



**An Onboard Survey of
GoRaleigh Customers**

2019

A study conducted by:



In Conjunction with:



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Executive Summary

Introduction

In early October 2019, CJI Research conducted an onboard survey of GoRaleigh customers. The GoRaleigh survey includes 1,123 responses and has a margin of error of +/-2.9% at the 95% level of confidence.

The 2019 survey is intended to provide a baseline for comparison to later annual surveys.

PERCEPTION OF MAJOR SERVICE IMPROVEMENTS

- The survey obtained customer ratings of overall GoRaleigh service and nineteen specific elements of service. A seven-point scale was used, on which a score of 1 means very poor, and 7 means excellent. The percent rating GoRaleigh service overall as 7 is 27%. Another 21% rated service as 6 on the same scale, meaning that the total rating service as excellent or very good is 48%.
- Top rated elements with scores of 6 or 7 include:
 - Usefulness of printed information (60%)
Fare medium options (59%)
 - Bus operator courtesy/helpfulness and usefulness of telephone operators (56% each)
- Three operational aspects of service with more than 50% of customers giving the two top scores of 6 and 7 deserve note:
 - Weekday service frequency (53%)
 - Weekday service hours (52%)
 - Ease of transfer within the GoRaleigh system (51%)
- There was a slight decline in the overall top score of service (6, and 7 on the 7 point scale. This change appears to be directly related to the increased extent to which customers are also using ridesharing.
- When asked to rank areas for improvement:
 - "Buses running on time" is by far the most frequently cited aspect of service to improve. It was cited by 44% of customers as first, second, or third most important to improve among the nineteen specific aspects of service examined. The 44% represents a major decrease in concern with this since 2018 when 64% put ontime performance (OTP) as one of the top three. This change is probably related not to a change in OTP which remained constant, but to increased service on the high frequency network.
 - Second most important in this sense is "Total average trip time" (23%)
 - Third – Weekday service frequency and Saturday service frequency (22% each).
 - Fourth most important to improve was Sunday bus hours (21%)
- Another way to consider service improvement priorities is to examine the correlation of each aspect of service with the overall service rating. That technique identified six priorities that are used by virtually all customers and would have a significant impact on the overall GoRaleigh service rating: Total average time to make a trip, buses running on time, and service to all destination desired (coverage). In addition, it identified three services that are used by most but not all customers that would also have a significant impact: Saturday and Sunday service frequency, and Saturday service hours.
- GoRaleigh has important economic impact. Trip purpose is primarily oriented to employment (64%) and School/College (13%), and many other customers also use GoRaleigh for shopping (7%).

- Demographics
 - GoRaleigh provides a key support for employment and education. Of all GoRaleigh customers, 53% are employed full time and another 22% part time. Another 21% are students, for a total of 96% of customers being employed or students.
 - 61% of GoRaleigh customers identify themselves as African-American, 22% identify themselves as Caucasian/White, 6% Hispanic, 6% Asian, 2% Native American, and 4% “Other.
 - Like most bus systems in the United States, the ridership of GoRaleigh is young, with 48% younger than thirty-five.
 - Similar to the ridership of many bus systems, many GoRaleigh customer households report that they have extremely low household incomes. In this survey, 35% report income of less than \$10,000 and only 13% report household incomes of \$50,000 or more.
 - Customers are quite transit dependent, with 78% reporting that they have either no vehicle or no licensed driver (or neither) in the household.
- Travel characteristics
 - 39% of GoRaleigh customers say they are using GoRaleigh more often than in the previous year and 17% say they began riding only in 2019. Only 9% say they are riding less often now.
 - When using other systems in the Triangle Region, GoRaleigh customers are more likely (21%) to use GoTriangle than the other systems.
- Ridesharing
 - 52% have used Uber or Lyft at least once in the thirty days prior to the survey.
 - Of the 52% using Uber or Lyft in the previous thirty days, 60% (31% of all GoRaleigh customers) used Uber or Lyft to replace a GoRaleigh trip.
 - Of that 52% who have used Uber or Lyft, 46% (or 24% of all customers) have used them as part of a GoRaleigh trip.
- Fare media
 - The largest percentage of GoRaleigh customers (37%) boarded with a day-pass purchased either on the bus (23%) or ahead of time (14%).
 - Twenty-three percent (23%) paid their fare in cash.
 - Thus, combining the cash fare and the day-pass purchase on the bus, a total of 60% make a fare transaction on the bus
 - 39% make a prior pass purchase or use a free pass such as GoPass or a university ID, thus avoiding the delay of conducting a transaction while boarding.
- Mobile Communication
 - A transit app has been downloaded by 59% of GoRaleigh customers.
 - This represents a dramatic increase in adoption of this app in only one year, from 37% in 2018 to 59% in 2019.

Introduction and Methodology

Background

As part of a regional customer satisfaction measurement program, CJI Research, LLC conducted a survey of customers onboard GoRaleigh buses from October 23 - 26, 2019. Similar surveys were conducted during the previous three weeks with customers of GoTriangle, GoCary, and GoDurham.

The questionnaire used in the survey was initially developed by Hugh Clark of CJI Research, LLC refined a coordinating committee from GoTriangle and CAMPO led by Elizabeth Raskopf of GoTriangle, the agency coordinating the multi-system project. The committee included representatives of all four transit agencies and CAMPO. GoRaleigh staff provided additional input.

Methods: How the Survey Was Conducted

SAMPLE

A random sample of runs was drawn from a list of all GoRaleigh runs. This initial sample was examined to determine whether the randomization process had omitted any significant portion of the GoRaleigh system's overall route structure. The sample was adjusted slightly to take any such omissions into account.

Survey data collection occurred onboard the buses. On the bus, survey staff approached all customers rather than a sample. The only exception was that customers who appeared younger than sixteen were not approached, both for reasons of propriety and because children are typically unable to provide meaningful answers to several of the questions.

Because all customers were asked to participate rather than a sample of customers on the bus, there was little or no opportunity for a survey staff member to introduce bias in selection of persons to survey. In effect, a bus operating within a specified window of time became a sample cluster point in a sample of such clusters throughout the total system.

The GoRaleigh survey includes 1,123 respondents and has a margin of error of +/-2.9% at the 95% level of confidence. When the distribution of responses is other than 50:50 on a specific question, the sample error for a given sample size decreases somewhat. If a sub-sample is used, sample error increases somewhat. However, with an overall sample of more than 1,123 respondents, this would affect the findings only in a few circumstances in which only small sub-segments of the ridership were being examined separately.

Although this sample is sufficient to support an overview of the ridership as a whole, it is not large enough to be broken down at the route level. The design of the total regional study of the four area systems (GoRaleigh, GoTriangle, GoRaleigh, and GoCary) calls for conduct of a large sample in one subsystem every three years. GoRaleigh's was completed in 2018, large samples of GoTriangle and GoCary riders were conducted in 2019 and the large sample of GoDurham will be conducted in 2020.)

DATA COLLECTION

Temporary workers from the Greer Group Inc., Quality Staffing, and Robert Half, Inc. of Durham and Raleigh, NC were trained to administer the surveys under the supervision of CJI Research, LLC staff. Surveyors wore smocks identifying them in large print as "Transit Survey" workers. This uniform helps customers visually

understand the purpose of why an interviewer would be approaching them, thus increasing cooperation rate.

In most cases, the survey personnel met the bus operators at the beginning of their shifts and rode the buses throughout the driver's assignment. In a few cases, in order to assure broader coverage of certain routes, surveyors rode partial runs and then transferred to another route or run.

