income of less than $50,000 were most likely to select items that pertain to fare and payment options. Specifically, top mentions among this population include free Wifi (45%), reduced fares (43%), free rides to try out new routes (38%), mobile payment (34%), and free transfers between modes (32%). With only 5% of these respondents indicating that they will not consider riding ART more often, this income bracket represents the greatest opportunity for ridership growth.

Table 30: Ways to Increase Ridership by Rider Type, Age, Gender, and Income

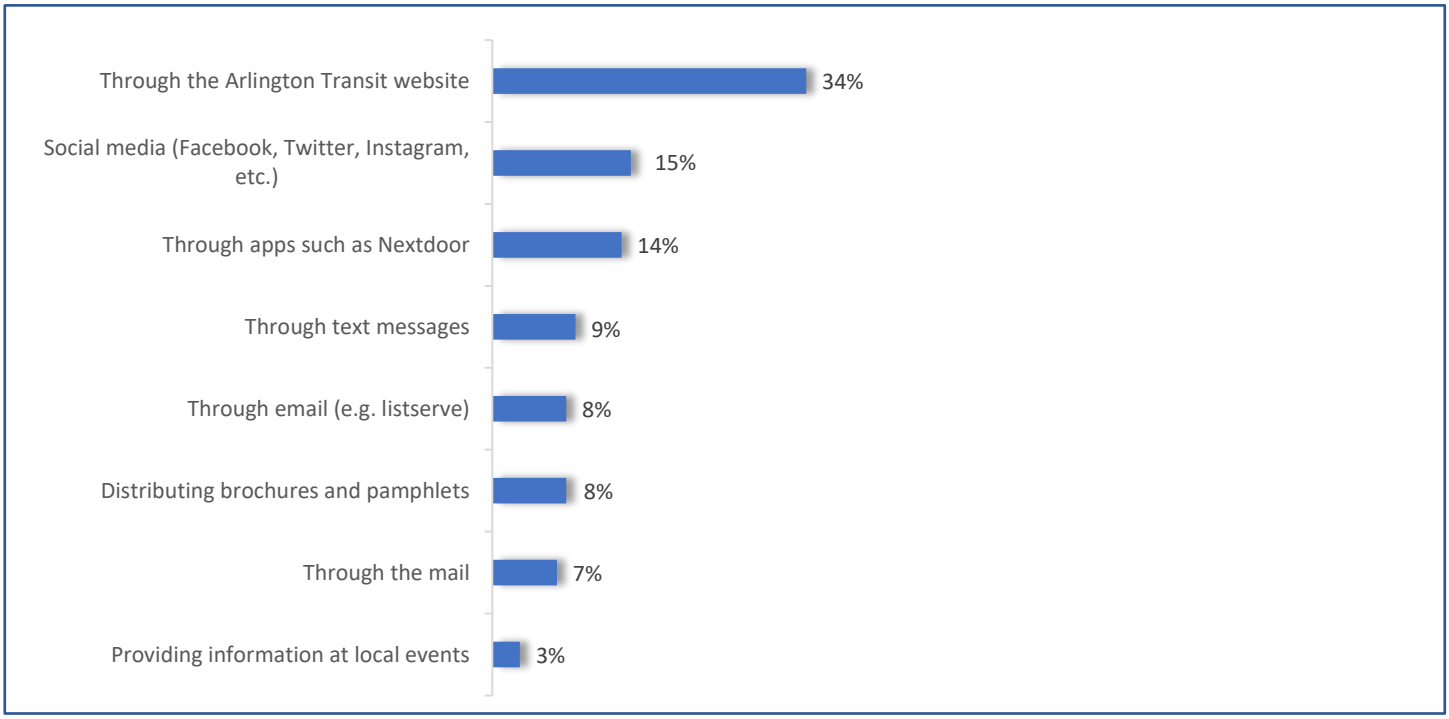
Options most likely to make you ride ART	Rider Type			Age			Gender		Income		
	Freq. ART riders (n=99) A	Public transit riders (n=124) B	Non-public transit (n=148) C	18-34 (n=156) D	35-54 (n=134) E	55+ (n=109) F	Male (n=155) G	Female (n=242) H	<$50K (n=56) I	$50K - <$100K (n=117) J	$100K+ (n=204) K
More frequent bus service	40%BC	27%	22%	26%	31%	27%	26%	29%	23%	30%	28%
More areas serviced	34%C	27%	21%	21%	31%D	28%	27%	26%	23%	30%	25%
Reduced fares	31%C	22%	18%	24%	25%	18%	20%	24%	43%JK	25%	17%
Free transfers between modes	29%C	21%	18%	22%	23%	19%	23%	21%	32%	21%	21%
Free rides to try out new routes	20%	20%	22%	25%	20%	18%	17%	24%	38%K	24%	16%
Free WiFi	23%	15%	20%	26%F	19%	12%	17%	21%	45%JK	21%	14%
More accurate real-time schedule information	29%C	20%C	11%	17%	23%	16%	17%	20%	12%	16%	22%
More available route information	8%	34%AC	13%	21%	13%	22%	19%	18%	11%	24%I	18%
Better on-time performance	27%BC	14%	13%	18%	22%	13%	15%	19%	20%	19%	17%
Getting reward/loyalty points – like airline "miles"	24%	15%	16%	21%F	20%F	10%	13%	20%G	27%	16%	16%
If it becomes more expensive to own a car	10%	15%	18%	16%	14%	16%	21%H	12%	18%	18%	12%
Mobile payment	19%	11%	14%	22%F	15%F	6%	11%	18%	34%JK	14%	11%
More shelters/benches at bus stops	23%BC	10%	7%	13%	13%	9%	11%	12%	16%	14%	11%
If there were no Metrobuses	16%C	19%C	3%	14%	10%	11%	15%	10%	4%	14%I	13%I
Better bus signage at the bus stop	12%	11%	6%	10%	7%	9%	11%	8%	14%	10%	7%
If it were better integrated with Uber and Lyft	7%	8%	10%	15%EF	6%	5%	9%	9%	11%	13%	6%
Newer and more modern buses	15%B	2%	9%B	10%	9%	5%	8%	8%	7%	13%K	6%
Fare capping	5%	6%	6%	9%F	6%	2%	6%	6%	7%	6%	6%
Nothing – will not consider riding or riding more often	2%	15%A	25%AB	10%	15%	22%D	17%	14%	5%	8%	21%IJ
Does not apply – I ride as often as I can	4%	2%	1%	1%	1%	5%	2%	2%	-	2%	2%

Q23. Please select the five options that are most likely to make you ride the ART bus more often.
Base = Total sample
Significant differences are shown through the use of letters.
Multiple Responses Accepted.
Top Mentions

Best Way to Provide Information about ART Routes and Schedules

As demonstrated throughout this report, access to information may be a key component in increasing ART ridership. Therefore, it is critical to understand the best channels to disseminate information about ART routes and schedules. Overall, about one-third of respondents (34%) said the Arlington Transit website is the best way to provide information, followed by 15% who said social media, and 14% through apps such as Nextdoor.

Figure 65: Best Way to Provide Information about ART Routes and Schedules



Q24. How could ART best provide you with information on its routes and schedules?
Base = Total sample (n=399)
Top mentions

Interestingly, there are no statistical differences among the rider types for this measure.

Across the age breakouts, younger respondents show greater preference for digital channels such as social media (19%) and text messaging (12%), while those 55 and older prefer more traditional means of communication such as email (13%) or brochures and pamphlets (13%).

While both males and females show the most preference for the Arlington Transit website, females are more likely to prefer social media (20% vs. 8%), while males are more likely to prefer apps such as Nextdoor (18% vs. 11%) and email (12% vs. 5%).

Table 31: Best Way to Provide Information by Rider Type, Age, Gender, and Income

Best ways for ART to provide information about its routes and services	Rider Type			Age			Gender		Income		
	Freq. ART riders (n=99) A	Public transit riders (n=124) B	Non-public Transit (n=148) C	18-34 (n=156) D	35-54 (n=134) E	55+ (n=109) F	Male (n=155) G	Female (n=242) H	<$50K (n=56) I	$50K - <$100K (n=117) J	$100K+ (n=204) K
Through the Arlington Transit website	38%	36%	35%	31%	32%	41%	30%	37%	32%	28%	39%[J]
Social media (Facebook, Twitter, Instagram, ETC.)	14%	11%	17%	19%[F]	20%[F]	4%	8%	20%[G]	27%[K]	18%	10%
Through apps such as Nextdoor	10%	16%	13%	13%	17%	10%	18%[H]	11%	12%	13%	14%
Through text messages	11%	6%	8%	12%[F]	10%	4%	6%	10%	9%	12%	7%
Through email (e.g. listserv)	9%	6%	8%	5%	7%	13%[D]	12%[H]	5%	4%	11%[I]	8%
Distributing brochures and pamphlets	7%	10%	6%	6%	4%	13%[E]	8%	7%	7%	5%	9%
Through the mail	5%	9%	6%	8%	4%	8%	8%	6%	5%	6%	8%
Providing information at local events	3%	2%	2%	5%[EF]	1%	1%	3%	2%	4%	5%	1%

Q24. How could ART best provide you with information on its routes and schedules?
Base = Total sample
Significant differences are shown through the use of letters.
Top mentions

Regardless of rider type, Google Maps/Apple Maps are the tools used most often to access real-time information. However, those who use ART and other modes of public transportation are more likely than non-public transit users to use almost all other real-time information platforms. Frequent ART riders in particular are more likely than both other rider types to use multimodal apps other than Google Maps (such as Transit, CityMapper, etc.) (40%), text a number available at bus stops or Metro stations (19%), and/or call a number available at bus stops or Metro stations (16%).

Notably, two of the top three channels frequent ART Riders utilize to access real-time information are directly under Arlington Transit influence. Efforts should be made to ensure that the information available on the Arlington Transit website and through physical signage is accurate, up to date, and easily accessible.

Considering that public transit users are used to turning directly to a transit agency to seek out real-time information, the Arlington Transit website should be promoted to help get information about the ART bus in front of those who do not frequently use this service.

Table 32: Sources of Real-time Information by Rider Type, Age, and Income

Where do you look for real-time travel information?	Rider Type			Age			Income		
	Freq. ART riders (n=99) A	Public transit riders (n=124) B	Non-public transit (n=148) C	18-34 (n=156) D	35-54 (n=134) E	55+ (n=109) F	<$50K (n=56) G	$50K - <$100K (n=117) H	$100K+ (n=204) I
Google Maps/Apple Maps (mobile or online)	61%	62%	72%	69%	68%	59%	61%	73%	64%
Directly from a transit agency (apps or websites)	46%[C]	58%[C]	30%	43%	43%	40%	36%	38%	46%
Physical signage (message boards in buildings, BusFinder, Metro or bus stop signage)	36%[C]	38%[C]	22%	26%	33%	30%	27%	30%	30%
Multimodal mobile apps other than Google Maps (such as Transit, CityMapper, etc.)	40%[BC]	22%	19%	31%[F]	28%[F]	17%	29%	28%	25%
Social media (such as Twitter)	18%	16%	12%	24%[F]	17%[F]	3%	27%[I]	16%	13%
Texting a number available at bus stops or Metro stations	19%[BC]	7%	7%	10%	12%	6%	18%[I]	12%	6%
Calling a number available at bus stops or Metro stations	16%[BC]	2%	2%	5%	6%	6%	12%[I]	5%	3%
Other	5%	2%	11%[B]	3%	7%	12%[D]	7%	2%	7%[H]

Q16. Where do you look for real-time travel information?
Base = Total sample
Multiple Responses Accepted
Significant differences are shown through the use of letters.

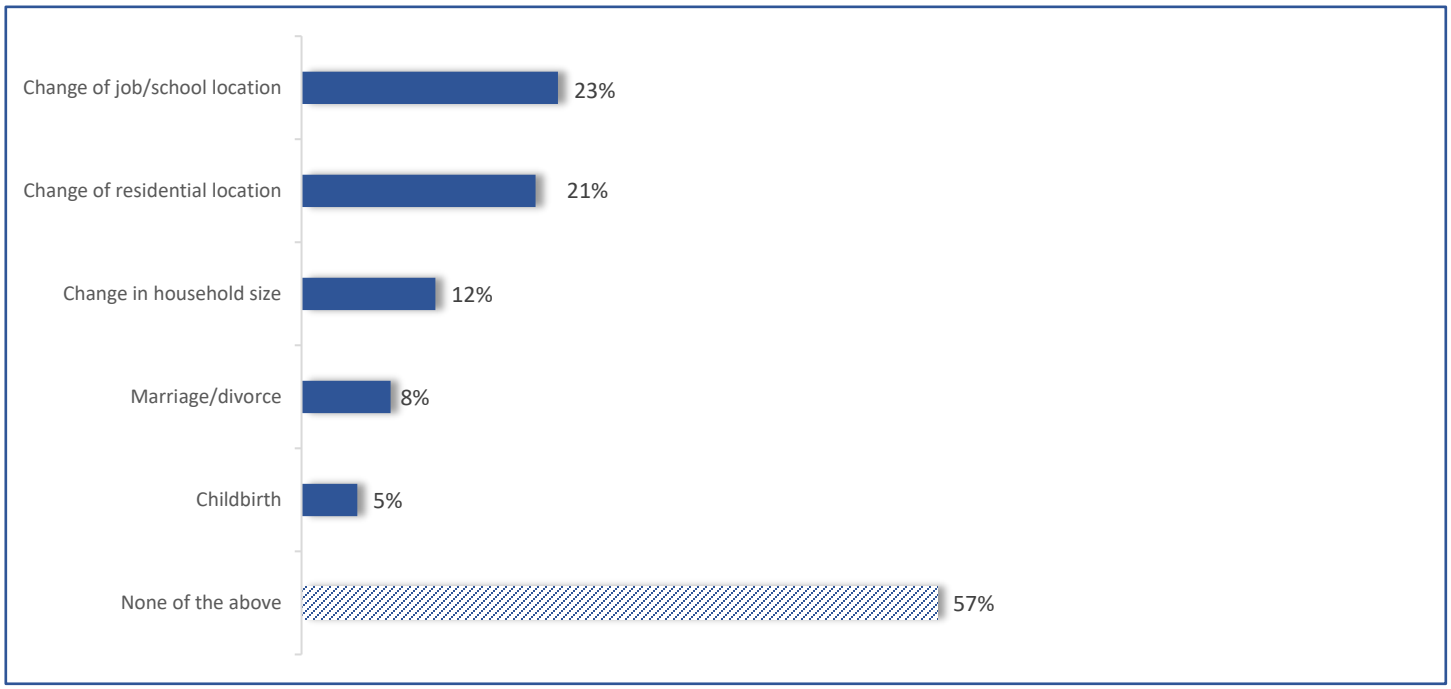
CHANGES IN TRAVEL BEHAVIOR

Personal Milestones

Results from the focus group portion of this research suggested that experiencing life changes influences which modes of transportation a person might choose to use. This was tested quantitatively through the online portion of this research. To start, respondents were shown a list of life changes and asked to indicate which personal milestones they had experienced in the past year.

More than one-half of those surveyed (57%) had not experienced any of the provided milestones in the past year. However, 23% had a change of job or school location, 21% had a change of residential location, 12% had a change in household size, 8% got married or divorced, and 5% had a child.

Figure 66: Milestones Experienced in the Past Year



D1. Which of the following milestones have you experienced in the past year?
Base = Total sample (n=399)
Multiple Responses Accepted

While similar proportions of the rider types experienced any change, frequent ART riders were most likely to experience a change in household size (18%), marriage or divorce (13%), and/or childbirth (10%).

Unsurprisingly, the younger respondents were the most likely to experience all of the changes listed below, while those 55 and older were the least likely. In fact, 81% of those 55 years of age and older did not experience any of the tested milestones in the past year. If life changes do in fact impact mode choices, then this suggests that younger individuals are most likely to make changes to their travel habits.

Males and females were about equally likely to experience all of the listed milestones.

Looking at differences across income brackets, those with a household income of less than $50,000 were most likely to experience a change of residential location (36%) and/or a change in household size (25%).

Figure 67: Milestones Experienced in the Past Year by Rider Type, Age, Gender, and Income

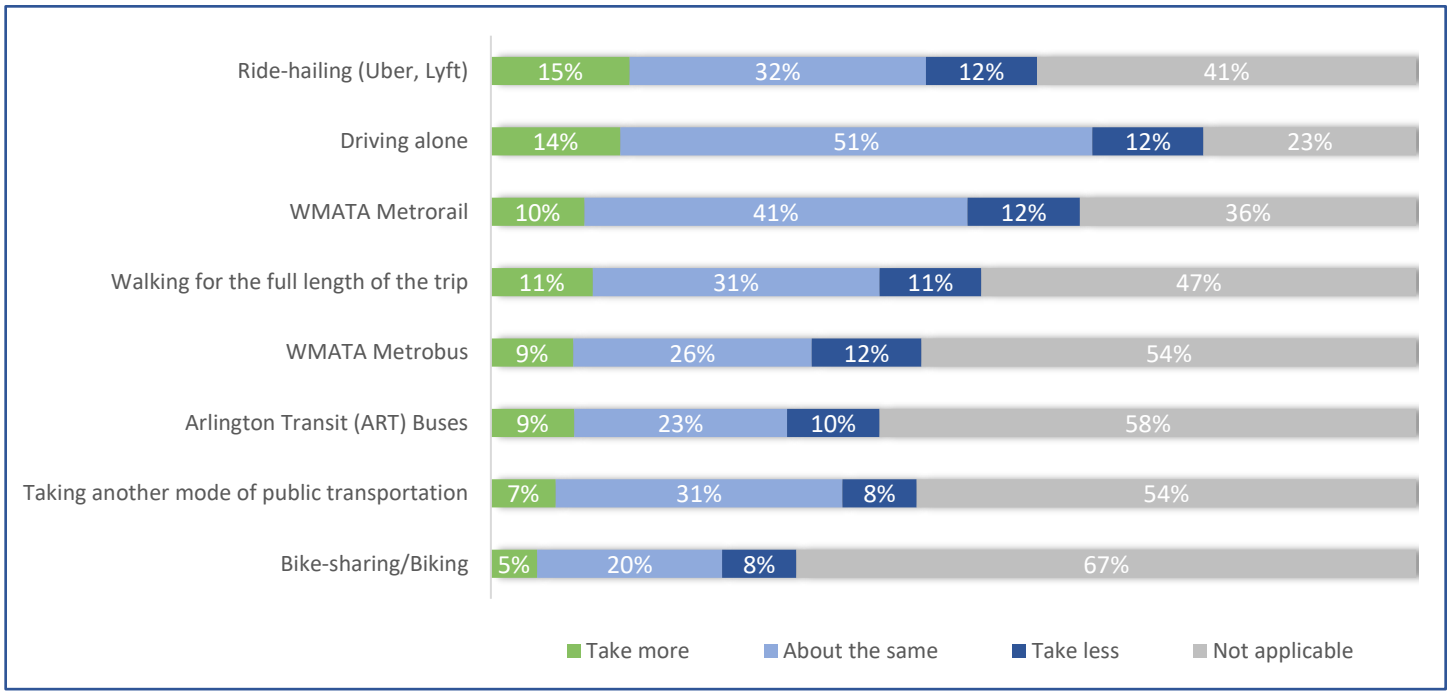
	Rider Type			Age			Gender		Income		
Milestones	Freq. ART riders (n=99) A	Public transit riders (n=124) B	Non-public transit (n=148) C	18-34 (n=156) D	35-54 (n=134) E	55+ (n=109) F	Male (n=155) G	Female (n=242) H	<$50K (n=56) I	$50K - <$100K (n=117) J	$100K+ (n=204) K
Change of job/school location	19%	27%	23%	32%[F]	22%[F]	12%	25%	23%	30%	25%	22%
Change of residential location	18%	26%	19%	34%[EF]	20%[F]	5%	19%	23%	36%[K]	22%	19%
Change in household size	18%[B]	7%	13%	16%[F]	12%	7%	9%	14%	25%[JK]	8%	12%
Marriage/Divorce	13%[C]	9%	3%	12%[F]	8%[F]	2%	7%	9%	12%	10%	6%
Childbirth	10%[B]	2%	5%	10%[E]	3%	-	5%	5%	12%	4%	4%
None of the above	55%	56%	63%	40%	59%[D]	81%[DE]	61%	55%	38%	56%[I]	62%[I]

D1. Which of the following milestones have you experienced in the past year?
Base = Total sample
Significant differences are shown through the use of letters.
Multiple Responses Accepted

Changes in Travel Behavior: Work/School Trips

Respondents were asked to indicate if they use each of the modes included in the table below more than one year ago, about the same amount, or less than one year ago for trips to work and/or school. Interestingly, for each of the modes tested, there is a roughly even proportion of respondents who have increased and decreased their usage of that mode. For example, while 9% have increased their ART bus usage over the past year, 10% have decreased their use. While this might suggest that there is no net change in ridership, it is difficult to determine if the volume of increased usage offsets the volume of decreased usage. In other words, a person who stops riding ART entirely may take away more trips than is added by a person who increased their usage by one trip per week.