The questionnaire was self-administered. Survey personnel handed surveys and a pen to customers and asked them to complete the survey.

At the end of each sampled trip on a given run, the survey personnel placed the completed surveys in an envelope marked with the route, the run, the time, and the day and reported to the survey supervisors who completed a log form detailing the assignment. A total of 308 trips were sampled and recorded in this manner.

PARTICIPATION RATES

Completion Rates on GoRaleigh Onboard Survey, 2019

A total of 3,309 adults (16 years old or older) were riding during the surveyed trips and had a chance to participate			
Of this total...	719	said they had already completed the survey	25%
thus,	2,590	had not yet completed the survey	78%
and	1,268	of those who had not yet completed the survey refused outright	49%
and	71	customers spoke a language other than English or Spanish	3%
thus	1,251	accepted the survey form with the apparent intention of finishing it	48%
Thus, these 1,251 customers represent, the total "effective distribution," i.e., the raw sample			
Of these...	128	accepted the survey form but did not complete it on the bus	14%
and	1,044	completed the survey on the GoRaleigh bus	86%
	79	completed the survey and returned it to an operator on another bus	1%
Finally:	1,123	returned useable survey questionnaires. They comprise the base sample	90%
Of all adults riding on a surveyed vehicle, including those who had already completed the survey, this represents:			34%
Of all adults riding on a surveyed vehicle who had not yet completed the survey, this represents:			43%
Of all the customers on sampled trips who accepted a questionnaire, this represents:			90%

Of the 1,123 GoRaleigh respondents:

- 1,112, or 99% of the sample completed the customer satisfaction questions
- Only 11 respondents, or 1%, failed to complete 20 or more responses
- 855, or 76% completed all questions in the survey.
- Another 146, or 13% completed all but the final question, household income, which always has a high refusal rate
- 1,001 therefore completed all questions or all but the income question
- This means that 89% of the sample answered 98% of the questions

In the analysis, those who did not respond to a question are eliminated from the computation of percentages and means unless there was a way to infer the response. For example, if a rider gave as a trip purpose *getting to or from school*, it was apparent that this was a student, and that employment could be coded as "student," even if the respondent had not responded to the employment question.

QUESTIONNAIRE

The questionnaire was self-administered. It is reproduced in Appendix A.

The questionnaires were serial numbered so that records could be kept for the route and day of the week on which the questionnaire was completed. This is a more accurate method than asking customers which route they are riding when completing the survey.

The survey is printed in English on one side and in Spanish on the other. In the survey of GoRaleigh customers, 77 customers, or 7% of the effective final unweighted sample identified themselves as Hispanic, but only 25, or 2% of the completed questionnaires were completed in Spanish. Stated in another way, only one-third (33%) of the customers identifying themselves as Hispanic completed the survey in Spanish.

ANALYSIS

Analysis consists primarily of crosstabulations and frequency distributions. Tables were prepared in SPSS, version 26 and charts in Excel 2016. The GoRaleigh survey will be archived by CJI Research, LLC so that it will be available for further analysis as needed.

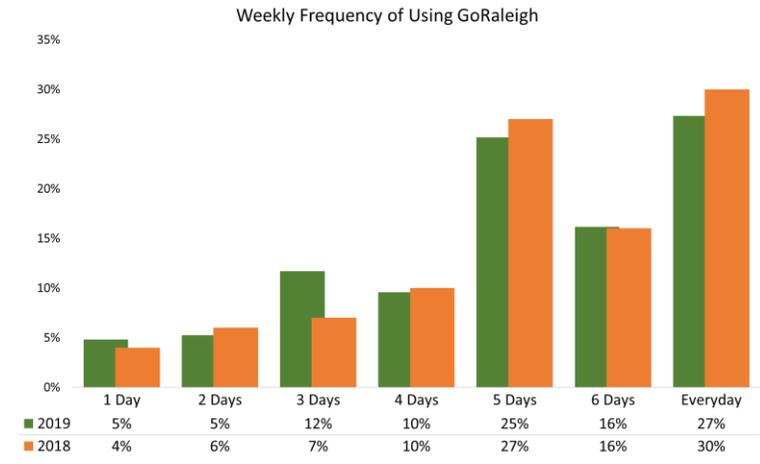
With a few exceptions, all percentages are rounded to the nearest whole number. In a few cases, when this could have caused important categories to round to zero, or when comparisons between charts would appear inconstant if tenths were not included, percentages are carried to tenths. Rounding causes some percentage columns to total 99% or 101%. These are not errors and should be ignored.

Rider Profile

Frequency of Using GoRaleigh

Riders were asked on how many days in a typical week they use GoRaleigh. For purposes of further analysis, the customers are grouped into three sets, or "segments," depending upon how frequently they use

Figure 1 Frequency of Using GoRaleigh



GoRaleigh. We refer to them as:

- One- to three-day: Those who use GoRaleigh one, two, or three-days a week (22%)
- Four-to-five-day: Those who use GoRaleigh four- or five-days a week (35%)
- Six-to-seven-day: Those who use GoRaleigh six-or-seven-days a week (43%)

Why segment the sample in this manner? The frequency of using public transit is the most basic differentiating characteristic within the ridership. Understanding the ridership in groups rather than as a monolith is generally useful to those

involved with planning or marketing.

Other breakdowns may also be of interest, and by request such breakdowns can be provided quickly because the survey data is maintained live to meet such requests. Such breakdowns might include level of dependency on transit, trip purpose, or demographics such as age or income. All are easily available on request.

Figure 2 Compressed Measure of Frequency of Using GoRaleigh

Weekly Frequency of Using GoRaleigh

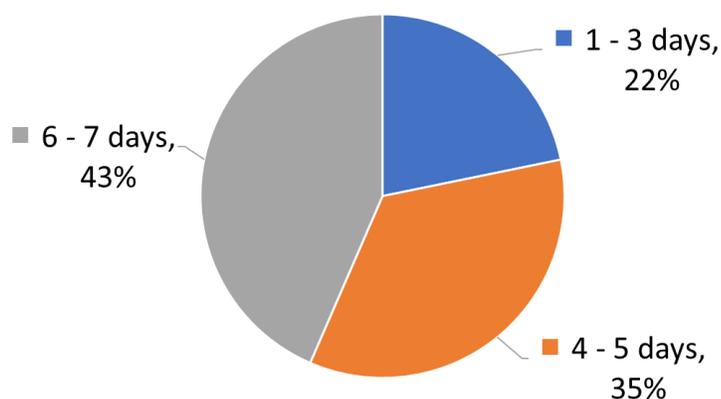
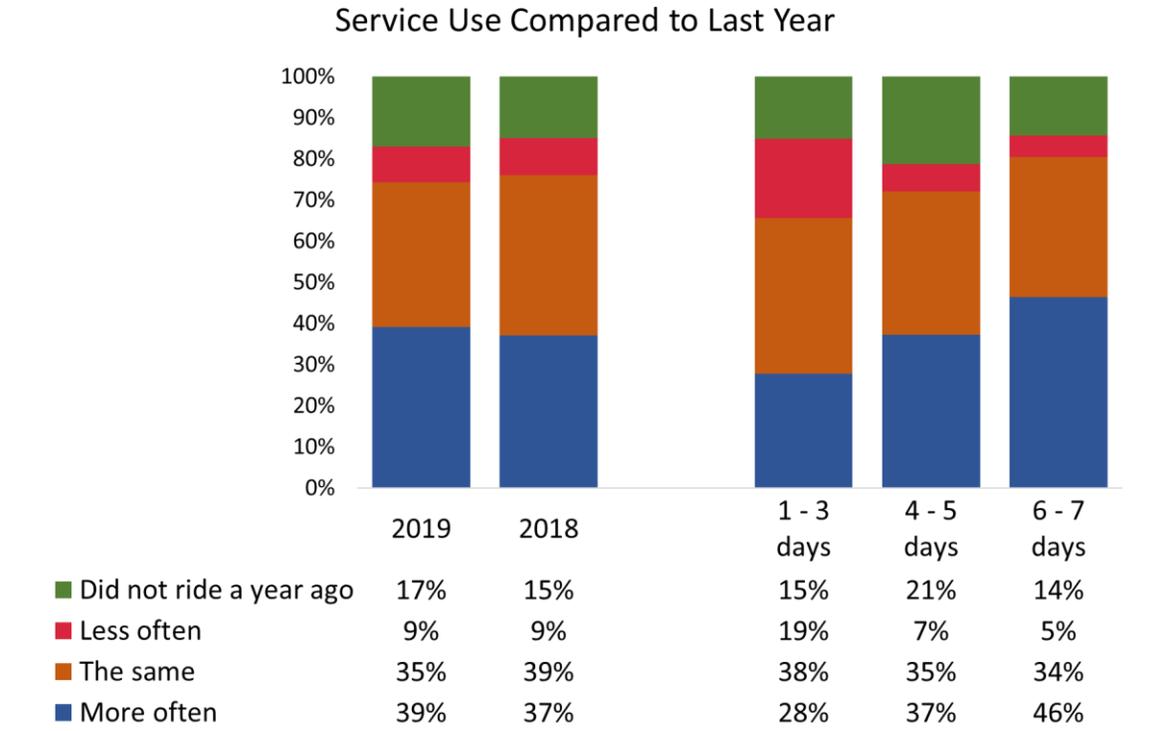


Figure 3 Compared to a Year Ago, Do You Ride More Often, Less Often or the Same?



Riding Frequency Compared to a Year Ago

Overwhelmingly, respondents say that they are riding either with same frequency (35%) or more often (39%) than a year ago, and 17% say they are new riders. Only 9% say they are riding less often. The four-to-five-day riders are the most likely to be new riders (21%), while the most frequent riders are more likely (46%) than the other segments to say they are riding more often.

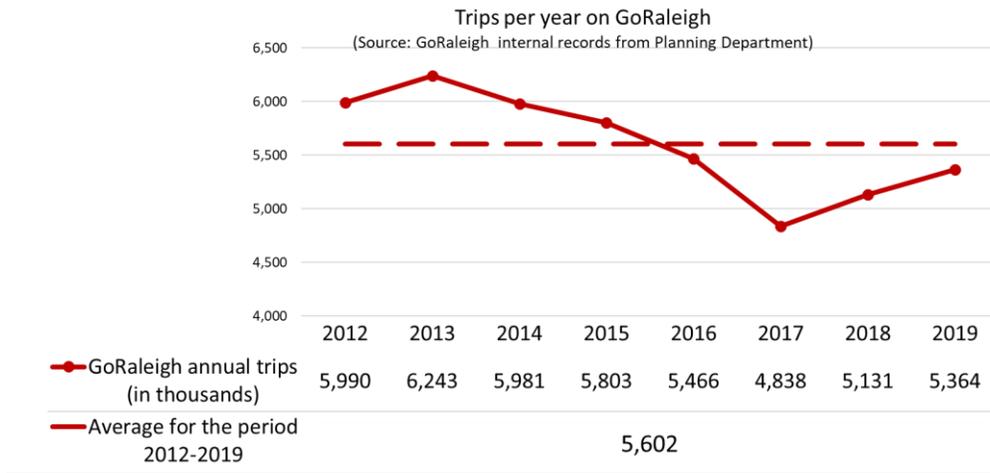
Change in this regard since 2018 has been minimal and is within the margin of sample error.

The percentages each year saying they had not been GoTriangle riders in the previous year might lead one to conclude that there was a massive increase in ridership. That is not the case as figures on the following page will show. Thus, we must conclude that there is a great deal of turnover within the ridership. In turn this suggests that one key, and perhaps the best opportunity for increasing ridership, is to increase rider retention. Unfortunately, we do not know from these results what percent ceased riding GoTriangle entirely between 2018 and 2019, nor is there any simple means of accessing former riders in a systematic manner¹.

What can be done with the 2019 survey data, however, is to create tables that isolate those who say they are new riders, those who say they are riding more, and all others, comparing their demographics (age, employment, etc.) their use of ridesharing, and other factors, for example. This can be done at no cost upon request from GoRaleigh.

¹ It would not be a random or representative sample, but it could be useful to use a systematic social media survey to gain input from former GoTriangle riders. This could provide data which, though not projectable to the population, could show contrasts between former and current riders.

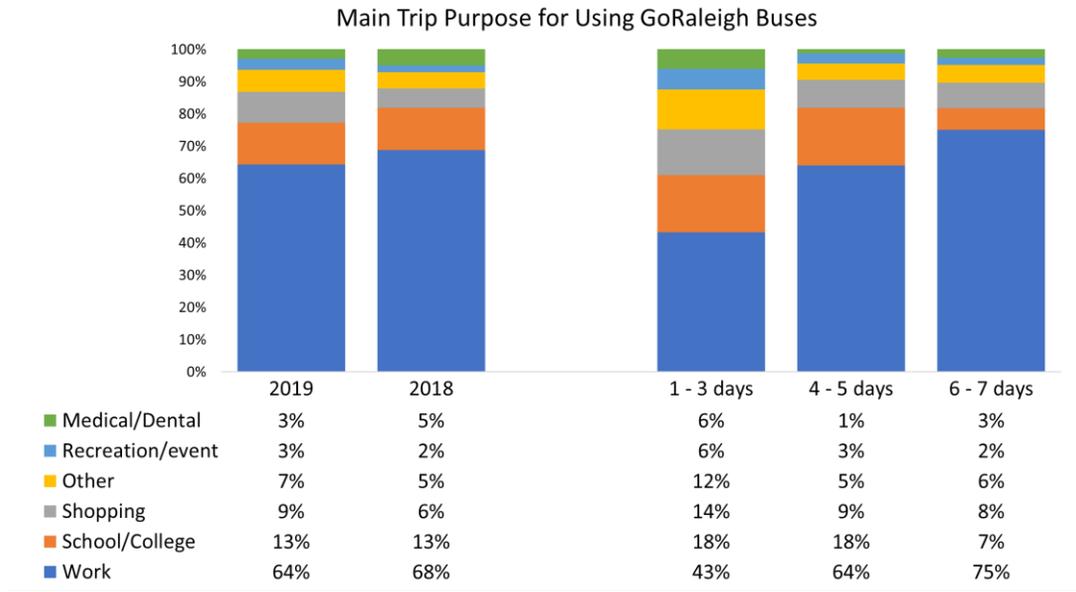
Figure 4 Ridership Statistics from GoRaleigh, 2012 - 2019



How do the survey data relate to the actual ridership data provided by GoRaleigh? With the caveat that we cannot directly infer changes in overall ridership from survey data, the survey responses among current riders are consistent with the recent ridership increase.

GoRaleigh ridership saw a long decline from 2012 to 2017 followed by a 4.5% increase from 2017 to 2018 followed by another 4.4% increase from 2018 to 2019. A net ridership increase, like that reported in Figure 4, consists of pluses and minuses. Pluses include a combination of new riders and riders using GoRaleigh more often, minus riders using it less often and those who have ceased riding entirely.