Figure 68: Transportation Changes for Work/School Trips



Q12. Compared to one year ago, are you using the following modes more, about the same amount, or less for trips to work/school?
Base = Those who work or attend school (n=323)

Table 7 examines changes in mode use by rider type, age, gender, income, and whether or not the person experienced a life-changing milestone in the past year. Perhaps most notable is that a greater proportion of frequent ART riders increased their use of ART in the past year than decreased their use. However, those who are classified as public transit riders and non-public transit users were more likely to decrease their usage than increase it.

Looking at the differences among those who experienced a life change (e.g. marriage or divorce, change of job or residential location, or childbirth) and those who did not, it appears that those who experienced change were more likely than those who did not experience change to decrease their ART use (15% vs. 5%). Furthermore, those who decreased their ART bus use most often said it was due to a change in job or school status or location. This finding seems to support the hypothesis that life changes may decrease ART bus use.

Table 33: Transportation Changes for Work/School Trips by Rider Type, Age, Gender, Income, and Life Change

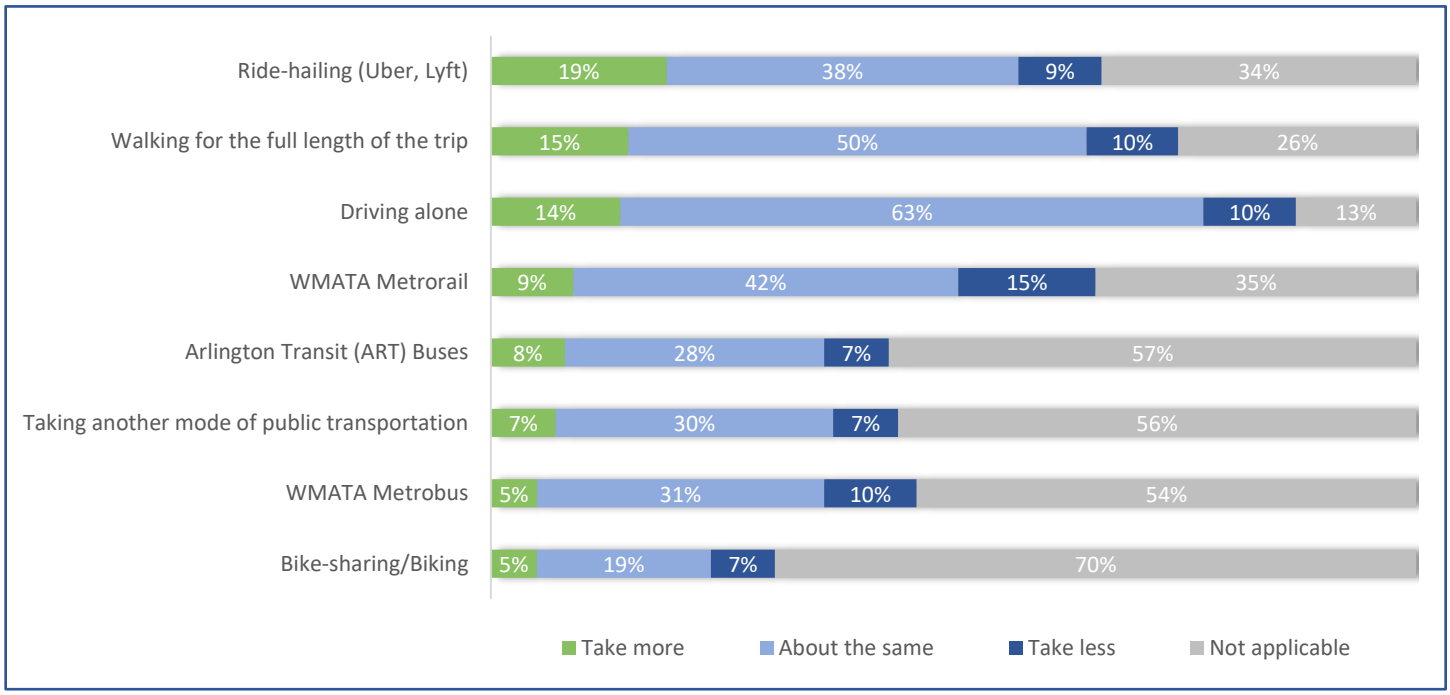
Usage changes for work/school	Rider Type			Age			Gender		Income			Life change	
	Freq. ART riders (n=84) A	Public transit riders (n=105) B	Non-public transit (n=111) C	18-34 (n=149) D	35-54 (n=123) E	55+ (n=51) F	Male (n=126) G	Female (n=195) H	<$50K (n=45) I	$50K - <$100K (n=96) J	$100K+ (n=167) K	Change (n=151) L	No change (n=172) M
WMATA Metrorail More	14%[C]	16%[C]	2%	13%[F]	11%[F]	2%	11%	10%	16%	12%	8%	17%[M]	5%
WMATA Metrorail Less	17%[C]	18%[C]	5%	13%	12%	12%	8%	15%[G]	13%	8%	14%	13%	12%
WMATA Metrobus More	18%[C]	10%[C]	2%	9%	8%	8%	7%	10%	16%	10%	7%	9%	9%
WMATA Metrobus Less	21%[C]	12%	5%	13%	12%	8%	9%	14%	18%	14%	10%	18%[M]	7%
Arlington Transit (ART) Buses More	29%[BC]	1%	1%	10%	11%	-	9%	9%	18%[K]	11%	5%	9%	9%
Arlington Transit (ART) Buses Less	19%[BC]	7%	5%	11%	11%	6%	7%	11%	18%	8%	9%	15%[M]	5%
Ride-hailing (Uber, Lyft) More	23%[C]	13%	10%	15%	16%	12%	14%	15%	16%	15%	15%	14%	16%
Ride-hailing (Uber, Lyft) Less	17%[C]	17%[C]	5%	18%[E]	10%	-	6%	16%[G]	22%	10%	11%	19%[M]	6%
Driving alone More	20%[B]	7%	13%	19%	14%	-	15%	13%	27%[K]	15%	11%	19%[M]	9%
Driving alone Less	13%[C]	21%[C]	5%	13%	13%	6%	13%	12%	20%	9%	13%	17%[M]	8%
Bike-sharing/Biking More	6%	5%	3%	7%	5%	2%	8%	4%	4%	4%	6%	7%	3%
Bike-sharing/Biking Less	13%	7%	5%	11%	7%	-	6%	9%	13%	7%	7%	11%[M]	5%
Walking for the full length of the trip More	15%[C]	11%	6%	13%	11%	8%	10%	12%	20%	9%	11%	15%	8%
Walking for the full length of the trip Less	15%	11%	7%	11%[F]	12%[F]	4%	7%	13%	18%	9%	10%	13%	8%
Taking another mode of public transportation More	14%[BC]	4%	3%	9%	6%	-	4%	8%	9%	10%	4%	9%	4%
Taking another mode of public transportation Less	10%	6%	7%	7%	11%[F]	2%	6%	9%	18%[J]	5%	7%	9%	6%

Q12. Compared to one year ago, are you using the following modes more, about the same amount, or less for trips to work/school?
Base = Those who work or attend school
Significant differences are shown through the use of letters.

Changes in Travel Behavior: Personal Trips

Consistent with the pattern seen in the work/school trip changes section, a roughly equal proportion of respondents have increased and decreased their usage of the ART bus (8% increased vs. 7% decreased). As aforementioned, it is difficult to determine if the volume of increased usage offsets the volume of decreased usage. In other words, a person who stops riding ART entirely may take away more trips than is added by a person who increased their usage by one trip per week. Unlike the previous section, there is a greater proportion of respondents who have increased their ride-hailing use than have decreased their use (19% increased vs. 9% decreased). Conversely, there is a greater proportion of respondents who have decreased their use of Metrorail (15% decreased vs. 9% increased) and Metrobus (10% decreased vs. 5% increased).

Figure 69: Transportation Changes for Personal Trips



Q13. Compared to one year ago, are you using the following modes more, about the same amount, or less for personal trips (such as shopping, errands, dining out, or visiting friends or family)?
Base = Total sample (n=399)

The table on the following page examines changes in mode use by rider type, age, gender, income, and whether or not the person experienced a life-changing milestone in the past year. Perhaps most notable is that a greater proportion of frequent ART riders increased their use of ART in the past year than decreased their use.

Looking at the differences among those who experienced a life change and those who did not, it appears that those who experienced change were more likely than those who did not experience change to decrease their ART use (12% vs. 4%).

Table 34: Transportation Changes for Personal Trips by Rider Type, Age, Gender, Income, and Life Change

Usage changes for personal trips	Rider Type			Age			Gender		Income			Life change	
	Freq. ART riders (n=99) A	Public transit riders (n=124) B	Non-public transit (n=148) C	18-34 (n=156) D	35-54 (n=134) E	55+ (n=109) F	Male (n=155) G	Female (n=242) H	<$50K (n=56) I	$50K - <$100K (n=117) J	$100K+ (n=204) K	Change (n=170) L	No change (n=229) M
WMATA Metrorail More	16%[C]	15%[C]	1%	13%[F]	7%	5%	8%	10%	16%	7%	8%	14%[M]	6%
WMATA Metrorail Less	17%	19%[C]	9%	17%	14%	11%	14%	15%	18%	14%	15%	17%	13%
WMATA Metrobus More	13%[C]	6%[C]	1%	6%	4%	5%	4%	6%	11%	7%	2%	6%	5%
WMATA Metrobus Less	17%[C]	10%	7%	13%[F]	10%	6%	12%	10%	12%	10%	10%	12%	9%
Arlington Transit (ART) Buses More	25%[BC]	2%	1%	8%	9%	6%	7%	8%	12%	9%	6%	11%	6%
Arlington Transit (ART) Buses Less	14%[BC]	6%	4%	10%[F]	8%	3%	5%	9%	20%[JK]	7%	5%	12%[M]	4%
Ride-hailing (Uber, Lyft) More	18%	20%	17%	17%	25%[F]	13%	22%	17%	11%	15%	22%[I]	22%	17%
Ride-hailing (Uber, Lyft) Less	14%	7%	7%	13%[F]	7%	4%	8%	9%	21%[JK]	6%	8%	11%	7%
Driving alone More	25%[BC]	11%	10%	19%[F]	14%	7%	18%	12%	23%	15%	12%	24%[M]	7%
Driving alone Less	12%	13%	7%	11%	11%	8%	14%	8%	18%	7%	11%	13%	8%
Bike-sharing/Biking More	8%	3%	3%	8%	4%	-	6%	3%	7%	3%	4%	7%[M]	3%
Bike-sharing/Biking Less	10%	7%	4%	8%	7%	4%	6%	7%	12%	8%	5%	11%[M]	4%
Walking for the full length of the trip More	17%	20%[C]	9%	19%	13%	11%	15%	15%	14%	15%	16%	19%	12%
Walking for the full length of the trip Less	13%	9%	9%	12%	10%	6%	7%	12%	23%[JK]	7%	8%	15%[M]	6%
Taking another mode of public transportation More	14%[C]	7%[C]	2%	10%[F]	7%[F]	2%	7%	7%	14%	6%	6%	11%[M]	4%
Taking another mode of public transportation Less	11%	5%	5%	7%	9%	5%	5%	8%	11%	7%	6%	9%	5%

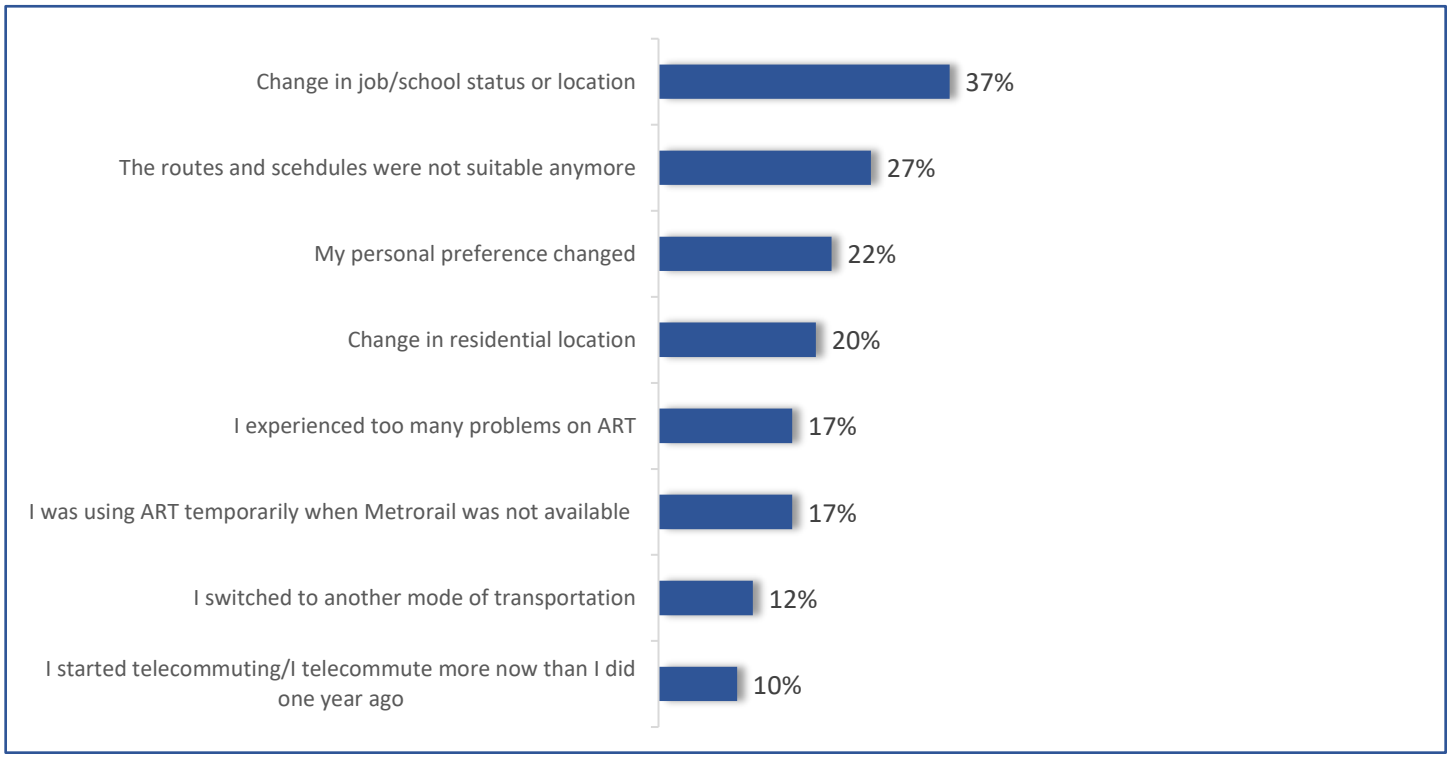
Q13. Compared to one year ago, are you using the following modes more, about the same amount, or less for personal trips (such as shopping, errands, dining out, or visiting friends or family)?
Base = Total sample
Significant differences are shown through the use of letters.

Reasons for Decrease in ART Use

Those who have decreased their ART bus usage for either work/school and/or personal trips (41 respondents) were asked to indicate all of the reasons that caused the change. About one-third of those who decreased their ART bus use said this change was due to a change in job/school status or location (37%). Other top mentions included that the routes and schedules were not suitable anymore (27%), their personal preference changed (22%), and/or that they had a change in residential location (20%).

Notably, nearly two in ten indicated that they use ART less because they experienced too many problems on ART (17%).

Figure 70: Reasons for Decrease in ART Use

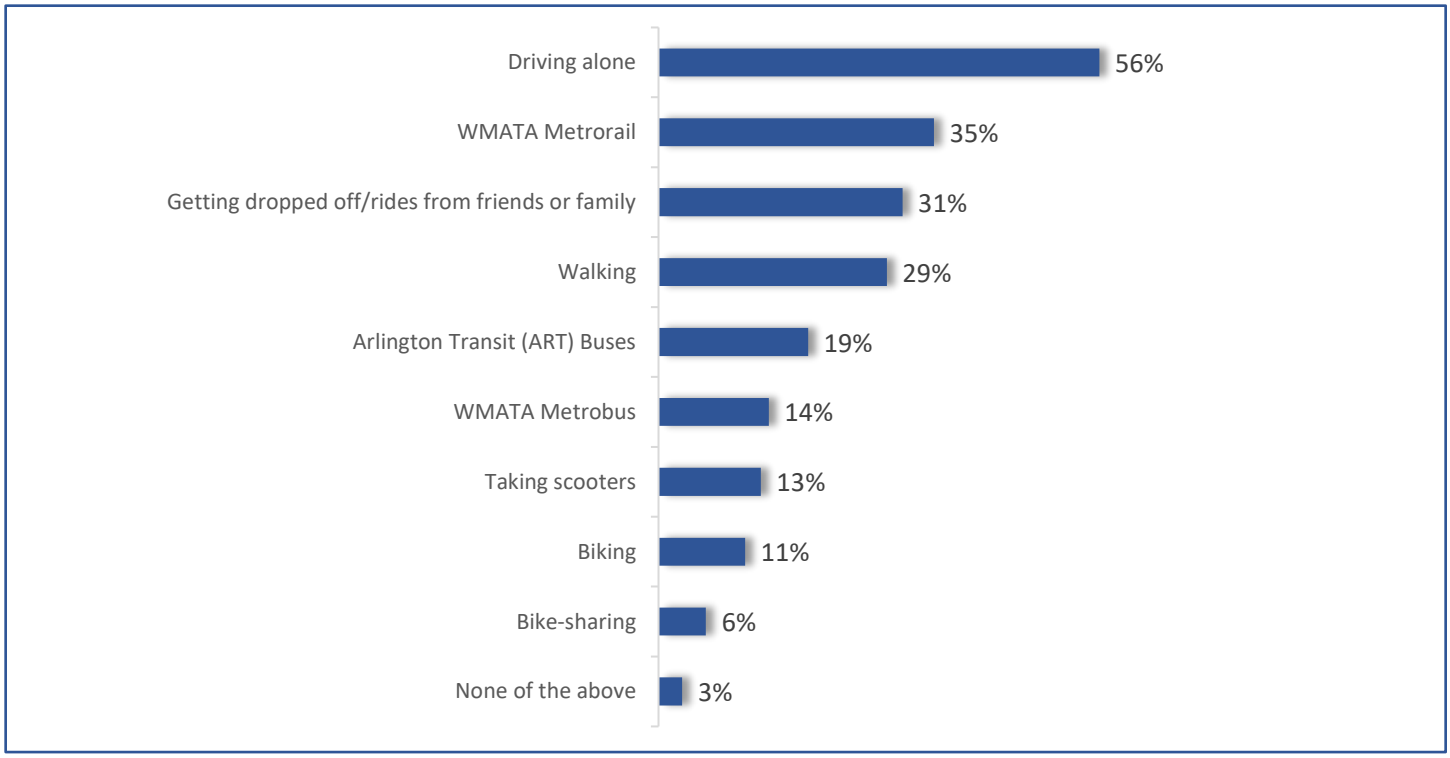


Q14. Why are you using ART bus less than you were one year ago for work/school and/or non-work/school trips?
Base = Those with a decrease in ART bus use (n=41)
Top Mentions

Travel Changes Due to Ride-Hailing

Across the country, transit agencies worry about how the advent of ride-hailing is impacting ridership. To assess how increased usage of ride-hailing services like Uber or Lyft is affecting ART ridership, respondents were asked to indicate the modes they are using less due to their increased use of ride-hailing services. The top mode mentioned by these respondents was driving alone (56%), followed by Metrorail (35%), getting dropped off or getting rides from friends or family (31%), and/or walking (29%). Nearly two in ten respondents indicated that they use ART bus less often due to an increase in ride-hailing (19%). These results could be impacted by the high number of respondents included in this research that report having access to a personal vehicle and driving alone.

Figure 71: Travel Changes Due to Ride-Hailing



Q15. Please select the modes you are using less due to your increased use of ride-hailing services (like Uber or Lyft).
Base = Those with an increase in ride-hailing use (n=93)

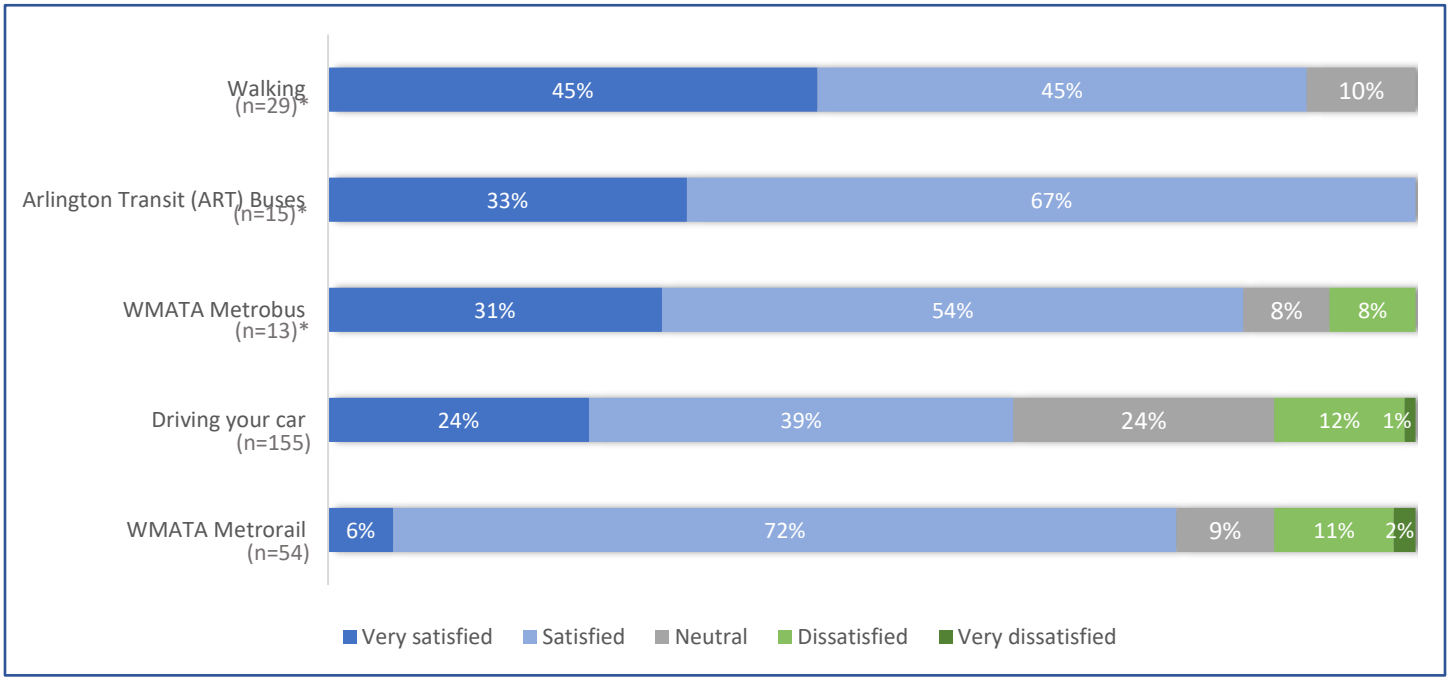
EXPERIENCES WITH COMMUTE

Respondents were asked to rate their experience with the primary mode they use for commuting on several measures, including satisfaction, likelihood to recommend, and likelihood to continue using. Due to the small base sizes for most of the modes tested, results are only reported for driving your car (n=155), Metrorail (n=54), walking (n=29), Arlington Transit (ART) buses (n=15), and Metrobus (n=13). Those who work exclusively from home were instead asked about their satisfaction with telecommuting, which will be covered in the next section.

Satisfaction with Commute

Respondents whose primary mode for commuting is the ART bus all rated their overall satisfaction with daily commute as either very satisfied or satisfied. This represents the most positive ratings given to any of the modes detailed below. However, caution is advised when interpreting this data due to the presence of small bases. Notably, driving a car received lower ratings than all three public transportation modes included here.

Figure 72: Overall Satisfaction with Daily Commute

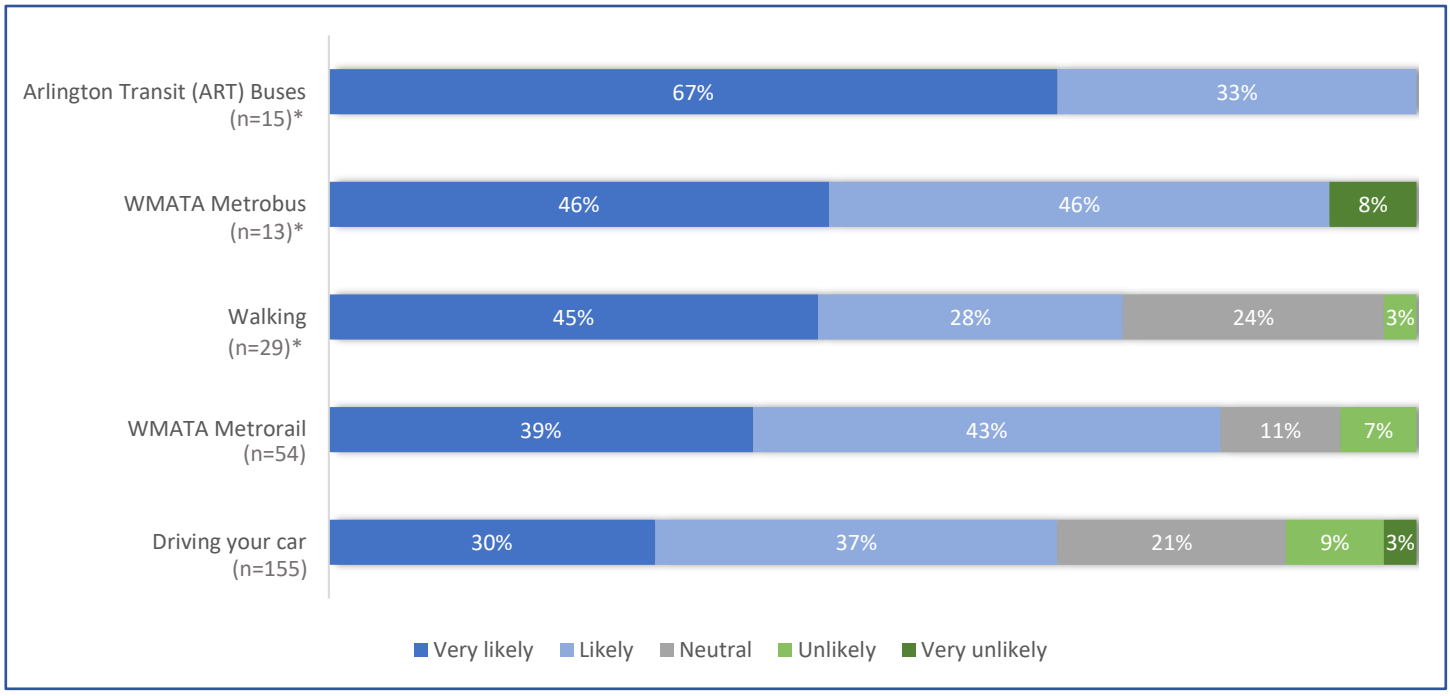


Q9. How would you rate your overall satisfaction your everyday commute?
Base = Those who work or attend school and have a primary mode
*Caution: Small base

Likelihood to Recommend Mode for Commuting

The high levels of satisfaction found among those who commute on ART translate into a high likelihood to recommend this service to others who live and work in similar areas. Metrobus received the second highest ratings of all the modes listed below. Notably, those who drive a car to work are less likely to recommend their mode of travel than those who use one of the modes of public transportation listed below. However, caution is advised when interpreting this data due to the presence of small bases.

Figure 73: Likelihood to Recommend Primary Commute Mode

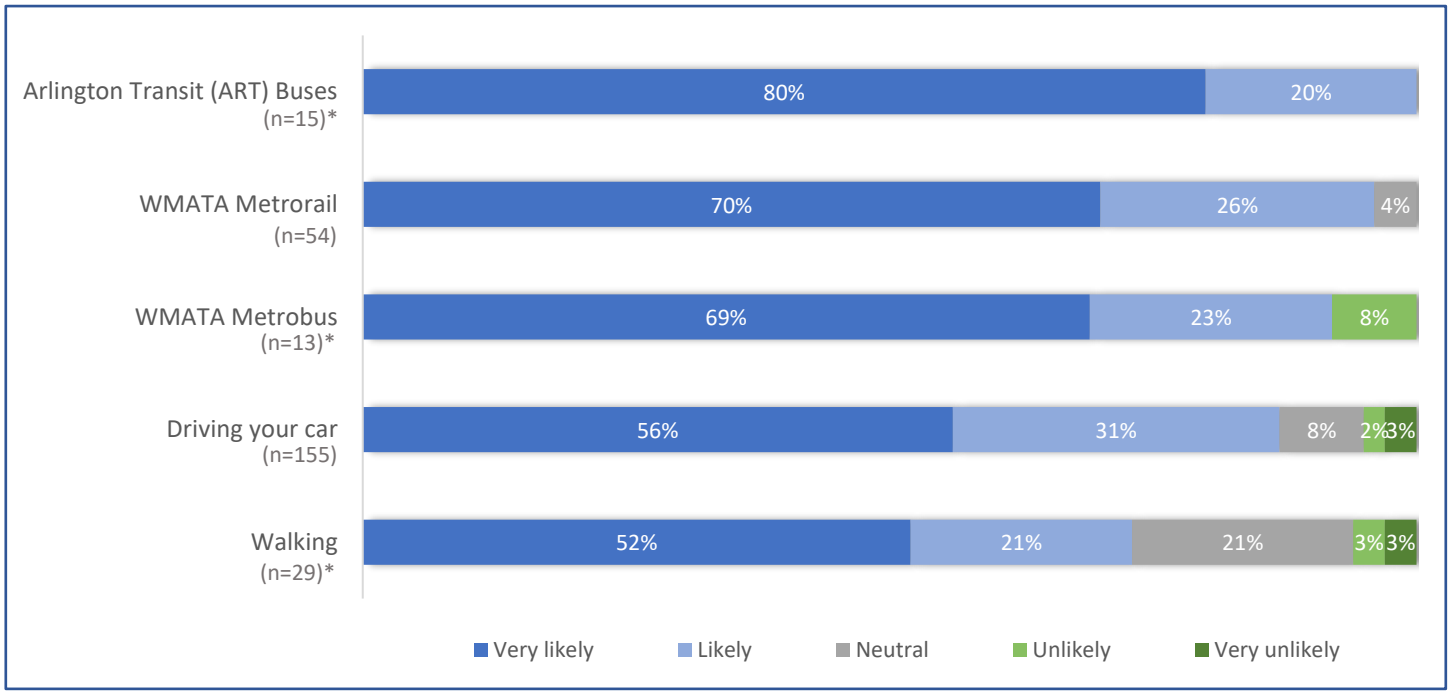


Q10. How likely are you to recommend … as a way to get to work or school to people living and working in similar areas?
Base = Those who work or attend school and have a primary mode
*Caution: Small base

Likelihood to Continue Using Commute Mode

Consistent with the results from the previous two questions, those who commute on ART are likely to continue doing so. Interestingly, the proportion of respondents who are likely to continue driving a car and using Metrorail to get to work/school is greater than the proportion who are satisfied with these modes, suggesting that there is some other factor that impacts mode choice for commute trips. However, caution is advised when interpreting this data due to the presence of small bases.

Figure 74: Likelihood to Continue Using Primary Commute Mode

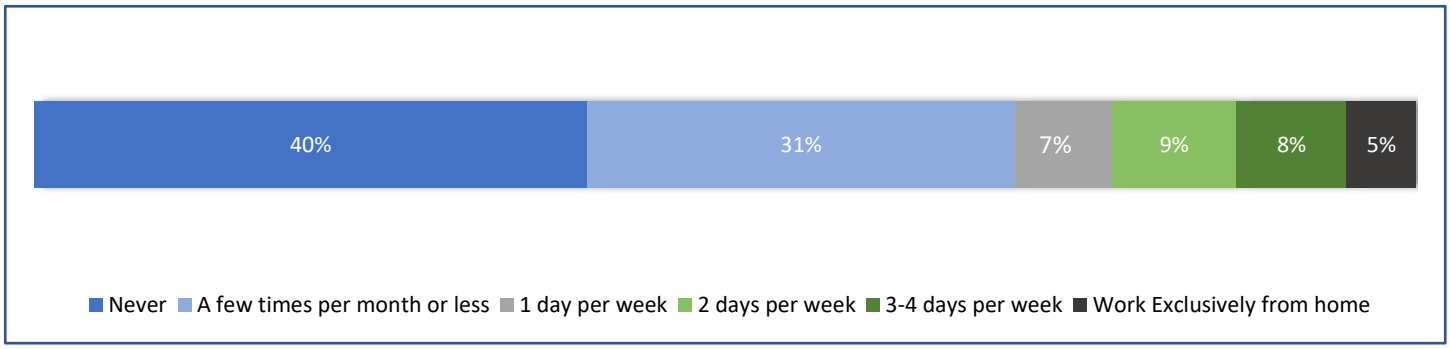


Q11. How likely are you to continue using … to get to work or school in the future?
Base = Those who work or attend school and have a primary mode
*Caution: Small base

TELECOMMUTING

Of those who work, six in ten respondents (60%) indicated that they telecommute in some capacity, while three in ten (29%) telecommute at least once a week, and 5% work exclusively from home. Less than one-half of those who work (40%) never telecommute. Frequent ART riders and public transit riders are both significantly more likely than non-public transit riders to telecommute (65% - 69% vs. 48%).

Figure 75: Frequency of Telecommuting

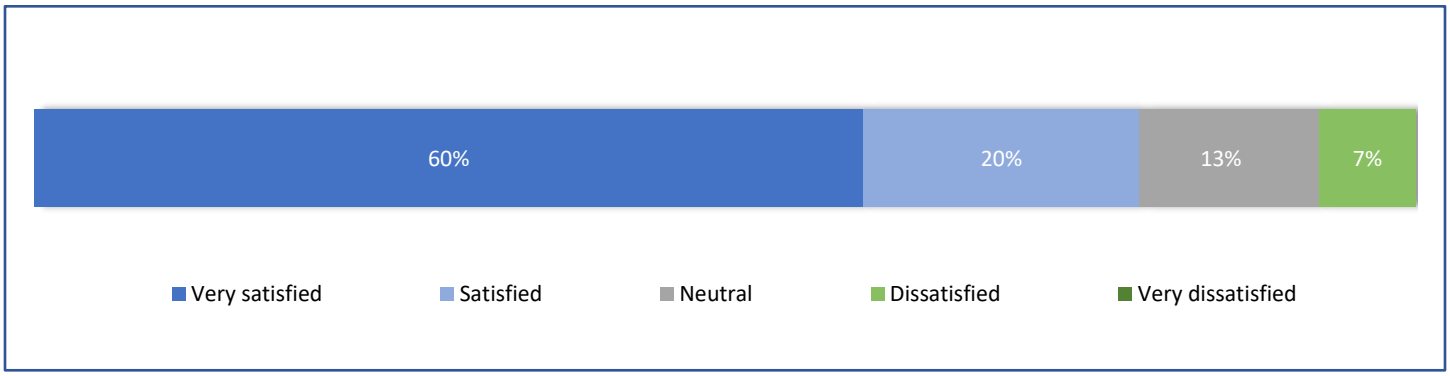


Q8. How often do you telecommute or work from home?
Base = Those who work (n=314)

Satisfaction with Telecommuting

Those who work exclusively from home were asked to rate their overall satisfaction with telecommuting. Eight in ten respondents (80%) report being satisfied or very satisfied. However, caution is advised when interpreting this data due to the presence of small bases.

Figure 76: Satisfaction with Telecommuting

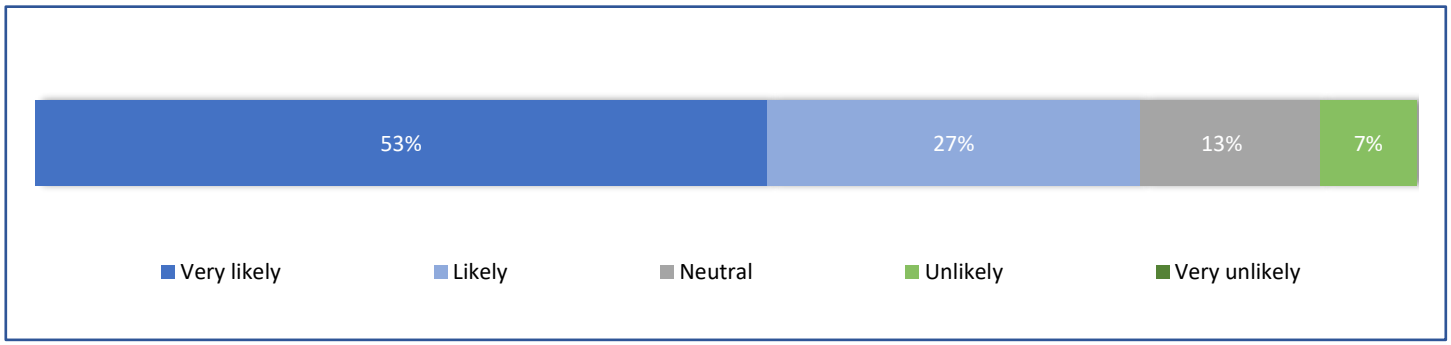


Q9a. How would you rate your overall satisfaction with telecommuting?
Base = Those who exclusively telework (n=15*)
*Caution: Small base

Likelihood to Recommend Telecommuting

When asked how likely they are to recommend telecommuting to people who live and work in similar areas, 80% of those who exclusively work from home said they are likely or very likely to recommend telecommuting. However, caution is advised when interpreting this data due to the presence of small bases.

Figure 77: Likelihood to Recommend Telecommuting

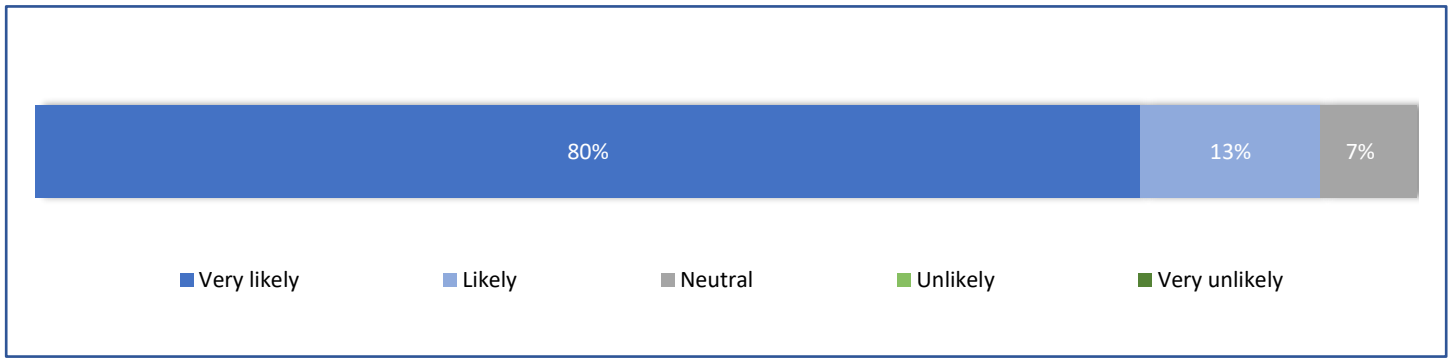


Q10a. How likely are you to recommend telecommuting to people living and working in similar areas?
Base = Those who exclusively telework (n=15*)
*Caution: Small base

Likelihood to Continue Telecommuting

Those who work exclusively from home are likely to continue doing so in the future, with 80% indicating they are very likely and 13% indicating they are likely. Notably, no one indicated that they are unlikely to continue telecommuting. However, caution is advised when interpreting this data due to the presence of small bases.