Figure 5 Trip Purpose



Trip Purpose: Use of GoRaleigh for Various Purposes, by Segment

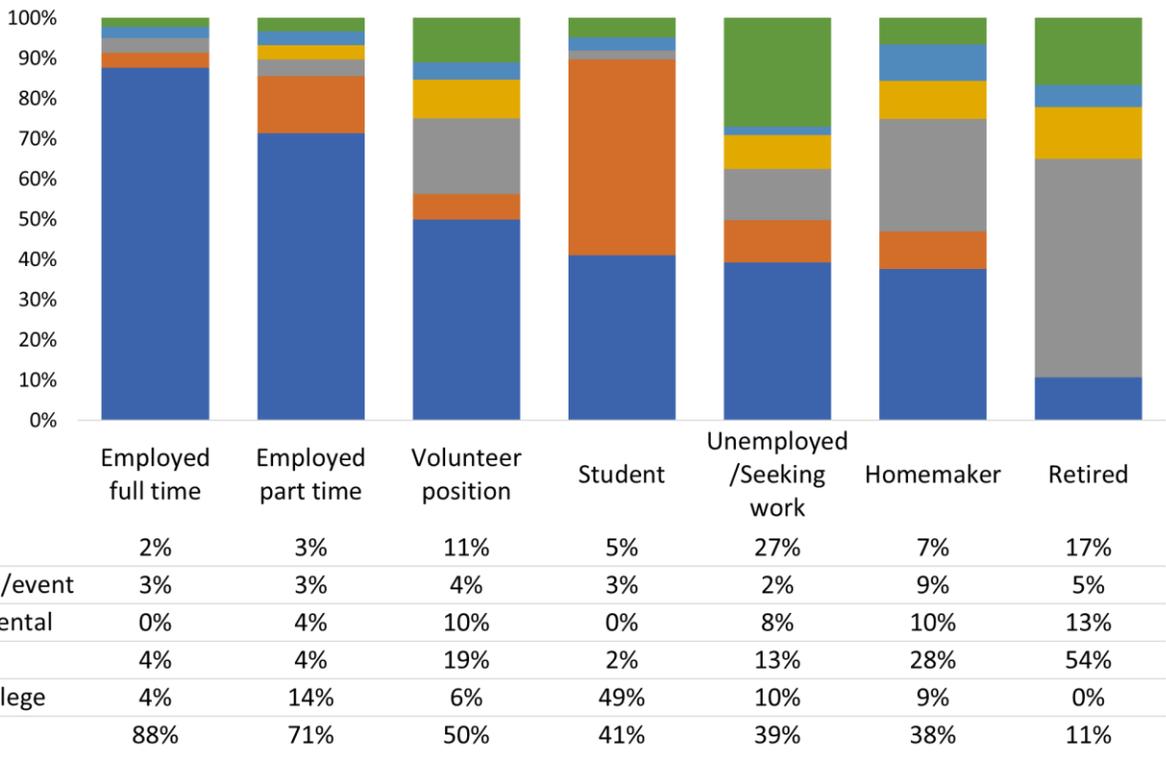
Customers were asked to name the single main purpose for which they use GoRaleigh.

- Getting to or from work is the primary trip-purpose, with 64% of customers citing that as their most frequent trip purpose.
- School and college trips make up another 13% of trips. Thus, GoRaleigh is carrying a large proportion of its customers (77%) for either work or school trips, an indication of its economic impact through the labor force.
- Another 9% of the customers indicate that they use GoRaleigh to make shopping trips, a set of trips with immediate economic impact.
- Medical and recreational trips account for 6%

Three-fourths of the six-to-seven-day riders (75%) and almost two-thirds of the four-to-five-day riders (64%) had made work-trips. The one-to-three-day a week riders are more likely than the other segments to have used GoRaleigh for each of the non-work purposes. It is interesting, however, that even among these least frequent customers, work trips are common (43%). They must either be working part-time or using different modes on different days.

Figure 6 Employment and Trip Purpose

Trip Purpose by Employment, GoRaleigh



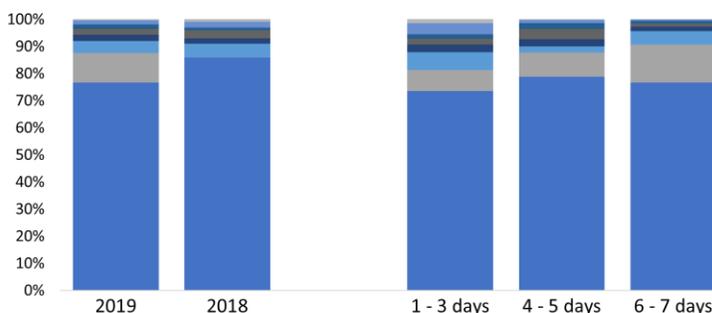
Employment and Trip Purpose

That employment would be closely related to trip purpose is self-evident. However, there are some variations. As expected, 88% of those employed full time use GoRaleigh to go to or from work, while 71% of part-time workers are headed for work. However, another 4% of full time and 14% of part time employed riders are headed for school. This is not too surprising since we know that many students also work.

Less expected is that 39% of those who say they are unemployed say they are going to or coming from, work. Probably they are in temporary jobs of some sort while looking for work and consider themselves to be unemployed. Similarly, 11% of retirees say they are making a work trip, probably working part time but still considering themselves to be primarily retired. Many homemakers too (38%) say they are going to work. Possibly they are working part time but consider homemaker to be their main occupation. Students, as expected, are going either to work (41%) or to school (49%).

Figure 7 Mode to the GoRaleigh Bus Stop

How Passengers Got to Bus Stop for Current Ride



	2019	2018	1 - 3 days	4 - 5 days	6 - 7 days
Drove	0%	1%	1%	0%	0%
Uber or Lyft	2%	2%	4%	1%	0%
Another mode	2%	1%	2%	2%	1%
Was dropped off by family or friend	2%	3%	2%	4%	1%
Used own bike	2%	2%	3%	3%	2%
Bus other than GoRaleigh	4%	5%	7%	2%	5%
Other GoRaleigh bus	11%	0%	8%	9%	14%
Walked	77%	85%	73%	79%	77%

Mode to the Bus Stop

In 2019, most GoRaleigh customers, 77%, usually walk to their GoRaleigh bus stop. The four to five day riders are slightly more likely than the two other segments to walk to their stop. However, the relationship is not strong, and more than 70% of all three frequency segments

walk to their stops.

The criteria in the question were changed significantly from 2018 to 2019, a change that makes the comparison of 2018 to 2019 somewhat problematic. In 2018 the question asked about access to the “... first GoRaleigh bus you boarded for this trip.” The 2019 survey asked: “How did you get to the stop where you got on this GoRaleigh bus?” This difference accounts for the change in the percent saying they used another bus to get to the stop.

With respect to the mode to stop, GoRaleigh is roughly in line with national norms. Nationally, 81% of bus system riders walk to their stops, while 76% of GoRaleigh riders do so. While 9% of bus riders nationally, use public transit to access the stop, the same is true for 15% of GoRaleigh riders.

Figure 8 Access Mode – GoRaleigh and Nationally (Go Raleigh Survey and APTA, op cit)

Mode to the bus stop, GoRaleigh and National

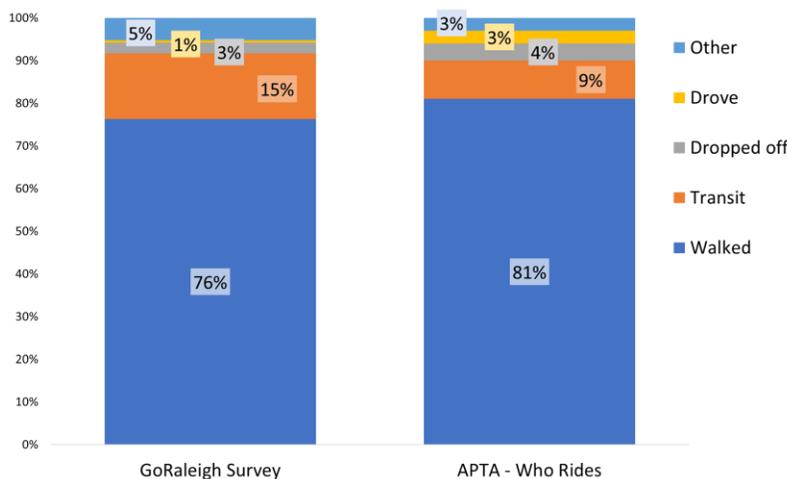
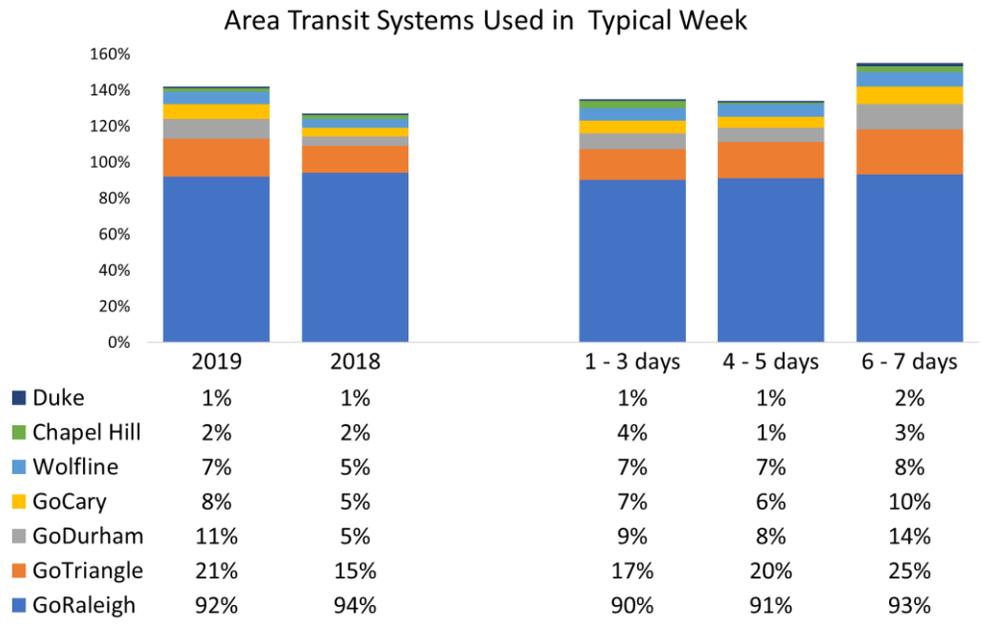


Figure 9 Bus Systems Used in a Typical Week



Use of Area Bus Systems

Respondents were asked which of the transit systems in the region they use in a typical week. Since they can use multiple systems, the sums of the percentages exceed 100% in Figure 9.

As expected, most riders (92%) said they use GoRaleigh in a typical week. Conversely, this suggests that about 8% do not use GoRaleigh in a typical week and were encountered in the survey in one of their multi-system trips, or that they use GoRaleigh only occasionally, and not in a “typical week.”

For all segments in 2019, GoRaleigh customers use GoTriangle more than any other local system (21% overall). As one would expect, given that as we shall see in a later chart, they are less likely to have a personal vehicle available, the six-to-seven-day riders are more likely than others to use multiple systems.

Figure 10 GoRaleigh Fares at the Time of the Survey

GoRaleigh Fare Schedule		
	Full Fare	Discounted Fare
Single Ride Fare	\$ 1.25	\$ 0.60
GoRaleigh Day Pass	\$ 2.50	\$ 1.25
GoRaleigh 7-Day Pass	\$ 12.00	\$ 6.00
GoRaleigh 31-Day Pass	\$ 40.00	\$ 20.00
Senior or Youth with ID	Free	NA
GoPass provided by some employers	Free	NA

GoRaleigh Fares at the Time of the Survey

The table in Figure 10, based on fares posted on the GoRaleigh website², displays the several types of pass media and special fares available at the time of the survey in 2019. In addition to the fares listed, the GoPass is accepted from customers affiliated with certain institutions.

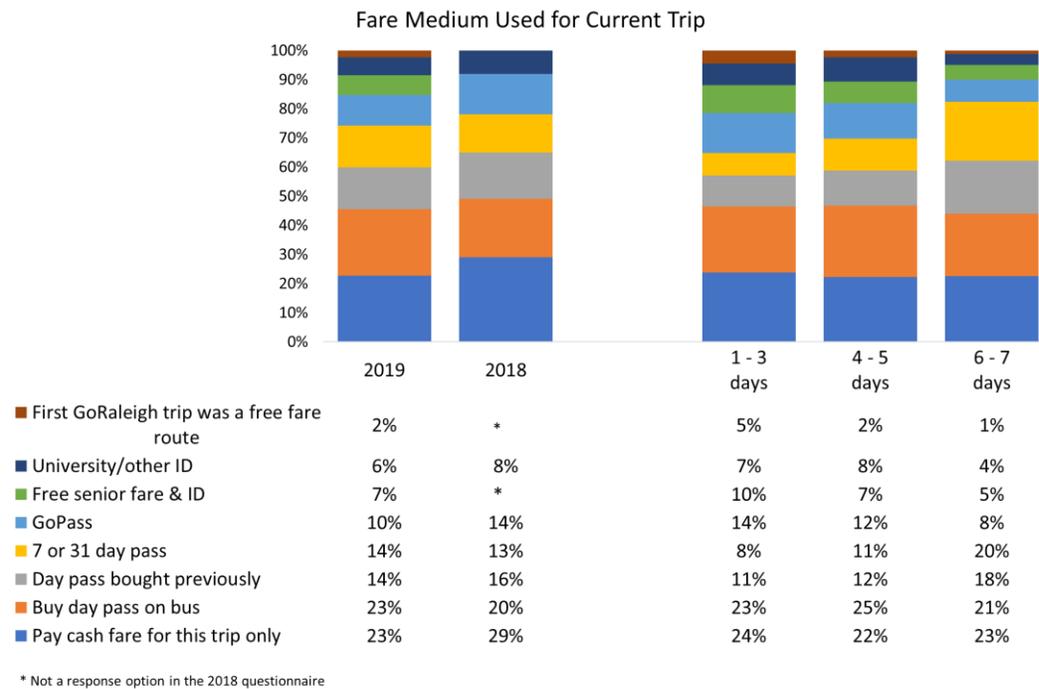
Type of Fare Used

The largest percentage of GoRaleigh customers (37%) boarded with a day-pass purchased either on the bus (23%) or ahead of time (14%). This was unchanged since 2018. Twenty-three percent (23%) paid their fare in cash. Thus, combining the cash fare and the day-pass purchase on the bus, a total of 46% make a fare transaction on the bus.

The other customers used free or pre-paid passes of some other type. This includes 10% using the GoPass which is free to them, and 8% a university ID, also free to the user. Another 14% used a seven or thirty-one day pass.