Figure 78: Likelihood to Continue Telecommuting



Q11a. How likely are you to continue telecommuting in the future?
Base = Those who exclusively telework (n=15*)
*Caution: Small base

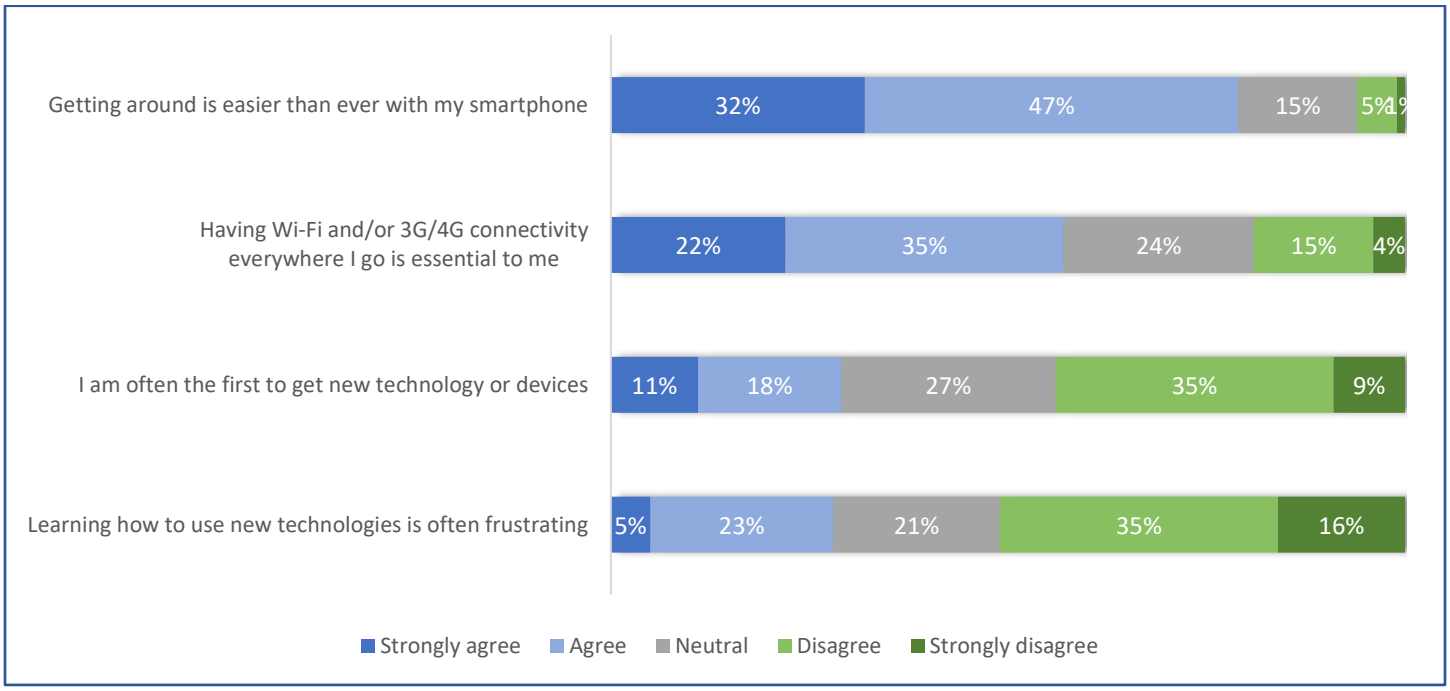
ATTITUDES ABOUT TRAVEL

Tech-savviness

Overall, the majority of these respondents agree that getting around is easier than ever with a smartphone (79%), suggesting that the relationship between technology and travel is important to this population. However, fewer agree that it is essential to have WiFi and/or 3G/4G connectivity everywhere they go (57%). While most respondents demonstrate a level of comfort with technology through their lower levels of agreement with the measure 'learning how to use new technologies is often frustrating' (28%), they are not necessarily pioneers of new technology, with just 28% indicating that they are often the first to get new technology or devices.

Notably, there are no significant differences among the rider types for these measures, with all different types of transportation users demonstrating similar attitudes towards technology.

Figure 79: Tech-savviness

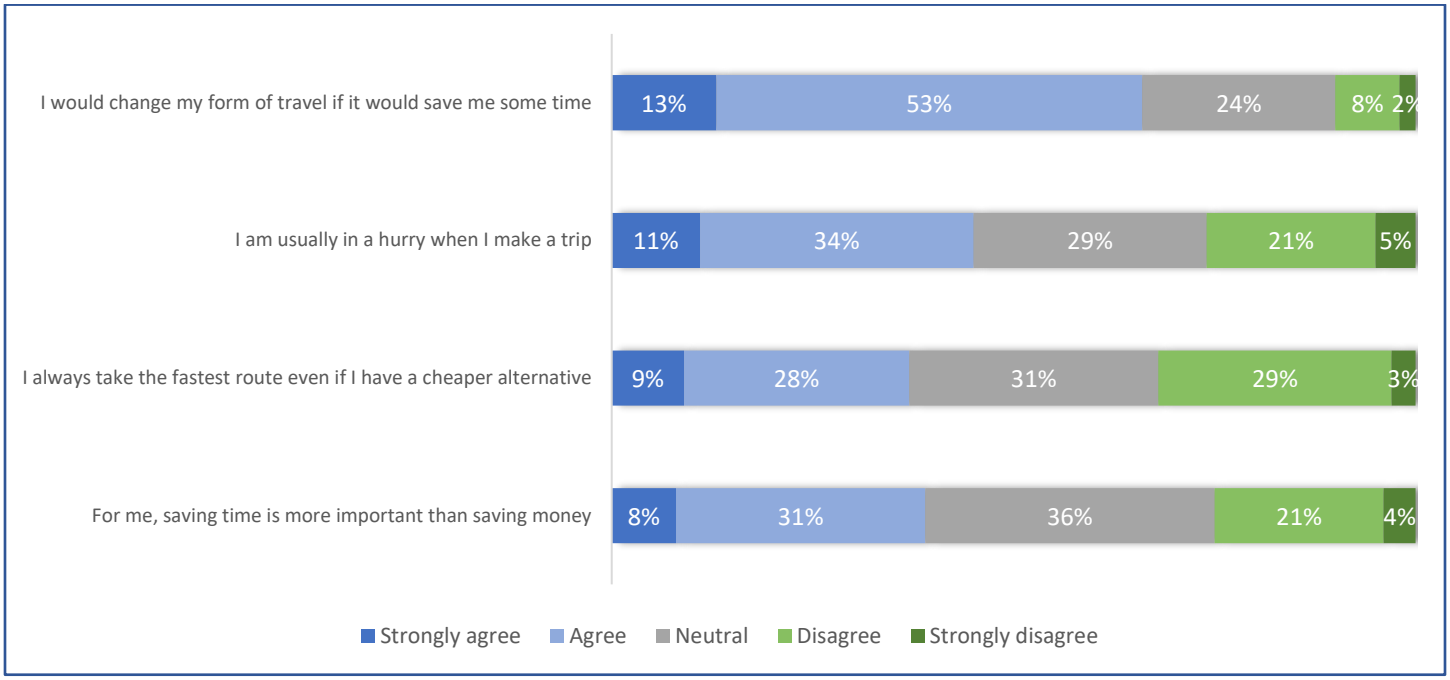


Q25. Please indicate your level of agreement or disagreement with the following statements:
Base = Total sample (n=399)

Time-sensitivity

About two-thirds of respondents (66%) agree that they would change their form of travel if it would save them some time and about one-half (45%) are usually in a hurry when they travel. This suggests that this population is at least somewhat to moderately time-sensitive. However, they do not necessarily value time over money. Only one-third of respondents agree that they always take the fastest route even if they have a cheaper alternative (37%) and that saving time is more important than saving money (39%). This suggests that those who do not agree are open to choosing cheaper modes of transportation even if they are slower. As one of the more affordable transportation options in Arlington County, this represents an opportunity for Arlington transit to advertise its lower fares to try and entice people to use this system.

Figure 80: Time-sensitivity



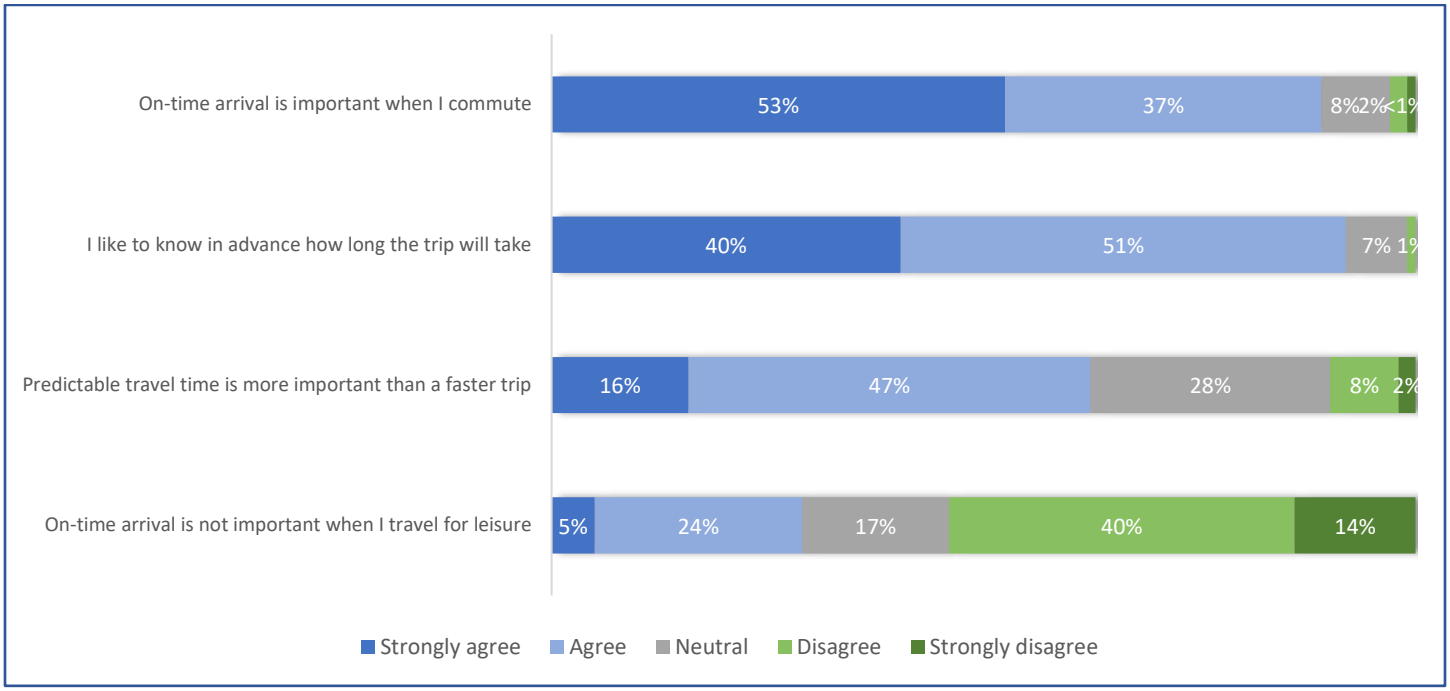
Q25. Please indicate your level of agreement or disagreement with the following statements:
Base = Total sample (n=399)

Reliability

While attitudes about time-sensitivity are somewhat mixed, attitudes about reliability are not. The vast majority of respondents agree that on-time arrival is important when they commute (90%), and they like to know in advance how long the trip will take (92%). This pro-reliability attitude is further bolstered by the nearly two-thirds of respondents who agree that predictable travel time is more important than a faster trip (63%). This attitude may provide insight into why more accurate real-time information was one of the most important features to riders in the onboard study.

Notably, this population does appear to be less concerned about reliability for personal trips, with almost three in ten respondents agreeing that on-time arrival is not important when traveling for leisure (29%).

Figure 81: Reliability

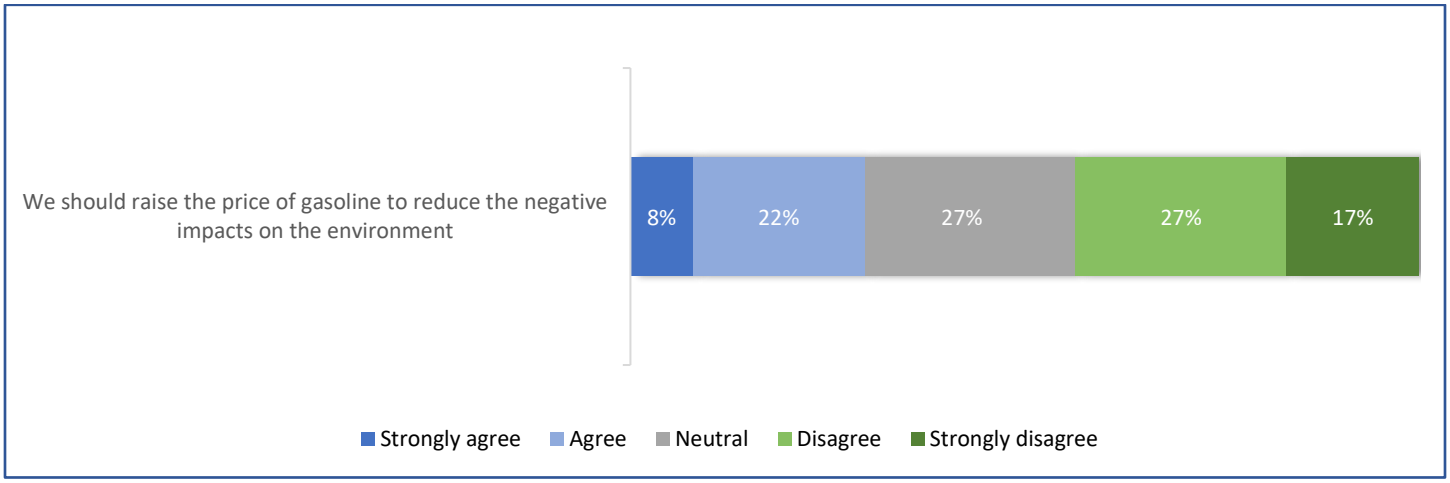


Q25. Please indicate your level of agreement or disagreement with the following statements:
Base = Total sample (n=399)

Environmental

Respondents were asked to indicate their level of agreement or disagreement with the statement, "we should raise the price of gasoline to reduce the negative impacts on the environment." Responses to this measure were mixed, while about three in ten agreed with the statement (30%), about four in ten expressed disagreement (43%). Public transit riders were significantly more likely than non-public transit riders to agree with this statement (37% vs. 24%).

Figure 82: Environmental



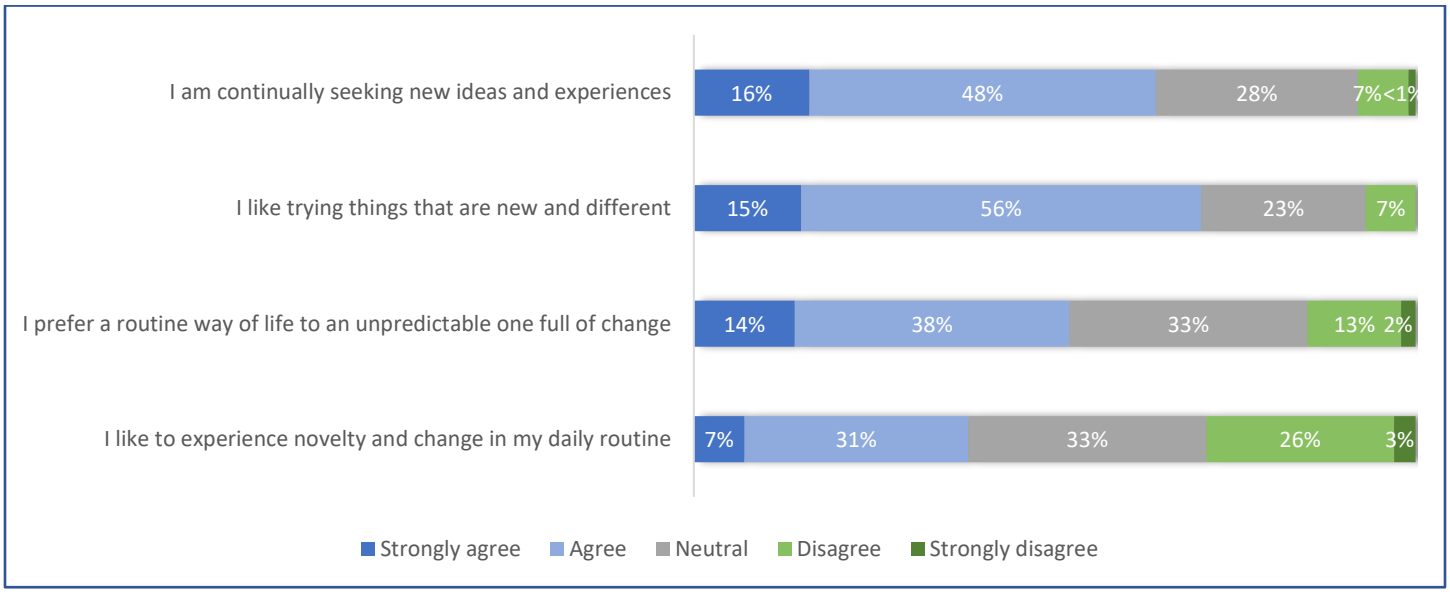
Q25. Please indicate your level of agreement or disagreement with the following statements:
Base = Total sample (n=399)

Variety Seeking

When it comes to variety seeking attitudes and behaviors, responses are mixed. While most respondents agree that they are continually seeking new ideas and experiences (64%) and that they like to try things that are new and different (70%), fewer demonstrate variety seeking attitudes when it comes to preferring a routine way of life (52%) and experiencing novelty and change in their daily routine (37%).

Interestingly, frequent ART riders display a more variety seeking attitude than public transit riders and non-public transit users. For example, frequent ART riders are significantly more likely than both other rider types to agree with the statements "I like to try things that are new and different" (85% vs. 65 % - 71%), "I like to experience novelty and change in my daily routine" (58% vs. 28% - 32%), and "I am continually seeking new ideas and experiences" (79% vs. 53% - 66%).

Figure 83: Variety Seeking



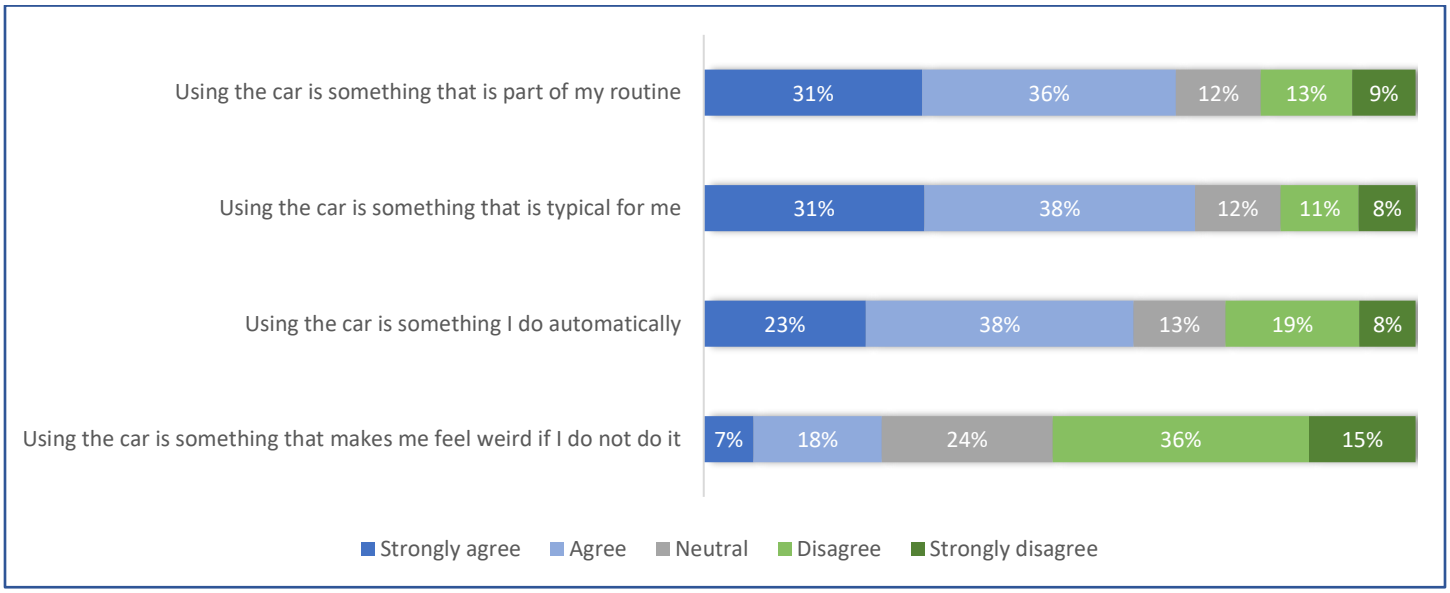
Q25. Please indicate your level of agreement or disagreement with the following statements:
Base = Total sample (n=399)

Car Habits

About two-thirds of those surveyed (67%) have access to a personal vehicle all of the time, but all respondents were asked about their attitudes and behaviors surrounding cars. More than six in ten respondents agree that using the car is something that is a part of their routine (67%) and typical for them (69%). While six in ten agree that using the car is something they do automatically (60%), that leaves 40% who may be encouraged to take another form of transportation with appropriate incentives. One-fourth of respondents agree that using the car is something that makes them feel weird if they do not do it (25%).