Response options “Free-fare route” and “Free senior fare with ID” were added to the survey in 2019. The former was used by 2%, the latter by 7%.

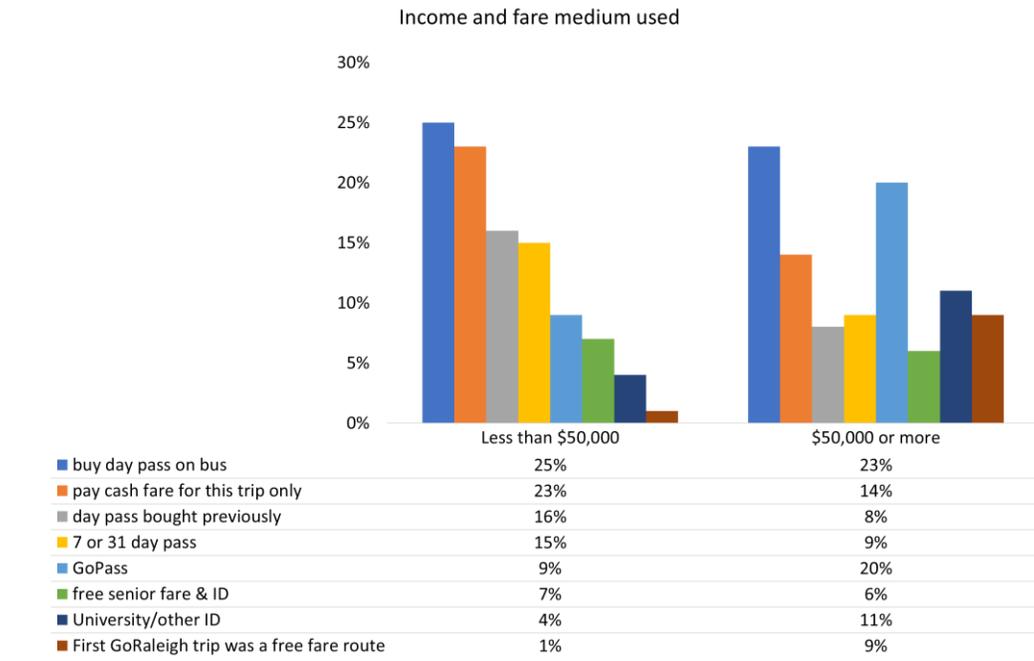
Figure 11 Fare Medium Used



The use of cash or on-bus purchase of a day pass were very similar among the ridership market segments. However, the use of pre-paid passes (day pass previously purchased and 7-31 day pass) was greater among the most frequent riders (38%) than among four to five day riders (23%) or one to three day riders (19%).

² Source of fare information: <https://www.raleighnc.gov/services/content/PWkTransit/Articles/BusRates.html>

Figure 12 Income and Type of Fare

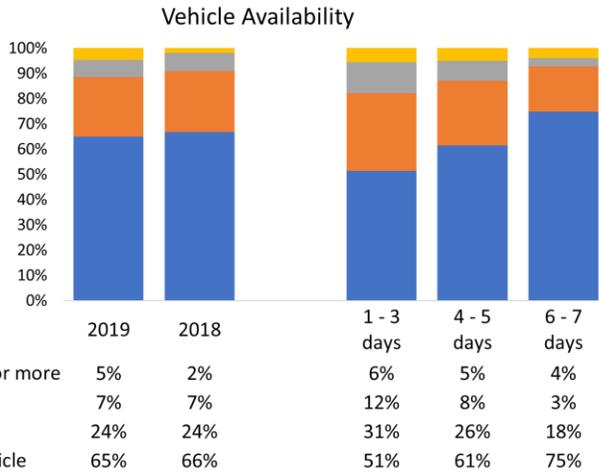


Income and Fare Medium Used

Differing levels of household income are associated with differences in fare-media choices. Those with incomes under \$50,000 are almost twice as likely to pay cash fares (23%) as those with higher incomes (14%). They are also more likely to purchase either a day pass in advance or a 7 or 31 day pass (total of 31%) compared to higher income customers (17%). They are also much *less* likely than the higher income customers to use a GoPass (9%) or a university ID (4%), compared to 20% and 11%, respectively. Very similar percentages of customers purchased a day pass on the bus, 25% for lower income and 23% for higher income levels.

Overall, 21% of those with incomes under \$50,000 paid no fare when boarding the bus on which they were surveyed, while 46% of those with higher levels of income traveled free. On the other hand, 56% of customer with incomes under \$50,000 took advantage of a discounted fare by using a pass of some type rather than paying cash.

Figure 13 Availability of a Vehicle

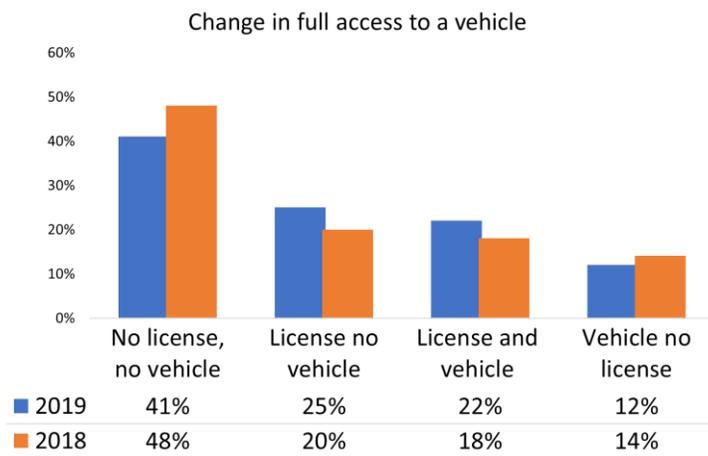


Availability of a Vehicle

Availability of a vehicle was basically unchanged between 2018 and 2019. The notable difference was in the households with three or more vehicles. Given that there was relatively little change in household income among riders from 2018 to 2019 (see Figure 20, page 310), this is a bit surprising.

Customers who use GoRaleigh one to three days a week are more likely than others to have a vehicle available.

Figure 14 Aspects of Mode Choice: Having a License and Having a Vehicle



Aspects of Mode Choice

Having a choice of local transportation mode depends not only on the availability of a vehicle but also on having a valid driver's license. Figure 13 indicated that there had been very little change in availability of a vehicle.

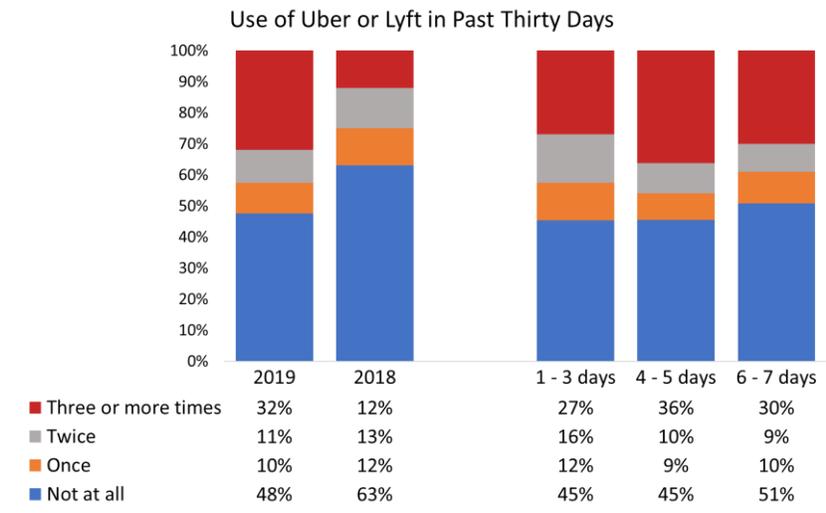
The percent of riders with a driver's license (not shown in the chart) increased by only 2% from 44% in 2018 to 46% in 2019. However, Figure 14 indicates that the percent of riders with both a vehicle and a driver's license increased.