Notably, non-public transportation users are significantly more likely to agree with each of these statements. For example, 91% of non-public transportation users agree that using the car is something that is part of their routine, compared to 54% of frequent ART riders and 47% of public transit riders.

Figure 84: Car Habits



Q25. Please indicate your level of agreement or disagreement with the following statements:
Base = Total sample (n=399)

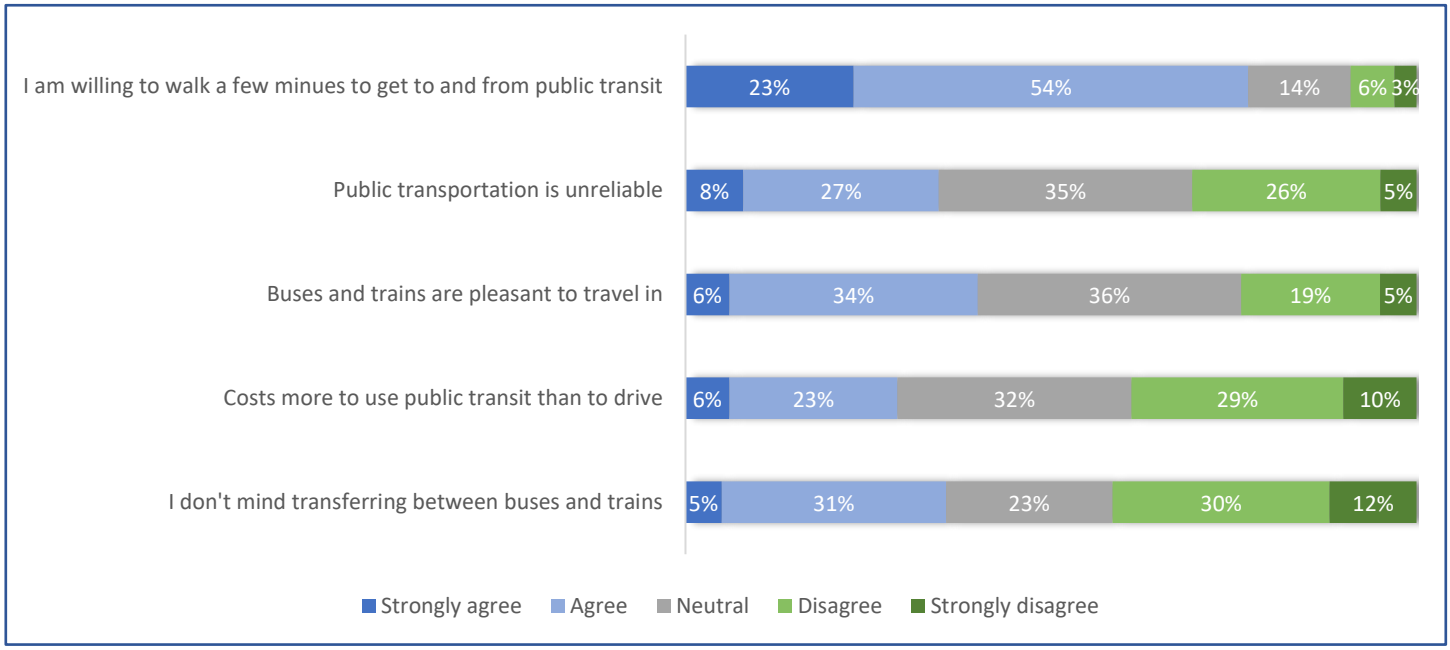
Transit

The majority of those surveyed (77%) agree that they are willing to walk a few minutes to get to and from public transit, suggesting that this is not a major barrier to ART bus usage. However, other attitudes about transit usage are mixed. While about one-third (34%) agree that public transportation is unreliable, a similar proportion disagree (31%). Likewise, a similar proportion of respondents agree and disagree that they do not mind transferring between buses and trains (36% agree and 42% disagree). Agreement is also mixed when it comes to the costs of driving a car versus public transportation. About three in ten (29%) agree that it is more expensive to use public transportation while nearly four in ten (39%) disagree. Those who use ART buses (55%) and other modes of public transportation (44%) are significantly more likely than non-public transportation users (27%) to disagree that public transportation is more expensive than driving.

More respondents agree than disagree that buses and trains are pleasant to travel in (40% vs. 24%).

Unsurprisingly, frequent ART riders and public transit riders tend to display more pro-transit attitudes than non-public transit users.

Figure 85: Transit



Q25. Please indicate your level of agreement or disagreement with the following statements:
Base = Total sample (n=399)

7 CONCLUSION

To summarize, this study conducted a mixed approach by using qualitative and quantitative data collection tools to understand the underlying dynamics behind bus ridership in Arlington County (ART). The main results and conclusions are summarized below to answer the research questions set out in this study.

Why do current ART riders choose ART? How satisfied are ART riders with the service? Why don't they ride more often? And what would it take to encourage them ride more often?

ART riders are savvy commuters who are familiar with and use different types of public transportation. As discussed during the focus group, these riders select which mode of transportation to use based on the conditions of their trip (i.e., time of day, destination, weather). Frequent ART riders are also more likely to use a variety of transportation modes for personal trips, such as walking, riding a car as a passenger, and using ride-hailing services, compared to non-public transit users, as reported in the online research. Frequent ART bus riders are also more likely to use WMATA bus or VRE for personal trips, based on the findings from the online research.

Hence, ART riders like the variety of transportation options available in Arlington County. During the focus group, ART riders praised the bus systems in Arlington County because of the number of options, the quality and the amount of service provided. According to findings from the online research, frequent ART riders are more likely to make transportation changes, in terms of using a specific mode more or less frequent. The "transportation buffet," as was mentioned in the focus group research, allows commuters the flexibility in their commute. Having the ability to make transportation changes is helpful, especially since Arlington County commuters are time conscious of their commute: according to the findings from the online research, 66% of respondents would change their form of travel to save time, and 45% are usually in a hurry when they make a trip.

Commuters in Arlington use real-time information to help plan their commute. The top sources of real-time information is Google Maps/Apple Maps (mobile or online) (66%), the transit agency app or website (42%), and physical signage (message boards in buildings, BusFinder, Metro or bus stop signage) (26%), based on findings from the online research. Findings from the online research suggest that technology makes getting around easier and knowing information about the length of their trip: 90% of respondents agree that on-time arrival is important when they commute, 91% of respondents would like to know in advance how long the trip would take, and 63% agree that predictable travel time is more important than a faster trip. Commuters use technology to help them get around, with 79% of respondents agreeing that getting around is easier than ever with a smartphone, and 57% of respondents say having wireless connectivity everywhere they go is essential, according to findings from the online research. On the other hand, while real-time information is available, it should also be accurate for it to be of use to commuters. In the focus group, the Spanish-speaking participants voiced frustration with inaccurate real-time information, which leads to longer than expected wait times.

ART is often used by riders who use it to travel to work or school, whether or not they have access to a car. Based on the findings from the online research, 71% of frequent ART riders and 79% of public transit users have access to a vehicle all or most of the time, suggesting that most of these respondents are potentially choice riders. Despite their access to a personal vehicle, 54% of ART riders and 47% of public transit riders do not see using the car as something part of their routine. This is in contrast to the 91% of non-public transportation users, who tend to drive alone most of the time, who agree that using the car is something part of their routine.

Based on the results from the onboard research, a larger proportion of choice ridership use ART to travel to and/or from work (84%) compared to dependent ridership (74%). The ART ridership uses the ART system frequently, with 93% of the ridership riding the bus at least once per week, as reported in the onboard research: transit dependent ridership are those who take the bus more frequently at 6 or 7 days a week (48%), while choice ridership tend to take the bus 5 days a week (45%).

Based on findings from the onboard research, of those that take the ART 6 or 7 days a week, a higher proportion would tend to identify as Hispanic or Latino, than Non-Hispanic or Latino (47% compared to 23%). According to the findings from the online research, 5% of all respondents cited ART as their primary mode for commuting to work/school, based on the number of one-way trips in a typical week. On the other hand, among online respondents who use ART in a typical week, 18% cited ART as their primary mode of commuting.

ART is not the top choice for personal trips, except for dependent riders. Dependent riders are those who indicated that "I don't have a driver's license – [ART] is my only means of transportation." Choice riders are those who indicated otherwise. A larger proportion of dependent ridership use ART for non-work trips, such as running errands (36%, compared to 24% of choice ridership), and/or shopping (33%, compared to 23% of choice ridership), according to findings from the onboard research. The onboard research also suggests that ART facilitates access to health care for dependent riders, given that 23% of the dependent ridership uses ART to travel to and from medical appointments. This preference is also supported by findings from the online survey, wherein 25% of all respondents take ART at least once per week for personal trips, and only 4% of all respondents identify ART as their primary mode for personal trips. Of those who use ART in a typical week, 17% identify ART as their primary mode for personal trips. Other transportation options are taken for personal trips, with frequent ART riders most likely to take a taxi or limousine (18%) or carpooling and vanpool (17%) for personal trips, while non-public transit users are most likely to drive their car (95%) for personal trips. Compared to non-public transit users, frequent ART riders and public transit riders are more likely to walk, ride in a car as a passenger (not Uber or Lyft), and use ride-hailing services for personal trips. Among the two rider types that use public transit, frequent ART riders are more likely to user WMATA bus or VRE for personal trips.

One factor that drives ART usage is cost. Those who cite the bus as their primary mode of travel tend to consider it as the most affordable option. According to findings from the focus group research, the Spanish-speaking group tend to choose the bus as their primary mode because it is the most affordable option for them, and/or it can bring

them where they need to go. For this group in particular, the bus is a way to get to a Metro station: all of the Spanish-speaking group use Metrorail, while 5 out of 8 use Metrobus, 4 out of 8 use a ride-hailing service, and 3 out of 8 use ART. According to findings from the online research, respondents who work or attend school and have a household income of less than $50,000 are more likely to take ART buses more (18%) and to drive alone more (27%) than those with a higher household income of $100,000 and higher.

Frequent ART riders, like users of other public transit, tend to live closer to work/school, and are able to make use of the public transit network in Arlington County. Proximity to work/school may factor in the respondents' choice of transportation mode, as suggested by findings from the online research: 41% of frequent ART riders live 6 to 10 miles away from work/school, while 47% of public transit riders live closer at 3 to 5 miles away from work/school. This is also supported by findings from the onboard research, which reports that on average the ART ridership lives 7.2 miles away from work/school, while 48% of the ridership lives less than 5 miles away from work/school. In addition, findings from the online research suggest that awareness and proximity to a bus stop may influence the respondents' choice of transportation mode: frequent ART riders (45%) and public transit riders (47%) are more likely to live 1 to 2 blocks from a bus stop, compared to non-public transit riders.

Frequent ART riders have a positive image of ART. According to findings from the online research, 64% of those who have heard or used ART agree or strongly agree that they have a positive image of ART buses. However, agreement with this statement is significantly lower among public transit riders (59%) and non-public transit users (57%). ART's positive image among ART riders is supported by findings from the onboard research, wherein the ART ridership described the ART bus as convenient (55%), affordable (33%), takes them where they want to go (31%) and is easy to use (29%). Participants in the focus groups also shared similar positive views about ART, describing it as "convenient", "reliable", "environmentally friendly", "easy to use", "stops close to my starting point", "on-time", "enough seats", "direct routes", and "available schedules meet my needs."

Similarly, satisfaction is high among the ART ridership, with 86% indicating that they are satisfied with ART, and 78% indicating that they are very likely to recommend ART for travel around Arlington, as reported in the onboard research. The level of satisfaction varied by route, as reported in the onboard research: respondents reported higher satisfaction on routes 43 Courthouse-Rosslyn-Crystal City (94% satisfied) and 55 East Falls Church-Lee Highway-Rosslyn (93%) satisfied, while routes 42 Ballston-Pentagon and 75 Shirlington-Wakefield HS-Ballston reported lower levels of satisfaction (76% of ridership satisfied and 72% of ridership satisfied, respectively).

There is a high likelihood of continuing to ride ART among choice riders (82%) compared to dependent riders (69%), based on findings from the onboard research. In fact, findings from the onboard research show that 11% of the transit dependent ridership say that they are very unlikely to user ART in the future, compared to only 5% of the choice ridership who share this sentiment.

The high satisfaction and likelihood of continued ridership may stem from the low incidence of issues experienced with ART. According to findings from the online research, 51% of respondents who have used ART have not experienced any issues on ART. Of those that experienced issues on ART, the most frequently cited issues encountered by ART users were the bus arriving late for more than 10 minutes (31%), followed by an overcrowded bus (20%), and the bus did not show up (13%).

ART riders still find gaps in the routes, when compared to other public transportation options. ART riders did not describe ART as "going to places I need to go," based on the findings from the focus group research. In contrast, this was used to describe both Metrobus and ride-hailing services.

The routes frequently used varies depending on the ridership type. There was no overlap with the routes most frequently used by each ridership type. According to the findings of the onboard research, transit dependent ridership tend to use the following routes more frequently, compared to choice ridership: Route 41 Columbia Pike - Ballston - Courthouse (59%), Route 77 Shirlington - Lyon Park - Courthouse (20%), and Route 75 Shirlington - Wakefield HS - Carlin Springs Road - Ballston - Virginia Square (18%). These routes tend to service areas farther from the metro, away from the Rosslyn-Ballston Corridor and U.S. 1 Corridor (Crystal City – Pentagon City), such as Shirlington, Lyon Park, Wakefield High School and Carlin Springs Road.

On the other hand, the choice ridership, or riders that take the ART bus five times a week, tend to use the following routes more frequently compared to the transit dependent ridership: The routes regularly used by the Choice Ridership are Route 55 East Falls Church - Lee Highway - Rosslyn (20%), Route 43 Crystal City - Rosslyn - Courthouse (17%), and Route 84 Douglas Park - Nauck - Pentagon City (5%).

Why did previous ART riders stop riding? What would it take to encourage them to ride again?

Findings from the online research about changes in the frequency of ART use suggest no net change in usage, but it is difficult to determine if the volume of increased usage offsets the volume of decreased usage. For example, for work/school trips, 9% of respondents increased their usage of ART while 10% of respondents decreased their usage. Similarly, for personal trips, 8% of respondents indicated an increase in their usage of ART bus while 9% decreased their usage. The same is observed in the findings of the onboard research, wherein 45% of the ridership reported using ART less often, while 45% reported riding the ART just as much.

Life changes (e.g., job/school/residential location change, schedule changes, having children, separation or divorce) influence a change in transportation choice. According to findings from the online research, respondents who work/go to school and reported experiencing a life change are more likely to change their transportation mode for work/school trips as such: they increase their use of WMATA Metrorail (17%) and decrease their usage of other public transit options like WMATA Metrobus (17%), ART buses (15%), ride-hailing service (19%) and bike-sharing/biking (11%).

Those who stopped or decreased their use of ART buses most often did so based on changes in personal life circumstances, such as changing jobs or residences. According to findings from the online research, frequent ART riders reported experiencing the following life changes in the past year: marriage or divorce (13%), change in household size (12%), and childbirth (10%). The most frequently cited life changes for all respondents in the online research are: change of job/school location (23%), followed by change of residential location (21%) and change in household size (12%).

Possibly, decreased ridership may be driven by a change in preference because of a change in status, age, or level of income. This conclusion is provided to add nuance to the findings, but not to draw a definite conclusion because the figures supporting this are based on a small number of respondents. Based on the findings from the online research, the most frequently cited reasons for decreased ART bus usage tend to be changes in preference and status: change in job/school status or location (37%), routes and schedules were not suitable anymore (27%), my personal preference changed (22%), and change in residential location (20%). In terms of reasons specific to ART, 17% experienced too many problems on ART or was using ART temporarily when Metrorail was not available, which prompted decreased ART usage. Among online respondents who have heard of ART but have not used it, respondents under the age of 34 are more likely to not use ART because it doesn't suit their lifestyle (19%), or they don't like buses (10%) compared to respondents age 55 years old and over.

Findings from this report cannot provide clear evidence that ride-hailing is replacing ART bus rides, but respondents who report increasing ride-hailing usage report taking less trips on other transportation modes. Of respondents who reported an increase in ride-hailing use, 19% reported taking ART less often, and 56% reported driving alone less, according to findings from the online research. Other forms of public transit were taken less frequently as well, with 35% taking less trips on WMATA Metrorail and 14% taking less trips on Metrobus, based on the results from the online research.

How can ART attract new riders, build confidence in the system, and reward loyalty among current and new riders?

While ART enjoys high satisfaction rates from ART users and a general positive outlook from both users and non-users alike, there is opportunity to retain and increase ridership: by making enhancements to service to enhance the riders' experience, and disseminating information about ART to increase awareness of ART as an option for traveling around Arlington County.

According to findings from the online research, the top items that respondents think would increase the use of ART are: more frequent bus service (28%), more areas serviced (26%), reduced fares (23%), free transfers between modes (22%), free rides to try out new routes (22%), and/or free Wi-Fi (20%). The suggestions appear to stem from the respondents' own experiences and perceptions of ART, since the type of suggestions differed thematically by rider type. Among frequent ART riders, the top suggestions centered on improving service and amenities: more frequent bus service (40%), shelters/benches at bus stops (23%), and newer and more modern buses (15%),

according to the results of the online research. Similar suggestions were cited by ART riders in the onboard research: frequent bus service (38%), more accurate real-time information (34%), better on-time performance (32%), reduced fares (29%), more areas serviced (28%), and free wi-fi (27%). Conversely, public transit riders' top suggestion was more available route information (34%), which suggests low familiarity with the services offered by ART, based on the results of the online research.

The analysis in this report makes several data-driven insights or suggestions possible. These are formulated and explained below.

Suggestion 1: *Continue to study current and potential customers to understand how to better tailor and target investments in service and marketing.*

Cater to tech-savvy (digital) travelers. Findings from the online research suggest that technology makes getting around easier and knowing information about trip length. Commuters use technology to help them get around, with 79% of respondents agreeing that getting around is easier than ever with a smartphone, and 57% of respondents saying that having wireless connectivity everywhere they go is essential, according to findings from the online survey.

Cater to Spanish-speaking travelers. Several results throughout the research were unique to Spanish-speaking participants, including: (1) being frustrated with inaccurate real-time information, (2) choosing the bus because it is the most affordable option, and (3) using the bus to get to a Metro. Participants in the Spanish-speaking group had some suggestions to specifically enable their community to increase transit ridership and improve their travel experience. They feel that the bus system primarily serves their community, and as such they would like information that caters to that. These participants would like to see all information also made available in Spanish, and communications with more graphics than text to help grab people's attention and better illustrate key concepts. Aside from that, continuing to translate survey material to Spanish and run community events and focus groups in Spanish-speaking communities are ways to make sure you cater to their needs.

Cater to choice riders. Seventy-one percent of frequent ART riders and 79% of public transit users have access to a vehicle all or most of the time, suggesting that most of these respondents are potentially choice riders. The analysis of the online portion of the report highlights several differences between choice and dependent riders. Having choice riders makes it harder for transit agencies to retain them without continuously making sure the system meets their needs.

Cater to people experiencing changes in lifestyle. Most ART riders have had changes in their lifestyles or milestones such as education, employment, marriage or childbirth. This adds a disruptive element to their transport "routine", with implications for weaker habits and an opportunity for them to change behavior again. In fact, according to findings from the online research, respondents who work/go to school and reported experiencing a life

change are more likely to change their transportation mode for work/school trips as such: they increase their use of WMATA Metrorail (17%) and decrease their usage of other public transit options like WMATA Metrobus (17%), ART buses (15%), ride-hailing service (19%) and bike-sharing/biking (11%). Therefore, this also adds an additional layer of burden to transit agencies that might see more dynamic changes in ridership depending on changes in lifestyle.

Suggestion 2: (1) on-time arrivals, (2) expanding route coverage, (3) frequency and (4) providing amenities such as bus shelters.

Improve on-time arrivals. Better on-time performance for ART could help retain and attract riders, given that a large percentage of the ridership primarily use ART to travel to and/or from work. Based on the results from the onboard research, a larger proportion of choice riders use ART to travel to and/or from work (84%) compared to dependent ridership (74%). Findings from the online research show that commuters value arriving to their destination on time, and knowing information about their commute ahead of time: 90% of respondents agree that on-time arrival is important when they commute, and 91% of respondents would like to know in advance how long the trip would take. Moreover, ART is not deemed reliable for time-sensitive situations, according to findings from the online research. Only 2% of respondents in the online survey would take ART to get to their destinations during time-sensitive situations, while 58% would choose to drive and 23% would use a ride-hailing service like Uber or Lyft.

Expand route coverage. Increasing areas serviced is one of the top suggestions for improving ART. More areas served was one of the top suggestions for ART from the onboard research (28%), as well as from the online research (26%). In the focus group research, participants discussed how more routes would be helpful, especially when moving beyond the main corridors of Arlington or out towards Reagan National Airport. Moreover, ART riders did not describe ART as "going to places I need to go," based on the findings from the focus group research. In contrast, this was used to describe both Metrobus and ride-hailing services. While in reality, ART should have a better coverage than other buses (WMATA), respondents might be referring to service coverage outside of Arlington. The nature of the data collection and the questions in the online and on-board surveys (e.g. "more service areas" as an option to what would make them rider more often) does not allow us to make any conclusions regarding that aspect. This is left for future research

Increasing frequency. The ART riders who participated in this survey were read a list of items that might encourage someone to choose to ride the ART bus more often and asked to indicate which, if any, would encourage them to do so. More frequent bus service was chosen most (38%). Consistent with the findings from the onboard study, more

frequent bus service was the top response selected by frequent ART riders in the online survey (40%). Frequency was also the top mention for 18 to 34 years old in terms of what would make them consider riding ART more often.

Improve bus shelters. One of the top suggestions that would increase ART usage was shelters/benches at bus stops (23%), according to findings from the online research. This is echoed by findings from the focus group research, wherein Spanish-speaking participants suggested adding more bus shelters and improving existing bus shelters.

Suggestion 3: Invest in ART marketing to: (1) make it more inclusive, (2) increase awareness of the service, (3) target specific segments such as seniors, and (4) promote cost savings of shifting to public transit and a hassle-free commute experience.

More inclusive information and communication materials. In the focus group research, the Spanish-speaking group suggested that there should be easier ways to present information to appeal to a broad Spanish-speaking group, such as having communication materials in Spanish or including more images and graphics in the materials.

Increase efforts to promote ART routes, ART bus stops, and ART payment methods (i.e., SmarTrip card and available discounts). Lack of awareness and information was flagged as one of the biggest barriers to using ART, especially among non-riders/lapsed ART users. Findings from the focus group research show that non-riders/lapsed ART users do not know the routes, fare, and level of services provided by ART. A few focus group participants did not know that ART was a form of public transportation, and thought it was a private bus, according to the focus group research. In the focus group, participants suggested different promotion schemes for ART: non-riders/lapsed users proposed partnering with local employers and businesses and advertising on social media and at local destinations, while ART riders suggested a street team outreach where a brand ambassador is stationed at popular Metro stops to provide information on ART.

Promoting the senior discount for SmarTrip card may increase ridership among senior citizens. Findings from the onboard research suggest low awareness of senior discount for the SmarTrip card, given that only 67% used a senior discount SmarTrip card even though 96% of the senior citizen ridership paid their fare with a SmarTrip card.

Promote cost savings of shifting to public transit. In the focus group research, participants discussed changing their primary mode of transportation to public transit after they realized they could no longer afford the costs of owning a car. Moreover, according to findings in the focus group research, participants think of ART and Metrobus as roughly the same, so a reduced fare may encourage commuters to take ART instead.

Promote a hassle-free commuting experience. In the focus group research, participants that use Metrorail discussed how taking the Metro is easier than driving a car because there is no need to worry about parking, gas, or any other stresses associated with car use and ownership. There is potential to attribute the hassle-free commuting experience to taking the ART bus, as well.

Suggestion 4: Celebrate ART's well-perceived image and high satisfaction but explore innovative ways to stay competitive. Examples include: (1) new alternative modes of payment, (2) include drivers in the effort to promote the user experience, and (3) appoint ambassadors to promote the ART service and build rewards programs.

Explore new, alternative modes of payment for ART. One of the findings from the focus group research was a proposal to expand the available payment options to include credit cards or mobile payment, which participants suggested could increase "spur-of-the-moment" trips. In the discussions, participants cited instances where they did not take ART because they did not have a SmarTrip card for payment.

Better service and assistance from the drivers. Implement service and inclusiveness training for ART bus drivers so that they can provide better guidance and courtesy to ART riders. For example, ART bus drivers may serve as the first point-of-contact for riders, so ART bus drivers can provide information on routes, fares, and fare payment. In the focus group research, participants shared experiences of feeling discriminated against by either the bus drivers or the other passengers.

Think outside the box for promoting awareness of ART and loyalty. In the suggestions to increase ridership, respondents were creative. They suggested: (1) sending an ambassador out to teach people how to use the ART bus system, (2) creating bus ratings like Uber and (3) developing a rewards program. They were creative in the rewards programs they suggested, such as ride nine times and get the tenth for free. Moreover, based on findings from the online research, the largest age group among the online survey respondents is the cohort of 18-to-34-year olds (159 out of 399 respondents), followed by the cohort of 35-to-54-year olds (134 out of 399 respondents). For these two age cohorts, mobile payment and getting rewards/loyalty points were enticing offerings to encourage ART usage: of the 18-34 year old cohort, 22% liked mobile payment and 21% like a rewards/loyalty point system, while of the 35-54 year old cohort, 20% liked mobile payment and 15% liked a rewards/loyalty system. The idea of a loyalty program was also discussed in the focus group research, but the results were mixed about using a loyalty program to promote ART usage. For the 18-34 age cohort, 15% of respondents had higher levels of interest in riding with ART if it were better integrated with Uber and Lyft, according to the results of the online research.

Finally, the results of this study constitute an important undertaking in understanding the wants and needs of travelers in Arlington, in an effort to assess the underlying dynamics behind ART ridership and pinpoint ways with which to make the system more competitive and attract riders. While more research is necessary to draw robust conclusions on the optimal ways by which to gain and maintain ridership, the preliminary results from this study can serve as a roadmap for complementing the strategic efforts and transportation planning for Arlington County.

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9 APPENDIX

FOCUS GROUP PARTICIPANT PROFILE

Table 35: Detailed Participant Profile

	Non/Lapsed	Current	Spanish
Neighborhood			
Rosslyn-Ballston Corridor	4	3	-
Arlington Mill	8	3	5
Buckingham	3	2	3
Type			
Lapsed Rider	4	-	3
Non-Rider	12	-	3
Current Rider	-	8	2
Gender			
Male	8	3	4
Female	8	5	4
Age			
18-24	1	-	1
25-34	12	3	2
35-44	1	2	2
45-54	-	1	-
55-64	1	1	2
65-74	1	1	1
Ethnicity			
African American	3	2	-
Hispanic	6	2	8
Native American	-	-	-
Asian/Pacific Islander	-	1	-
White	6	5	-
Multiracial	5	-	-
Other	1	-	-
Income			
Less than $35,000	1	1	3
$35,000-$49,999	3	3	4
$50,000-$74,999	6	1	1
$75,000-$99,999	3	-	-
$100,000-$149,000	3	2	-
$150,000 or more	-	1	-

FOCUS GROUP RECRUITMENT SCREENER

wba RESEARCH

Job No. 18-504
October 2018

ART SATISFACTION FOCUS GROUPS
RECRUITMENT QUESTIONNAIRE

NAME:_____

ADDRESS:_____

CITY: _____ **STATE:** _____ **ZIP:**_____

EMAIL ADDRESS: _____

TELEPHONE NUMBER: ( )_____

DATE/LOCATION OF GROUP: _____**TIME:**_____

INTERVIEWER: _____ **DATE RECRUITED:**_____

LEAVE MESSAGE: Hello, **my name is _____from _____**. We're inviting people to participate in **group discussions** among Arlington residents to get their opinions of transportation services in Arlington County. **Please be assured that this will not be a sales meeting. It is a part of a market research study**. We think that you will find the discussion very interesting and we'd very much like to include your opinions. If you **qualify for and attend the discussion you will be compensated $100** for your time and opinions. Please call _____ if you are interested in joining a **group discussion in November**. Thank you and have a nice evening.

(ASK TO SPEAK TO THE HEAD OF HOUSEHOLD.)

(READ:) Hello, **my name is _____from _____.** We're inviting people to participate in **group discussions** among Arlington residents to get their opinions of transportation services in Arlington County. **Please be assured that this will not be a sales meeting. It is a part of a market research study.** If you **qualify for and attend the discussion you will be compensated $100** for your time and opinions.

Q1. Do you live in Arlington, Virginia?

01	Yes		
02	No	→	**THANK AND TERMINATE**
98	**DO NOT READ:** Refused	→	**THANK AND TERMINATE**
99	**DO NOT READ:** Don't know	→	**THANK AND TERMINATE**

Q2. Where in Arlington do you live? Would you say…? **(SELECT ONE ANSWER PER ROW. RANDOMIZE A THROUGH D, KEEPING E LAST.)**

	Yes	No	DO NOT READ: Don't know/Refused
a. Arlington Mill	01	02	98
b. Buckingham	01	02	98
c. Rosslyn-Ballston Corridor	01	02	98
d. Shirlington	01	02	98
e. Somewhere else	01	02	98

IF [Q2A(02-98) AND Q2B(02-98) AND Q2C(02-98) AND Q2D(01-98) AND Q2E(01-98)], THANK AND TERMINATE.

Q3. Do you or does anyone in your immediate family work for…? **(SELECT ONE ANSWER PER ROW. RANDOMIZE KEEPING A & B TOGETHER.)**

	Yes (TERMINATE IF ANY SELECTED)	No	DO NOT READ: Don't know/Refused (TERMINATE IF ANY SELECTED)
a. A local transit agency including WMATA, Arlington Transit, or Fairfax Connector	01	02	98
b. Arlington County government	01	02	98
c. A market research or advertising company	01	02	98

Q4. Have you ridden an Arlington Transit – ART bus in the past year?

01	Yes	→	**GO TO Q6**
02	No	→	**GO TO Q5**
98	**DO NOT READ:** Don't know/Refused	→	**THANK AND TERMINATE**

THOSE WHO HAVE NOT RIDDEN ART IN THE PAST YEAR [Q4(02)], ASK:

Q5. Have you **ever** ridden an Arlington Transit – ART bus?

01	Yes	→	**GO TO Q5A**
02	No	→	**GO TO Q7**
98	**DO NOT READ:** Don't know/Refused	→	**THANK AND TERMINATE**

THOSE WHO HAVE EVER RIDDEN ART [Q5(01)], ASK:

Q5A. Approximately how many times did you ride an Arlington Transit – ART bus **in 2017**?

_____

(IF LESS THAN 4, THANK AND TERMINATE)

THOSE WHO HAVE RIDDEN ART IN THE PAST YEAR [Q4(01)], ASK:

Q6. Have you ridden an Arlington Transit – ART bus **in the past 7 days**?

01	Yes	→	**GO TO Q7**
02	No	→	**THANK AND TERMINATE**
98	**DO NOT READ:** Don't know/Refused	→	**THANK AND TERMINATE**

ASK EVERYONE:

Q7. What types of transportation do you use in a typical week? Please think about all trips you take for all purposes. **(IF ONLY ONE MODE MENTIONED, PROBE:** Any others? **READ LIST IF NECESSARY. ACCEPT ALL THAT APPLY.)**

	Q7
Driving your car alone	01
Driving your car with passengers	02
Riding in a car as a passenger	03
Carpooling or vanpooling	04
WMATA Metrorail	05
WMATA Metrobus	06
Fairfax Connector	07
DC Circulator	08
Virginia Railway Express (VRE)	09
ART Bus	10
Taking a taxi or limousine	11
Using a ride hailing service like Uber or Lyft	12
Riding a motorcycle	13
Bikeshare/Riding a bicycle	14
Dockless bike	15
Scooter	16
Walking	17
Other **(specify)**	95
DO NOT READ: None, have not traveled	96
DO NOT READ: Refused	98
DO NOT READ: Don't know	99

IF Q6(01) AND NOT Q7(10), THANK AND TERMINATE.
IF Q5(01) AND Q7(01-02,96-99) AND NOT Q7(03-95), THANK AND TERMINATE.
IF Q5(02) AND NOT Q7(05-09), THANK AND TERMINATE.

ASK EVERYONE:

Q8. What is your employment status? Are you…? **(READ LIST. ACCEPT ONE RESPONSE ONLY.)**

01 Employed full-time,
02 Employed part-time,
03 A student (Specify:_____)
04 Retired,
05 A homemaker, or
06 Not currently employed?
98 **DO NOT READ:** Refused

THOSE WHO ARE EMPLOYED FULL-TIME OR PART-TIME [Q8(01-02)], ASK:

Q9. What is your occupation and where do you work?

THOSE WHO REFUSE COMPANY: In what type of industry do you work?

(SPECIFY BOTH ANSWERS BELOW.)

_____ _____
OCCUPATION **COMPANY/INDUSTRY**

98 **DO NOT READ:** Refused → **THANK AND TERMINATE**

ASK EVERYONE:

Q10. With which gender identity do you most identify? **(GET A MIX.)**

01 Male/Man
02 Female/Woman
03 Trans-Male/Trans-Man
04 Trans-Female/Trans-Woman
05 Trans (not specific)
06 Non-binary
07 Gender queer
08 Agender
95 **OTHER: (SPECIFY**_____)
98 **DO NOT READ:** Refused
99 **DO NOT READ:** Don't Know

These next few questions are for background purposes only, and to ensure that we include a mix of different types of people in the discussions.

Q11. Please stop me when I reach the category that includes your age. **(READ LIST. GET A MIX.)**

01	Under 18	→	**THANK AND TERMINATE**
02	18-24		
03	25-34		
04	35-44		
05	45-54		
06	55-64		
07	65-74		**(MAX = 2 PER GROUP)**
08	75 or older	→	**THANK AND TERMINATE**
98	**DO NOT READ:** Refused		

Q12. Are you of Spanish, Hispanic or Latino origin? **(GET A MIX.)**

01 Yes
02 No
98 **DO NOT READ:** Refused

Q13. What is your race or ethnicity? Are you…? **(READ LIST. ACCEPT ONE RESPONSE ONLY. GET A MIX.)**

01 Caucasian,
02 African-American,
03 Native-American or Alaskan native,
04 Asian or Asian-American,
05 Native Hawaiian or Pacific Islander,
06 Multi-racial, or
95 Something else **(specify)**_____
98 **DO NOT READ:** Refused

Q14. What is your marital status? Are you… **(READ LIST.)**

01 Married or Partnered,
02 Single,
03 Divorced, Separated, or
04 Widowed?
98 **DO NOT READ:** Refused

Q15. What is the primary language spoken at your home? **(DO NOT READ LIST.)**

01 English
02 Spanish → **SPANISH GROUP**
03 Chinese/Mandarin/Cantonese
04 French
05 Arabic
06 Vietnamese
07 Tagalog
08 Korean
09 Amharic
95 Other (specify) _____
99 **DO NOT READ:** Don't know/Refused

Q16. How well do you speak English?

01 Very well
02 Well
03 Not very well → **IF Q15(01,03-99) THANK AND TERMINATE**
04 Not well → **IF Q15(01,03-99) THANK AND TERMINATE**

Q17. Please stop me when I reach the category which includes your total annual taxable household income. **(READ LIST.)**

01 Less than $35,000
02 $35,000 to less than $50,000
03 $50,000 to less than $75,000
04 $75,000 to less than $100,000,
05 $100,000 to less than $150,000
06 $150,000 or more
98 **DO NOT READ:** Refused

Q18. When was the last time you participated in a market research group discussion or focus group? **(READ LIST.)**

01 Within the past 6 months, → **THANK AND TERMINATE (SAVE DATA FOR CALLBACK. RECORD THE TOPIC AND FORMAT OF THE RESEARCH.)**
02 More than 6 months ago, or
03 Never
98 **DO NOT READ:** Don't know/Refused → **THANK AND TERMINATE**

INVITE QUALIFIED RESPONDENT TO FOCUS GROUP

#	Type	Qualification	Date	Time
1	ART Riders	**Q6(01) AND Q7(10)**	11/28	8pm
2	ART Lapsed/Non-riders	**[Q5A(>=4) AND Q7(03-95)] OR [Q5(02) AND Q7(05-09)]**	11/28	6pm
3	ART Lapsed/Non-riders	**[Q5A(>=4) AND Q7(03-95)] OR [Q5(02) AND Q7(05-09)]**	11/29	8pm
4	Spanish: ART Riders/Lapsed Riders	**[Q5A(>=4) AND Q7(03-95)] OR (Q5(02) AND Q7(05-09)) OR [Q6(01) AND Q7(10)] AND Q15(02)**	11/29	6pm

As mentioned in the beginning of this call, we're inviting people to participate in group discussions among Arlington residents to get their opinions of transportation services in Arlington County. Please be assured that this will not be a sales meeting. It is a part of a market research study. We think that you will find the discussion very interesting and we'd very much like to include your opinions.

You will be provided with $100 and refreshments for attending as a token of our appreciation for your time and opinions. The discussion will last approximately 1½ to 2 hours.

In addition, anyone who arrives at least 15 minutes prior to the group will be entered into a raffle for an additional $50.

Q19. Will you be able to attend?

01	Yes	→	**CLARIFY DATE AND TIME AND CONTINUE**
02	No	→	**THANK AND TERMINATE**

IF RECRUITED IN SPANISH, CONFIRM: This group will be held entirely in Spanish.

To confirm, the group is scheduled for **[INSERT DATE AND TIME]** at **1501 Wilson Blvd., Suite 1100, Arlington, VA 22209**. Please note that the entrance to this building is on N Oak St. The closest Metro stop is the Rosslyn Station. This location is also accessible by ART Bus routes 43, 45, 55 and 61 as well as Metrobuses 4B and 38B. We request that you arrive 15 minutes prior to your scheduled group.

So that I may send you a confirmation email, including directions to the group, may I please have your complete email address? Also, I'd like to confirm your full name and telephone number. **(RECORD ALL INFORMATION. MUST GIVE EITHER HOME ADDRESS OR EMAIL ADDRESS TO CONTINUE.)**

To repeat, the group is scheduled for: **[DAY/DATE/TIME]**. If for some reason you are unable to attend, please call us immediately at the number provided in your email so we can invite another participant. We are only inviting a small number of people to the discussion. Please plan to bring reading glasses if you think you will need them to read potentially small text.

RESIDENT DISCUSSION GUIDE

WBA Job No. 18-504
November 2018

Mobility Lab™

Residents Focus Group Discussion Guide

I. INTRODUCTION (10 minutes)

a. Welcome and thank you for joining us this evening. Our purpose this evening is to discuss transportation in Arlington County. You will be doing a couple of things: participating in a group discussion, doing some private writing, and working on an activity.

b. About this focus group session

1. Form of market research, not selling anything

2. Discussion will last about 2 hours

3. Audio recording

4. Closed-circuit video; associates viewing, notes may come in

5. All comments will be kept anonymous and confidential

6. Have courage of convictions; don't let group sway you

i. Do work for "equal air time." Your thoughts are important, but I want to make sure everyone has equal chances to voice their opinion.

7. No right or wrong answers, only your opinion

8. Don't have to raise hands, but speak one at a time

9. Work for independent market research company

10. Turn off cell phones

11. Feel free to get up to use the restroom, water in the back

c. Respondent introduction

1. First name

2. Where live in area

3. How long lived in area

4. Tell me something about yourself (work, family, hobby)

5. Ice breaker

II. PUBLIC TRANSPORTATION IN ARLINGTON COUNTY (10 minutes)

a. Now we're going to complete a brief exercise. I will mention a phrase and I want you to write down whatever comes to mind when I say this phrase. You can write down a word, experience, or sentence… whatever comes to mind, but I want you to write it down first, without discussing it. Then, once everyone has had a chance to write down their thoughts, we will discuss.

1. What comes to mind when I say "Public Transportation in Arlington County"? **(HAVE PARTICIPANTS SHARE WHAT THEY WROTE AND PROBE FOR THEIR REASONING AS NEEDED.)**

i. PROBES:

a. Tell me more about that.

b. What are the reasons you thought of these words/phrases?

c. What influenced your choices for these words/phrases?

III. LOCAL TRAVEL (30 minutes)

a. Let's start by discussing the "when, why, where and who" of your travel in the local area. Thinking about when you travel for work, school, appointments, social reasons, etc. where in the area do you tend to go? **(PROBE:** Arlington? Alexandria? DC? Outer Virginia Suburbs? Maryland?**) Who do you typically travel with?**

b. What modes of transportation are available to you when you take these trips? **(WRITE ON EASEL)**

1. Which of these modes do you consider your "primary" mode of transportation? **(TALLY ON EASEL)**
2. Do you ever take other modes? When and why?
3. Has your primary mode always been your primary mode?

i. If not, what used to be your primary mode?

ii. Why and when did you switch? (**PROBE:** life changes, changes in mode availability, transportation costs/gas prices)

c. Let's dive into your experiences with your primary mode.