Figure 14 indicates that a large minority of customers (totaling 41%) have neither a vehicle nor a license. This is down from 48% in 2018. At the same time, having both a license and a vehicle rose from 18% to 22%. In at least one other system study (Westchester County, NY), this kind of change was associated with declining ridership, but that is not the case for GoRaleigh.

Use of Uber or Lyft in past thirty days

Mode choice is no longer simply about owning or leasing a personal vehicle. Since 2015, car sharing has become mainstream. Of all GoRaleigh customers, 48% say they have not used car sharing services in the past thirty days. Conversely, this means that 52% have used one of the car-sharing services, including 10% who have used them only once, 11% who have used them only once, 11% twice, and 32% who have used them three or more times³.

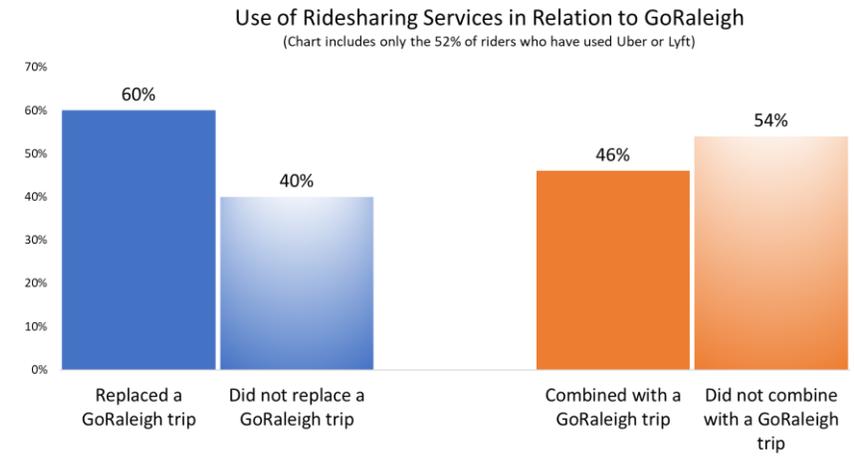
Figure 15 Use of Uber or Lyft in Past Thirty Days



Ridesharing has grown rapidly since 2018 with users rising from 37% to 52%, and those using ridesharing three or more times rising from 12% to 32% of riders.

The market segments do not manifest extreme differences in use of ridesharing, but the four to five day riders are more likely than the other segments to have used it three or more times in the previous thirty days.

Figure 16 Use of Uber and/or Lyft to Supplement or Replace a Trip on GoRaleigh



Use of Uber and/or Lyft to Supplement or Replace a Trip on GoRaleigh

How have ridesharing trips interacted with GoRaleigh? Figure 16 provides basic answers.

Of the 52% of GoRaleigh customers who have used Uber or Lyft locally in the past thirty days, 60% say they replaced a GoRaleigh trip with the ridesharing trip. This amounts

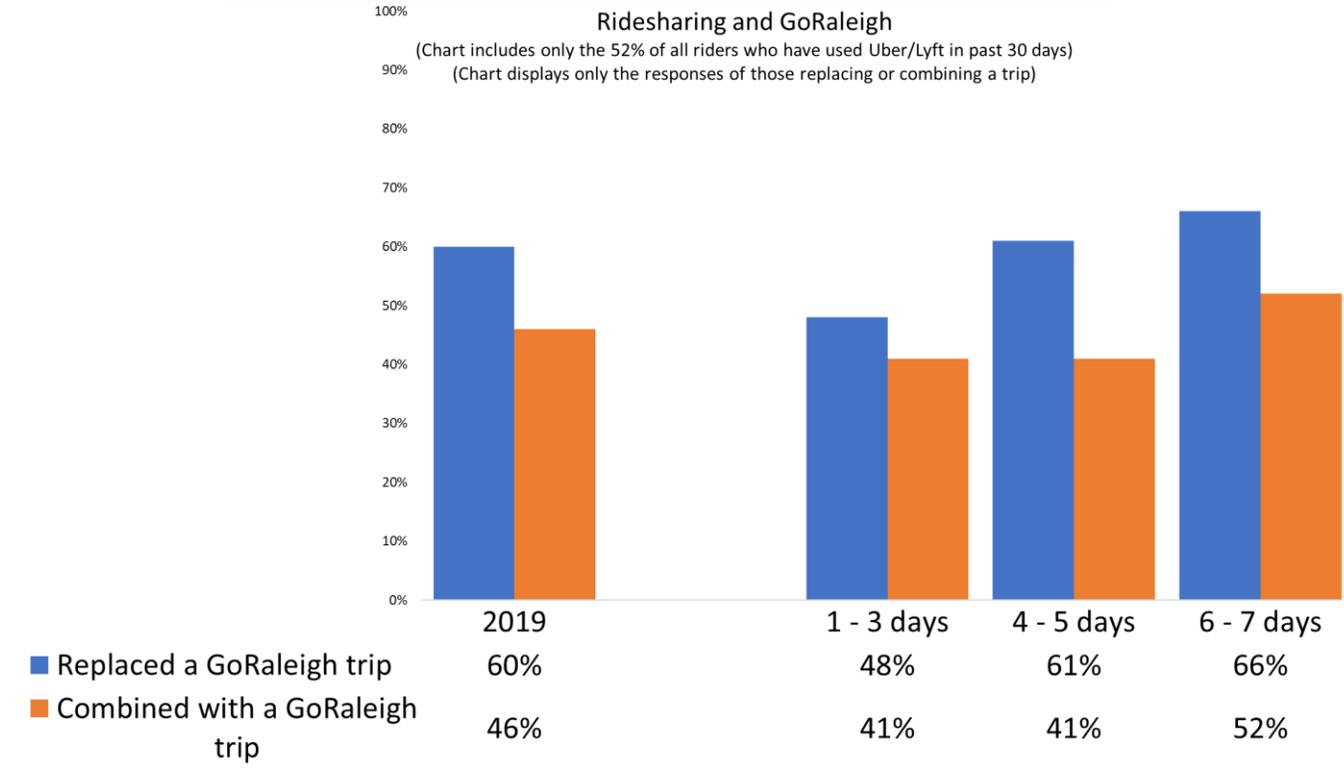
to 31% of all GoRaleigh customers up from 27% in 2018 (i.e. 60% of 52% = 31%).

Of the 52% of customers who have used Uber or Lyft, almost half, 46%, say they combined a ridesharing trip with a GoRaleigh trip. This amounts to 24% of the ridership, up from 18% in 2018 (i.e., 46% of 52% = 24%) of the ridership) who have used a ride-sharing service, say that they have used it as part of a bus trip.

³ In future surveys, it may be useful to determine if customers using shared rides are doing so with dependents because that may be no more costly than multiple cash bus fares.

We do not know for what purpose some Uber/Lyft riders have combined a rideshare trip with a GoRaleigh trip. However, in Figure 7 (Mode to the GoRaleigh Bus Stop) only 2% said they used Uber/Lyft to get to the bus stop for their current trip. Other customers must have used ridesharing for other purposes. This issue will be worth exploring in some manner in the coming years, if only on an informal basis. One question that would be helpful to understand is whether use of ridesharing is filling gaps in coverage, span, or in weekend service.