1. Is your experience usually positive or satisfactory? Why or why not? (**IF NECESSARY**: If respondents have difficulties answering this question because their primary mode is different weekend vs. weekday, direct towards typical weekday trip)

i. What makes it positive or satisfactory? What about this mode do you particularly like? (**PROBE:** takes you where you want to go, reliable, convenient, comfortable, safe, easy access to stops, easy to obtain information, real-time information)

ii. Where does it fall short? Is there anything about this mode you particularly dislike? Describe.

a. Have you ever experienced any problems or issues with this mode? If so, was it addressed or fixed to your satisfaction? Describe.

2. Why is it your primary mode over other options?

i. How does it compare to other options? **(REFER TO OTHER OPTIONS ON EASEL)**

ii. Why is it the best mode to take you where you want to go?

3. Would you consider yourself "loyal" to your primary mode? Why or why not?
    i. Are you rewarded for your loyalty? In what ways?
    ii. How do you recommend your primary mode to other people?
    iii. How do you plan to continue using this mode in the future?
    iv. Within reason, how would you like to be rewarded for your loyalty?

IV. ATTRIBUTES OF PUBLIC TRANSPORTATION IN ARLINGTON COUNTY (15 minutes)

a. Let's move on to another exercise. This time we'll look at modes of transportation that are available in Arlington County. I'll give each of you three sheets of paper. Each sheet will be the same, except for the mode of transportation named at the top. You'll all have the same three modes. They are **ART bus, Metrobus, and Uber/Lyft.**

(PASS OUT THE SHEETS OF PAPER.) Note which sheet of paper goes with each mode of transit. The modes should be underlined in the instructions at the top. For each sheet, please circle any words or phrases that you feel describe the mode very well. Cross-out the words or phrases that you feel don't describe the mode at all. For example, if I were looking at my sheet for "Uber/Lyft" and I think that "Uber/Lyft" is "Convenient", I'll circle "Convenient" on that sheet. If I don't think that "Uber/Lyft" is "Reliable", then I'll cross-out "Reliable" on my sheet for "Uber/Lyft". When you are deciding how to mark these words or phrases for the modes of transit, you can make your decision based on personal experience, impressions you may have or what you've seen, read, or heard about a mode of transportation. Take your time and we will discuss after everyone is finished.

1. Let's start with **[RANDOMIZE:** ART, Metrobus, Uber/Lyft**].** Who would like to tell me which words or phrases you circled as being good descriptors of [MODE]?
    i. Tell me why you chose those words.
    ii. Can you give me examples of that in your experience with [MODE]?
2. And which words did you cross out as not describing [MODE] at all?
    i. Why did you choose those words to cross out?
    ii. Can you give me any examples of when you've experienced this with [MODE]?
3. Who would like to share next? **(DISCUSS EACH PARTICIPANT'S RESPONSES FOR A SINGLE MODE BEFORE MOVING ON TO THE NEXT MODE. COVER ALL MODES.)**

II. ART BUS (15 minutes)

a. **RIDER GROUP:** How many times per week are you using ART bus? What about Metrobus? Metrorail? Uber/Lyft?

1. What could ART do to get you use it more? **(PROBE:** reward loyalty, provide information, increase coverage, increase frequency, increase reliability, build confidence, improve accessibility**)**

b. **NON-RIDER/LAPSED GROUPS:** How many times per week are you using Metrobus? Metrorail? Uber/Lyft?

    1. Is ART bus ever available to you?

        i. Do you ever consider riding it? Why or why not?

    2. What could ART bus do to make you use it/use it more? **(PROBE:** reward loyalty, provide information, increase coverage, increase frequency, increase reliability, build confidence, improve accessibility**)**

c. **ALL GROUPS:** In what ways do you think the ART bus system could be improved?
    1. In what ways could the ART bus system better meet your needs?

VI. CLOSING (5 minutes)

a. The discussion is about wrapped up; I believe everything has been covered. I'm going to step out for a minute and make sure there aren't any outstanding questions. While I'm gone, I would like you all to do one last activity as a group. Pretend you are part of a committee tasked with improving ART. What is the first thing that you would do to attract riders? **(SELECT ONE PARTICIPANT TO RECORD THE IDEAS ON THE EASEL.)**

b. Raffle winner

c. Closing comments

HANDOUT

CIRCLE the words or phrases that you feel describe ART Buses very well.

~~CROSS OUT~~ the words or phrases that you feel do not describe ART Buses at all.

Convenient	Courteous operators
Clean	Goes to the places I need to go
Available schedule fits my needs	Direct route
Dangerous	Frequent delays
Reliable	Real-time information available
Good Wi-Fi	Safe
On-time	Rude operators
Enough seats	Overcrowded
Low-cost compared to other modes	Stops close to my ending point
Environmentally friendly way to travel	Too slow
Inconvenient	Helpful operators
Dirty	Easy to use
Fast	Expensive
Comfortable	Stops close to my starting point

HANDOUT

CIRCLE the words or phrases that you feel describe Metrobus very well.

~~CROSS OUT~~ the words or phrases that you feel do not describe Metrobus at all.

Convenient	Courteous operators
Clean	Goes to the places I need to go
Available schedule fits my needs	Direct route
Dangerous	Frequent delays
Reliable	Real-time information available
Good Wi-Fi	Safe
On-time	Rude operators
Enough seats	Overcrowded
Low-cost compared to other modes	Stops close to my ending point
Environmentally friendly way to travel	Too slow
Inconvenient	Helpful operators
Dirty	Easy to use
Fast	Expensive
Comfortable	Stops close to my starting point

HANDOUT

CIRCLE the words or phrases that you feel describe Uber/Lyft very well.

~~CROSS OUT~~ the words or phrases that you feel do not describe Uber/Lyft at all.

Convenient	Courteous operators
Clean	Goes to the places I need to go
Available schedule fits my needs	Direct route
Dangerous	Frequent delays
Reliable	Real-time information available
Good Wi-Fi	Safe
On-time	Rude operators
Enough seats	Overcrowded
Low-cost compared to other modes	Stops close to my ending point
Environmentally friendly way to travel	Too slow
Inconvenient	Helpful operators
Dirty	Easy to use
Fast	Expensive
Comfortable	Stops close to my starting point

BUS DRIVER DISCUSSION GUIDE

WBA Job No. 18-504

November 2018

Bus Driver Focus Group Discussion Guide

V. INTRODUCTION (7 minutes)

a. Welcome and thank you for joining us this afternoon. Our purpose this afternoon is to discuss ART. You will be doing a couple of things: participating in a group discussion, doing some private writing, and working on an activity.

b. About this focus group session

1. Form of market research, not selling anything
2. Discussion will last about 1 hour
3. Audio recording
4. All comments will be kept anonymous and confidential
5. Have courage of convictions; don't let group sway you
    - **i.** Do work for "equal air time." Your thoughts are important, but I want to make sure everyone has equal chances to voice their opinion.
6. No right or wrong answers, only your opinion
7. Don't have to raise hands, but speak one at a time
8. Work for independent market research company
9. Turn off cell phones
10. Feel free to get up to use the restroom

c. Respondent introduction **(WRITE PROMPTS ON EASEL PRIOR TO GROUP.)**

1. First name
2. Where live in area
3. How long driving ART bus/employed by ART and what routes have you worked on

I. ART OVERVIEW (5 minutes)

a. Think about when you first started driving for ART compared to now. What has stayed the same or changed in terms of…

1. The types of travelers using ART?

i. Let's start with what has stayed the same.

ii. Now, how have things changed?

a. Give me a picture of the past riders.

b. Give me a picture of the present riders.

II. BASELINE QUESTIONS ABOUT ART'S PERFORMANCE (MAKE LIST OF STRENGTHS/AREAS FOR IMPROVEMENT ON EASEL.) (10 minutes)

a. Let's focus on ART in the present day. Tell me…

1. What are ART's strengths?

i. Who/What else? **TO CLOSE:** Anything else?

2. In what areas can ART improve?

i. Who/What else? **TO CLOSE:** Anything else?

III. ARLINGTON COUNTY TRANSPORTATION USER IMPRESSIONS (10 minutes)

a. Give me some examples of typical complaints you hear from riders.

1. **PROBE:**

i. Who/What else?

ii. Who hears something different?

b. What differences have you noticed in how satisfied riders are?

1. Tell me more about that.

c. Describe to me how loyal you think ART bus riders are.

1. How has this changed over time?

2. How can ART reward riders who are loyal to ART?

d. How confident are riders in ART as a public transportation option in the region?

X. WHAT ART SHOULD FOCUS ON (15 minutes)

a. Now we're going to complete a brief exercise. Pretend that you've been made the head of a committee tasked with improving ART. What would you have the committee focus on to retain and increase ridership? Please write down your ideas, big or small, and once everyone has had a chance to write down their thoughts we will discuss them. **(HAVE PARTICIPANTS SHARE WHAT THEY WROTE AND PROBE FOR THEIR REASONING AS NEEDED.)**

1. **PROBE:**

i. Tell me more about that.

ii. What were you thinking when you wrote that?

iii. How could that be accomplished?

iv. Please explain…

XI. CLOSING (2 minutes)

a. The discussion is wrapped up for the afternoon. Thank you again for your thoughts and insights.

b. Closing comments

ONBOARD QUESTIONNAIRE

wba RESEARCH

Mobility Lab™

Job #18-504
December 2018

ART Satisfaction Study-Onboard Intercept 2019
Questionnaire

INTRODUCTION:

READ: My name is _____. I am working on behalf of the Transit Bureau at Arlington County and we are conducting a survey in order to improve ART bus service. I have a few questions to ask you. All information will remain confidential. This survey should take about 10 minutes.

ART

ASK EVERYONE:

Q1. How often do you ride ART buses**? (READ LIST.)**

01 6 or 7 days a week
02 5 days a week
03 1 to 4 days a week
04 A few times per month, but less than once per week
05 Once per month
06 Less than once per month
99 **DO NOT READ:** Don't know/Refused

Q2. What routes do you regularly use? **(READ LIST IF NECESSARY. ACCEPT ALL THAT APPLY.)**

01 41 Columbia Pike – Ballston – Court House
02 42 Ballston – Pentagon (Pentagon City on weekends)
03 43 Crystal City – Rosslyn – Courthouse
04 45 Columbia Pike – DHS/Sequoia – Rosslyn
05 51 Ballston – Virginia Hospital Center
06 52 Ballston – Virginia Hospital Center – East Falls Church
07 53 Ballston Metro – Old Glebe – East Falls Church - Westover
08 55 East Falls Church – Lee Highway – Rosslyn
09 61 Rosslyn – Court House Metro Shuttle
10 62 Court House Metro – Lorcom Lane – Ballston Metro
11 72 Rock Spring – Ballston – Shirlington
12 74 Arlington Village – Arlington View – Pentagon City
13 75 Shirlington – Wakefield H.S. – Carlin Springs Road – Ballston – Virginia Square
14 77 Shirlington – Lyon Park – Court House
15 84 Douglas Park – Nauck – Pentagon City
16 87 Pentagon Metro – Army Navy Drive – Shirlington (Pentagon City on weekends)
99 **DO NOT READ:** Don't Know/Refused

Q3. For what types of trips do you ride the bus? **(READ ENTIRE LIST. ACCEPT ALL THAT APPLY.)**

	Q3
Going to work	01
Going to school	02
Running errands	03
Medical appointments	04
Shopping	05
Going to church	06
Going out for dining/entertainment	07
Some other reason **(specify):** _____	95
DO NOT READ: Refused	98
DO NOT READ: Don't know	99

Q4. What is the purpose of **this** trip? **(READ LIST IF NECESSARY. ACCEPT ALL THAT APPLY.)**

	Q4
Going to work	01
Going to school	02
Running errands	03
Medical appointments	04
Shopping	05
Going to church	06
Going out for dining/entertainment	07
Some other reason **(specify):** _____	95
DO NOT READ: Refused	98
DO NOT READ: Don't know	99

Q5. Thinking about all of the reasons you choose to ride ART, please tell me your top five reasons for riding. **(DO <u>NOT</u> READ LIST. ACCEPT UP TO FIVE RESPONSES.)**

	Q5
I don't have a driver's license -- It's my only means of transportation	01
It eliminates the need for parking	02
It's cheaper than ride-hailing (e.g. Uber, Lyft…)	03
It's more frequent than other buses	04
Avoid traffic congestion	05
It's convenient	06
It's easy to use	07
It's reliable	08
It's affordable	09
It's safe	10
I can use my commute time productively (it's a better use of my time)	11
It's good for the environment (reduces pollution)	12
It allows someone else at my household to use the car	13
It takes me where I want to go	14
Total commute time is reasonable	15
There are diverse riders on ART	16
Employer helps pay the fare	17
DO NOT READ: None of the above	96
DO NOT READ: Refused	98
DO NOT READ: Don't know	99

Q6. How satisfied are you OVERALL with your experience with ART? Please use a scale of 1 to 5, where "1" means you are "Not at all satisfied" and "5" means that you are "Very satisfied."

Not at all satisfied				Very satisfied	**DO NOT READ:** Don't know/Refused
01	02	03	04	05	99

Q7. How likely are you to recommend ART for travel around Arlington? Please use a scale of 0 to 10, where 0 means you are "Not at all likely" and 10 means you are "Very likely."

Not at all likely										Very likely	**DO NOT READ:** Don't know/Refused
00	01	02	03	04	05	06	07	08	09	10	99

Q8. How likely is it that you will use ART in the future?

01 Very unlikely
02 Unlikely
03 Neutral
04 Likely
05 Very likely
99 **DO NOT READ:** Don't know/Refused

Q9. Based on your experience, how would you rate ART on each of these attributes? Please tell me if you strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree. **(RANDOMIZE, ALTERNATING BETWEEN NEGATIVE STATEMENTS (C,D) AND POSITIVE STATEMENTS (A,B,E).)**

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	**DO NOT READ: Don't know/Refused**
a. Paying on ART is convenient	01	02	03	04	05	99
b. ART buses have timely arrivals	01	02	03	04	05	99
c. ART buses are overcrowded	01	02	03	04	05	99
d. ART buses break down	01	02	03	04	05	99
e. ART buses don't skip stops	01	02	03	04	05	99

Q10. I'm going to read a list of some things that might encourage someone to ride the ART bus more often. Please tell me which of the following, if any, apply to you. I can accept your top five choices. **(READ ENTIRE LIST. ACCEPT UP TO FIVE RESPONSES. RANDOMIZE 01-15.)**

	Q10
More areas serviced	01
More frequent bus service	02
Better on-time performance	03
Safer on-board environment	04
If there were a bus stop near my house	05
Easier transfers	06
More available route information	07
More accurate REAL-TIME route information	08
Mobile payment	09
Free Wifi	10
Better A/C and heat	11
Getting rewards/loyalty points – like airline "miles"	12
Reduced fares	13
Fare capping	14
Free rides to try out new routes	15
DO NOT READ: None, will not consider riding or riding more often.	96
DO NOT READ: Not applicable, I ride as often as I can.	97

Today's Trip

Q11. How did you pay for this bus fare today? **(DO NOT READ. ACCEPT ONE RESPONSE ONLY. IF 'SMARTRIP CARD', CLARIFY WHICH TYPE.)**

01 Cash fare
02 SmarTrip Card
03 Senior SmarTrip Card
04 Disabled SmarTrip Card
05 Student iRide SmarTrip Card
06 MetroAccess
07 Weekly Pass
95 Other
96 Did not pay (forgot, the machine was not working etc…)

Q12. How would you prefer to pay for your bus fares? **(READ ENTIRE LIST. ACCEPT ONE RESPONSE ONLY.)**

01 Cash fare
02 SmarTrip Card
03 Senior SmarTrip Card
04 Disabled SmarTrip Card
05 Student iRide SmarTrip Card
06 MetroAccess
07 Weekly Pass
08 Mobile Payment (like a Metro card on your phone)
95 Some other way **(specify):** _____

Q13. If ART had been unavailable today, how would you have made this trip? (**DO NOT READ LIST. ACCEPT ONE RESPONSE ONLY. IF MULTIPLE MODES GIVEN, PROBE FOR PRIMARY MODE.)**

01 Driven alone
02 Capital Bikeshare
03 Walk
04 Ride with a friend/family
05 Taxi
06 Ride-hailing (e.g. Uber, Lyft)
07 Carpool ride-hailing (e.g. UberPOOL, Lyftline)
08 Bicycle
09 Bike-share
10 Scooter
11 Metrobus
12 Metrorail
95 Some other way
96 I would not have made this trip

Q13A. How will you get to where you are going after leaving the bus? **(DO NOT READ LIST. ACCEPT ONE RESPONSE ONLY. IF MULTIPLE MODES GIVEN, PROBE FOR PRIMARY MODE.)**

01 Walk
02 Bike and park
03 Drive and park
04 Get picked up by a friend/family member/colleague
05 Ride-hailing service (Uber/Lyft)
06 Bike-share
07 Scooter
08 Transfer to another bus
09 Metrorail
95 Some other way
99 **DO NOT READ:** Don't know/Refused

Travel Behavior

Q14. Which of the following best reflects your current employment status? **(READ LIST.)**

01 Employed full-time
02 Employed part-time
03 Full-time student
04 Looking for work, not currently employed
05 Not employed, not currently looking for work
99 **DO NOT READ:** Don't know/Refused

THOSE WHO WORK/ATTEND SCHOOL [Q14(01-03)]

Q15. About how many miles is it from your home to your work or school (one-way)? **(IF PRIMARILY TELEWORK, ENTER 0)**

_____ miles (one-way)

Q16. In a typical week, what type of transportation do you use each day, for the longest distance of your trip, to go TO work/school? (**READ LIST IF NECESSARY. ACCEPT ONE ANSWER ONLY. IF MULTIPLE MODES GIVEN, PROBE FOR PRIMARY MODE.)**

	Q16
a. Driving your car alone	01
b. Driving your car with passengers	02
c. Riding in a car as a passenger	03
d. Carpooling or vanpooling	04
e. WMATA Metrorail	05
f. WMATA Metrobus	06
g. Arlington Transit (ART) Buses	07
h. Fairfax Connector	08
i. DC Circulator	09
j. Virginia Railway Express (VRE)	10
k. Taking another public transportation service	11
l. Taking a taxi or limousine	12
m. Using a ride hailing service like Uber or Lyft	13
n. Riding a motorcycle	14
o. Riding a personal bicycle	15
p. Riding a bikeshare bicycle	16
q. Walking	17
r. Taking a company-provided shuttle	18
s. Riding an electric scooter or similar mobility device	19
t. **DO NOT READ:** Don't know/Refused	99

ASK EVERYONE:

Q17. In a typical week, what type of transportation do you use each day, for the longest distance of your trip, to go to locations for shopping, errands, socializing, etc.? (**READ LIST IF NECESSARY. ACCEPT ONE ANSWER ONLY. IF MULTIPLE MODES GIVE, PROBE FOR PRIMARY MODE.)**

	Q17
a. Driving your car alone	01
b. Driving your car with passengers	02
c. Riding in a car as a passenger	03
d. Carpooling or vanpooling	04
e. WMATA Metrorail	05
f. WMATA Metrobus	06
g. Arlington Transit (ART) Buses	07
h. Fairfax Connector	08
i. DC Circulator	09
j. Virginia Railway Express (VRE)	10
k. Taking another public transportation service	11
l. Taking a taxi or limousine	12
m. Using a ride hailing service like Uber or Lyft	13
n. Riding a motorcycle	14
o. Riding a personal bicycle	15
p. Riding a bikeshare bicycle	16
q. Walking	17
r. Taking a company-provided shuttle	18
s. Riding an electric scooter or similar mobility device	19
t. **DO NOT READ:** Don't know/Refused	99

Q18. Compared to one year ago, please tell me if you are using each of the following modes more, less, or about the same amount.

	More	About the same	Less	Not applicable/Do not use
a. WMATA Metrorail	03	02	01	97
b. WMATA Metrobus	03	02	01	97
c. Arlington Transit (ART) Buses	03	02	01	97
d. Ride-hailing (Uber, Lyft)	03	02	01	97
e. Driving Alone	03	02	01	97
f. Bike-sharing	03	02	01	97
g. Biking/Walking	03	02	01	97

Socio-Economic Demographics

Q19. In what year were you born?

_____
99 Refused

Q20. **DO NOT ASK, RECORD GENDER:**

01 Male
02 Female

Q21. Are you of Hispanic or Latino decent?

01 Yes
02 No
99 **DO NOT READ:** Don't know/Refused

Q22. With which racial or ethnic group do you identify?

01 African American or Black
02 American Indian or Alaska native
03 Asian
04 Native Hawaiian or other Pacific islander
05 White
06 Mixed race
95 Other
99 **DO NOT READ:** Don't know/Refused

Q23. Including yourself, how many people live in your household?

a. # Adults 18+ _____
b. # Children under 18 _____

Q24. Which category best describes your household's total annual income? **(SHOW LIST. HAVE RESPONDENT IDENTIFY WHICH CATEGORY.)**

01 Less than $15,000
02 $15,000 to $24,999
03 $25,000 to $34,999
04 $35,000 to $49,999
05 $50,000 to $74,999
06 $75,000 to $99,999
07 $100,000 to $124,999
08 $125,000 and higher
99 **DO NOT READ:** Don't know/Refused

Q25. How often do you have a personal vehicle available to you?

01 Never
02 Rarely
03 Occasionally
04 Most of the time
05 All the time

Q26. What's your ZIP code?

— — — — —

ONLINE QUESTIONNAIRE

wba RESEARCH

Mobility Lab™

Job #18-504
January 2019

ART Satisfaction Study-Online Survey 2019
Questionnaire

INTRODUCTION:

Welcome and thank you for your participation! The purpose of the Arlington Transit (ART) Satisfaction survey is to learn about your opinions, attitudes, and experiences with ART buses. Arlington Transit is primarily interested in knowing what you think of ART buses and how you think they could be improved.

Here are some tips for navigating through this survey:

- Please use the "Continue" button in the lower right corner of the screen to go forward.
- Should you need to go back to a previous question, use the "Back" button in the lower left corner of the screen.

Now, please click "Continue" to get started!

ASK EVERYONE:

S1A. In which county or jurisdiction do you live?

01 Arlington County, Virginia
02 City of Alexandria, Virginia
03 City of Fairfax, Virginia
04 City of Falls Church, Virginia
05 District of Columbia
06 Fairfax County, Virginia
07 Loudoun County, Virginia
08 Montgomery County, Maryland
09 Prince George's County, Maryland
10 Prince William County, Virginia
95 Other

S1B. In which county or jurisdiction do you work or go to school?

01 Arlington County, Virginia
02 City of Alexandria, Virginia
03 City of Fairfax, Virginia
04 City of Falls Church, Virginia
05 District of Columbia
06 Fairfax County, Virginia
07 Loudoun County, Virginia
08 Montgomery County, Maryland
09 Prince George's County, Maryland
10 Prince William County, Virginia
95 Other
96 Not applicable

IF S1A(02-95) AND S1B(02-96), THANK AND TERMINATE.

S1C. In what year were you born? _____
99 Prefer not to answer

IF S1C>2000 OR S1C(99), THANK AND TERMINATE.

Q5. Which of the following best reflects your current employment status?

06 Employed full-time
07 Employed part-time
08 Full-time student
09 Looking for work, not currently employed
10 Not employed, not currently looking for work
99 Prefer not to answer

S2. In a **typical week**, how many **one-way trips** do you take for **personal trips (such as shopping, errands, dining out, or visiting friends or family)**? Please count each round trip as two one-way trips. If you are unsure, please use your best guess.

	# of Trips/Week for non-work	Don't know
a. Driving your car		**99**
b. Riding in a car as a passenger (not Uber or Lyft)		**99**
c. Carpooling or vanpooling		**99**
d. WMATA Metrorail		**99**
e. WMATA Metrobus		**99**
f. Arlington Transit (ART) Buses		**99**
g. Virginia Railway Express (VRE)		**99**
h. Taking another public transportation service (e.g. Fairfax Connector, DC Circulator etc.)		**99**
i. Taking a taxi or limousine		**99**
j. Using ride-hailing services like Uber or Lyft		**99**
k. Riding a personal bicycle		**99**
l. Riding a bike-share bicycle		**99**
m. Walking		**99**
n. Riding an electric scooter or similar mobility device		**99**
o. Using carsharing service (e.g. Car2go, Zipcar)		**99**

IF THERE'S A TIE FOR HIGHEST IN S2

S2B. You indicated taking the same number of trips on **[INSERT]** and **[INSERT]** to work/school in a typical week. Which one of these modes do you consider to be your primary means of transportation for personal trips? This is the mode you use for the longest portion of your trip.

THOSE WHO WORK OR GO TO SCHOOL [Q5(01-03)]:

S3. In a **typical week**, how many **one-way trips** do you take for **work/school**? Please count each round trip as two one-way trips. If you are unsure, please use your best guess.

	# of Trips/Week for work/school	Don't know
a. Driving your car		**99**
b. Riding in a car as a passenger (not Uber or Lyft)		**99**
c. Carpooling or vanpooling		**99**
d. WMATA Metrorail		**99**
e. WMATA Metrobus		**99**
f. Arlington Transit (ART) Buses		**99**
g. Virginia Railway Express (VRE)		**99**
h. Taking another public transportation service (e.g. Fairfax Connector, DC Circulator etc.)		**99**
i. Taking a taxi or limousine		**99**
j. Using ride-hailing services like Uber or Lyft		**99**
k. Riding a personal bicycle		**99**
l. Riding a bike-share bicycle		**99**
m. Walking		**99**
n. Riding an electric scooter or similar mobility device		**99**
o. Using carsharing service (e.g. Car2go, Zipcar)		**99**

IF THERE'S A TIE FOR HIGHEST IN S3

S3B. You indicated taking the same number of trips on **[INSERT]** and **[INSERT]** to work/school in a typical week. Which one of these modes do you consider to be your primary means of transportation for traveling to work/school? This is the mode you use for the longest portion of your trip.

Travel Behavior

ASK EVERYONE:

Q1. How far from your home is the nearest bus stop?

01 Less than 1 block
02 1 to 2 blocks
03 3 to 5 blocks (1/4 to ½ mile)
04 6 to 10 blocks (½ mile to 1 mile)
05 More than 10 blocks (more than 1 mile)
99 Don't know

Q2. How far do you typically travel from your home to shop for your household needs (e.g. groceries, clothing, or other household supplies)?

01 Less than 1 mile
02 Between 1 to 5 miles
03 Between 6 to 10 miles
04 Between 11 to 15 miles
05 More than 15 miles
99 Don't know

Q3. Assuming each of the following modes could get you to your destination, which mode would you pick to use if you were running late for an appointment? **(RANDOMIZE.)**

01 Driving your car
02 Riding in a car as a passenger
03 Carpooling or vanpooling
04 WMATA Metrorail
05 WMATA Metrobus
06 Arlington Transit (ART) Buses
07 Taking another public transportation service (e.g. Fairfax Connector, DC Circulator etc.)
08 Taking a taxi or limousine
09 Using ride-hailing services like Uber or Lyft
10 Riding a personal bicycle
11 Riding a bike-share bicycle
12 Walking
13 Riding an electric scooter or similar mobility device
14 Using carsharing service (e.g. Car2go, Zipcar)

Q4. In a **typical week**, how many **one-way trips** do you make to the following destinations? Please count each round trip as two one-way trips. If you are unsure, please use your best guess. **(RANDOMIZE.)**

	# of Trips/Week	Don't know
a. Work/School **[ONLY ASK THOSE WHO WORK/GO TO SCHOOL]**		99
b. Grocery shopping		99
c. Leisure (e.g. going shopping, to the movies, concerts, the park, fitness center, out to dinner, etc.)		99
d. Personal/family needs (e.g. doctor's appointments, etc.)		99

THOSE WHO WORK/ATTEND SCHOOL [Q5(01-03)]:

Q6. About how many miles is it from your home to your work or school (one-way)?

01 2 miles or less
02 3 to 5 miles
03 6 to 10 miles
04 11 to 20 miles
05 More than 20 miles
99 Don't know

Q7. How far is the nearest bus stop from your work/school?

01 Less than 1 block
02 1 to 2 blocks
03 3 to 5 blocks (1/4 to ½ mile)
04 6 to 10 blocks (½ mile to 1 mile)
05 More than 10 blocks (more than 1 mile)
99 Don't know

THOSE WHO WORK [Q5(01,02)]:

Q8. How often do you telecommute or work from home?

96 Never
01 A few times a month or less
02 1 day per week
03 2 days per week
04 3-4 days per week
05 Work exclusively from home

THOSE WHO WORK OR ATTEND SCHOOL AND WHO HAVE A PRIMARY MODE [[(Q5(01,02) AND NOT Q8(05)) OR Q5(03)] AND [S3A-S3O NOT(00,99)]]:
MODE WITH THE GREATEST TOTAL NUMBER OF TRIPS IN S3 = PRIMARY MODE

You indicated that **[INSERT PRIMARY MODE]** is the mode of transportation you use most often to get to work and/or school. Please consider this mode when answering the next few questions.

Q9. How would you rate your overall satisfaction with your everyday commute? **(FLIP SCALE SO THAT HALF OF THE RESPONDENTS HAVE 'VERY SATISFIED' FIRST.)**

01 Very dissatisfied
02 Dissatisfied
03 Neutral
04 Satisfied
05 Very satisfied

Q10. How likely are you to recommend **[INSERT PRIMARY MODE]** as a way to get to work or school to people living and working in similar areas? **(RANDOMIZE SCALE IN SAME ORDER AS Q9.)**

01 Very unlikely
02 Unlikely
03 Neutral
04 Likely
05 Very likely

Q11. How likely are you to continue **[IF PRIMARY MODE IS SD,E,F,G,:** using**] [INSERT PRIMARY MODE]** to get to work or school in the future? **(RANDOMIZE SCALE IN SAME ORDER AS Q9.)**

01 Very unlikely
02 Unlikely
03 Neutral
04 Likely
05 Very likely

THOSE WHO EXCLUSIVELY TELEWORK [Q8(05)]:

Q9a. How would you rate your overall satisfaction with **Telecommuting**? **(FLIP SCALE SO THAT HALF OF THE RESPONDENTS HAVE 'VERY SATISFIED' FIRST.)**

01 Very dissatisfied
02 Dissatisfied
03 Neutral
04 Satisfied
05 Very satisfied

Q10a. How likely are you to recommend **Telecommuting** to people living and working in similar areas? **(RANDOMIZE SCALE IN SAME ORDER AS Q9A.)**

01 Very unlikely
02 Unlikely
03 Neutral
04 Likely
05 Very likely

Q11a. How likely are you to continue **Telecommuting** in the future? **(RANDOMIZE SCALE IN SAME ORDER AS Q9A.)**

01 Very unlikely
02 Unlikely
03 Neutral
04 Likely
05 Very likely

THOSE WHO WORK/ATTEND SCHOOL [Q5(01-03)]:

Q12. Compared to one year ago, are you using the following modes more, about the same amount, or less for trips to **work/school**? If you have not used a mode for **work/school** in the past couple of years, please select "Not Applicable." **(RANDOMIZE.)**

	Take More	About the Same	Take Less	Not Applicable
a. WMATA Metrorail	01	02	03	97
b. WMATA Metrobus	01	02	03	97
c. Arlington Transit (ART) Buses	01	02	03	97
d. Ride-hailing (Uber, Lyft)	01	02	03	97
e. Driving Alone	01	02	03	97
f. Bike-sharing/Biking	01	02	03	97
g. Walking for the full length of the trip	01	02	03	97
h. Taking another mode of public transportation	01	02	03	97

ASK EVERYONE:

Q13. Compared to one year ago, are you using the following modes more, about the same amount, or less for **personal trips (such as shopping, errands, dining out, or visiting friends or family)**? If you have not used a mode for **personal trips** in the past couple of years, please select "Not Applicable." **(RANDOMIZE.)**

	Take More	About the Same	Take Less	Not Applicable
a. WMATA Metrorail	01	02	03	97
b. WMATA Metrobus	01	02	03	97
c. Arlington Transit (ART) Buses	01	02	03	97
d. Ride-hailing (Uber, Lyft)	01	02	03	97
e. Driving Alone	01	02	03	97
f. Bike-sharing/Biking	01	02	03	97
g. Walking for the full length of the trip	01	02	03	97
h. Taking another mode of public transportation	01	02	03	97

THOSE WITH A DECREASE IN ART BUS USE [Q12C(03) OR Q13C(03)]:

Q14. Why are you using ART bus less than you were one year ago for **[IF ONLY Q14C(03)**: work/school; **IF ONLY Q15C(03)**: non-work/school; **IF Q14C(03) AND Q15C(03):** work/school and non-work/school] trips? *(Select all that apply.)* **(RANDOMIZE.)**

01 Change in residential location
02 Change in job/school status or location
03 I experienced too many problems on ART
04 The routes and schedules were not suitable anymore
05 I started telecommuting/I telecommute more now than I did one year ago
06 I switched to another mode of transportation. (Specify which mode: _____)
07 My personal preference changed
08 I was using ART temporarily when Metrorail was not available
95 Other **(specify)** _____

THOSE WITH AN INCREASE IN RIDE-HAILING USE [Q12E(01) OR Q13E(01)]:

Q15. Please select the modes you are using <u>less</u> due to your increased use of ride-hailing services (like Uber or Lyft). *(Select all that apply.)* **(RANDOMIZE.)**

01 WMATA Metrorail
02 WMATA Metrobus
03 Arlington Transit (ART) Buses
04 Driving Alone
05 Getting dropped off/rides from friends or family
06 Bike-sharing
07 Biking
08 Taking scooters
09 Walking
95 Other
96 None of the above

ASK EVERYONE:

Q16. Where do you look for real-time travel information? *(Select all that apply*.) **(RANDOMIZE.)**

01 Google Maps/Apple Maps (mobile or online)
02 Multimodal mobile apps other than Google Maps (such as Transit, CityMapper, etc.)
03 Directly from a transit agency (apps or websites)
04 Physical signage (message boards in buildings, BusFinder, Metro or bus stop signage)
05 Calling a number available at bus stops or Metro stations
06 Texting a number available at bus stops or Metro stations
07 Social media (such as Twitter)
95 Other

ART

Arlington Transit (ART) is a bus system that operates within Arlington County, Virginia, supplementing Metrobus with cross-county routes as well as neighborhood connections to Metrorail and Virginia Railway Express.

The next few questions will be about this bus service.

Q17. Have you ever used ART buses?

01 I have used ART buses
02 I have heard of ART buses, but have not used them
03 I have not heard of ART buses

THOSE WHO HAVE HEARD OF OR USED ART [Q17(01,02)]:

Q18. Please indicate your level of agreement or disagreement with the following statement: **I have a positive image of ART buses**

01 Strongly Disagree
02 Disagree
03 Neutral
04 Agree
05 Strongly Agree

Q19. Please indicate your level of agreement or disagreement with the following statements:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. I am familiar with ART's schedule	01	02	03	04	05
b. I am familiar with ART's routes	01	02	03	04	05
c. I am familiar with ART's payment options	01	02	03	04	05

THOSE WHO HAVE USED ART [Q17(01)]:

Q20. How would you rate your overall experience with ART?

05 Very satisfied
04 Satisfied
03 Neutral
02 Dissatisfied
01 Very dissatisfied

Q21. Have you ever experienced any of the following problems while riding ART? *(Select all that apply.)* **(RANDOMIZE.)**

01 Problems with paying the fare
02 Bus did not show up
03 Bus was overcrowded
04 Bus broke down
05 Bus was late for more than 10 minutes
95 Other
96 None of the above

THOSE WHO HAVE HEARD OF ART, BUT HAVE NOT USED IT [Q17(02)]:

Q22. What is the **main** reason you have not used this service? **(ACCEPT ONE RESPONSE ONLY. RANDOMIZE.)**

01 I don't know where it goes (the routes)
02 I don't know where the closest stop to my house is
03 I don't know when it operates (the schedule)
04 I don't know how to find information for it
05 I am satisfied with my current transportation options
06 I don't like buses
07 It will not get me to my destination on time
08 It does not go where my destinations are
09 The ART bus is not for people like me
10 It doesn't suit my lifestyle
11 I have heard bad things about it
95 Other **(specify)** _____

ASK EVERYONE:

Q23. Please select the five options that are **most likely** to make you ride the ART bus more often. *(Select up to five responses.)* **(RANDOMIZE. ALLOW UP TO FIVE RESPONSES.)**

	Q23
More areas serviced	01
More frequent bus service	02
Better on-time performance	03
More available route information	04
More accurate real-time schedule information	05
Better bus signage at the bus stop	06
More shelters/benches at bus stops	07
Mobile payment	08
Free Wifi	09
Getting reward/loyalty points – like airline "miles"	10
Reduced fares	11
Fare capping	12
Free transfers between modes	13
Free rides to try out new routes	14
If there were no Metrobuses	15
If it becomes more expensive to own a car	16
If fewer kids rode it	17
If it were better integrated with Uber and Lyft	18
Newer and more modern buses	19
Other **(specify)** _____	95
Nothing—will not consider riding or riding more often	96
Does not apply—I ride as often as I can	97

Q24. How could ART best provide you with information on its routes and schedules? **(RANDOMIZE. ALLOW ONLY ONE RESPONSE.)**

01 Social media (Facebook, Twitter, Instagram, etc.)
02 Through apps such as Nextdoor
03 Through the Arlington Transit website
04 Through text messages
05 Distributing brochures and pamphlets
06 Through the mail
07 Through email (e.g. listserv)
08 Providing information at local events
95 Other **(specify)** _____

Attitudes

Q25. Please indicate your level of agreement or disagreement with the following statements: **(RANDOMIZE THE SECTIONS AND RANDOMIZE WITHIN EACH SECTION, KEEPING THE SECTIONS TOGETHER AS A WHOLE.)**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Tech-savviness					
a. I am often the first to get new technology or devices	01	02	03	04	05
b. Learning how to use new technologies is often frustrating	01	02	03	04	05
c. Having Wi-Fi and/or 3G/4G connectivity everywhere I go is essential to me	01	02	03	04	05
e. Getting around is easier than ever with my smartphone	01	02	03	04	05
Time-sensitive					
g. For me, saving time is more important than saving money	01	02	03	04	05
h. I would change my form of travel if it would save me some time	01	02	03	04	05
i. I always take the fastest route even if I have a cheaper alternative	01	02	03	04	05
i. I am usually in a hurry when I make a trip	01	02	03	04	05
Pro-reliability					
j. On-time arrival is important when I commute	01	02	03	04	05
k. On-time arrival is not important when I travel for leisure	01	02	03	04	05
l. I like to know in advance how long the trip will take	01	02	03	04	05
m. Predictable travel time is more important than a faster trip	01	02	03	04	05
Pro-environmental					
n. We should raise the price of gasoline to reduce the negative impacts on the environment	01	02	03	04	05
Variety seeking					
o. I like trying things that are new and different	01	02	03	04	05
p. I like to experience novelty and change in my daily routine	01	02	03	04	05
q. I am continually seeking new ideas and experiences	01	02	03	04	05

r. I prefer a routine way of life to an unpredictable one full of change	01	02	03	04	05
Car habit					
s. Using the car is something that makes me feel weird if I do not do it	01	02	03	04	05
t. Using the car is something I do automatically	01	02	03	04	05
u. Using the car is something that is part of my routine	01	02	03	04	05
v. Using the car is something that is typical for me	01	02	03	04	05
Pro-transit					
w. Public transportation is unreliable	01	02	03	04	05
x. Buses and trains are pleasant to travel in	01	02	03	04	05
y. Costs more to use public transit than to drive	01	02	03	04	05
z. I am willing to walk a few minutes to get to and from public transit	01	02	03	04	05
aa. I don't mind transferring between buses and trains	01	02	03	04	05

Socioeconomic Demographics

D1. Which of the following milestones have you experienced in the past year? *(Select all that apply.)* **(MULTIPLE RESPONSES ACCEPTED. RANDOMIZE.)**

01 Childbirth
02 Change of residential location
03 Change of job/school location
04 Marriage/divorce
05 Change in household size
96 None of the above

D2. Are you?

03 Male
04 Female
95 Other
99 Prefer not to answer

D3. Are you of Hispanic or Latino descent?

01 Yes
02 No
99 Prefer not to answer

D4. With which racial or ethnic group do you identify?

01 African American or Black
02 American Indian or Alaska native
03 Asian
04 Native Hawaiian or other Pacific islander
05 White
06 Mixed race
95 Other
99 Prefer not to answer

D5. Including yourself, how many people live in your household?

c. # Adults 18+ _____
d. # Children under 18 _____

D6. Which category best describes your household's total annual income?

09 Less than $15,000
10 $15,000 to $24,999
11 $25,000 to $34,999
12 $35,000 to $49,999
13 $50,000 to $74,999
14 $75,000 to $99,999
15 $100,000 to $124,999
16 $125,000 and higher
99 Prefer not to answer

D7. How often do you have a personal vehicle available to you?

06 Never
07 Rarely
08 Occasionally
09 Most of the time
10 All the time

D8. What is your home ZIP code? ___ ___ ___ ___ ___
99 Prefer not to answer

END OF SURVEY – THANK YOU!