Figure 17 Replacing or Supplementing a GoRaleigh Trip, by Segment



Replacing or Supplementing a Trip, by Segment

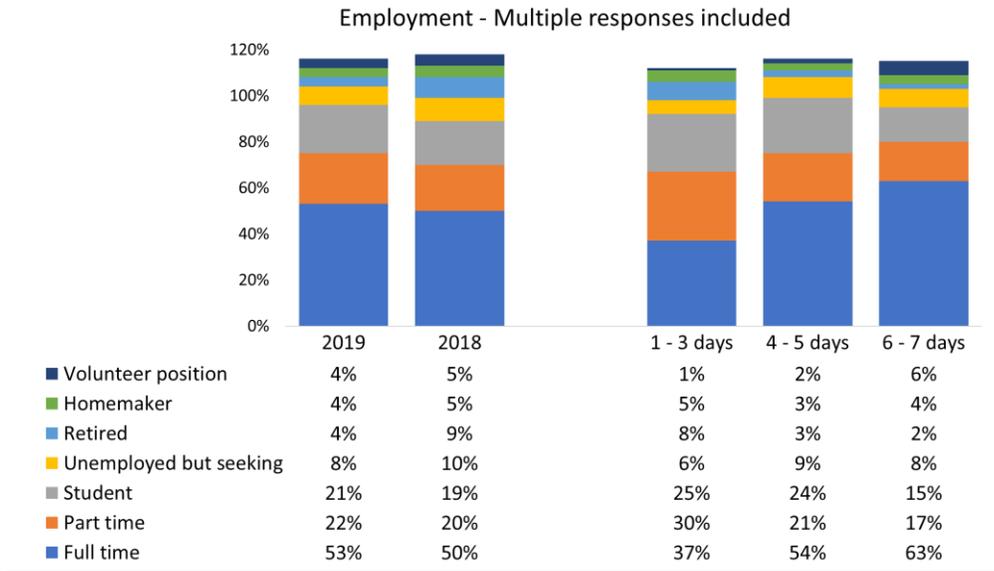
As we saw in previous charts, 52% of GoRaleigh customers say they have used Uber or Lyft in the past thirty days. Of this 52% set of riders, 60% (i.e. 31% of all riders) say they replaced a GoRaleigh trip with a trip on a rideshare service, while 46% (i.e., 24% of all riders) have combined a rideshare trip with a GoRaleigh trip.

The practice of using rideshare to replace a GoRaleigh trip varies significantly among the rider segments. The more one rides GoTriangle, the more one also replaces a GoTriangle trip with a ridesharing trip. The four-to-five-day (61%) and the six-or-seven-day riders (66%) are more likely than the one-to-three-day riders (48%) to do so. On the other hand, for reasons not apparent in the data, the six-to-seven-day riders (52%) are also more likely than others (41%) to say they combine a rideshare with a GoRaleigh trip. This suggests that there is some type of unmet transportation need among the most frequent GoRaleigh customers.

Although there are some differences among the rider segments, the differences should not obscure the main finding, that a significant proportion of riders are supplementing and even replacing some GoRaleigh trips with ridesharing trips. It is also important to remember that the percentages cited here are percentages of riders, not of the trips they make. Riders were not asked to estimate the number or proportion of their trips replaced in this manner. This may be a useful question to include in a future survey.

Demographics

Figure 18 Employment of Customers



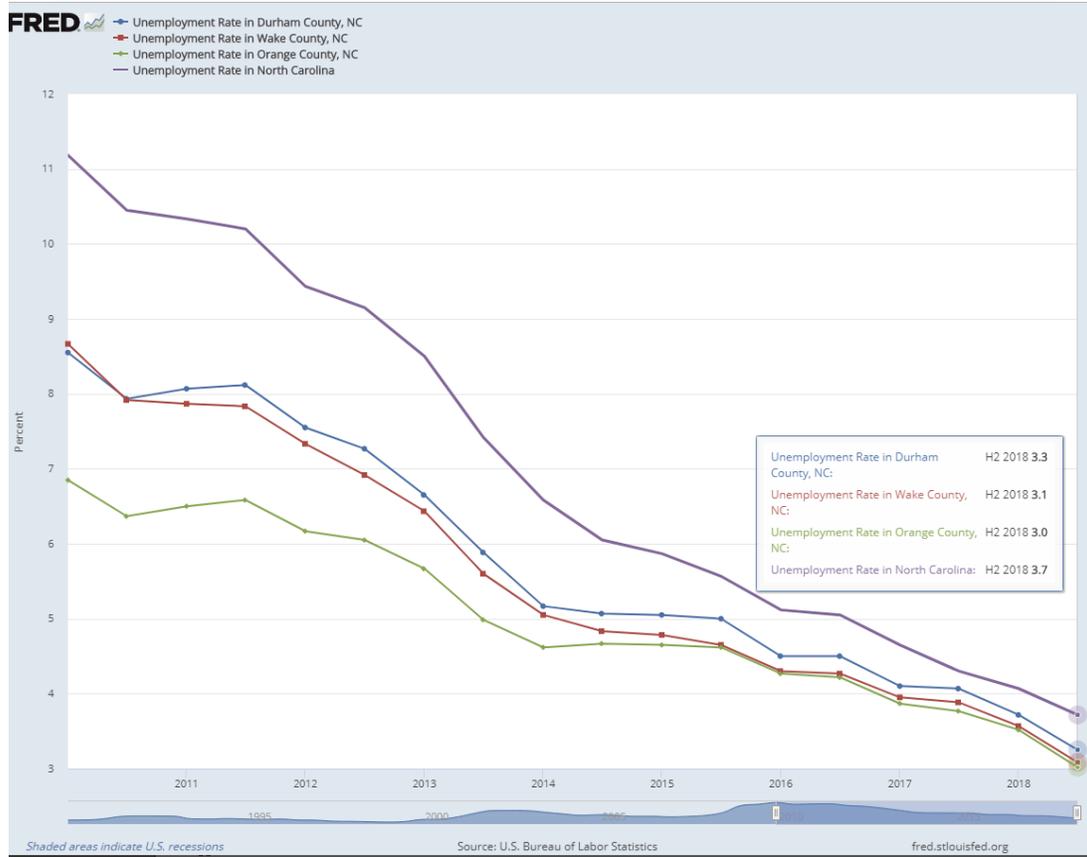
Employment of Customers

Note: In the chart above, multiple responses were allowed for those with multiple roles. Therefore, the sum of the percentages exceeds 100% by the percent who have more than one job.

Respondents were asked about their employment. In 2018, a total of 50% of GoRaleigh customers reported being employed full time. The percentages in 2019 are similar, but with a few changes at the margins. For example, full time employment increased from 50% to 53% and part time employment increased from 20% to 22%, while Unemployed, seeking work decreased from 10% to 8%. All of these changes are within sampling error of the smaller 2019 sample. However, they are both consistent with overall economic trends, a factor that suggests the differences are likely to be representative of real change.

Full time employment is somewhat more frequent among the six-to-seven-day riders (63%) than among the four-to-five-day riders (54%), and considerably more likely than the one-to-three-day riders (37%). On the other hand, the one-to-three-day riders are more likely than the other segments to be students (30%) than the four-to five riders (21%) or the six-to-seven-day riders (17%).

Figure 19 Unemployment Rates in NC, Wake, Durham, and Orange Counties



Source: U.S. Bureau of Labor Statistics, Unemployment Rate in North Carolina [NCUR], and selected NC counties, retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/NCUR>, February 15, 2019.

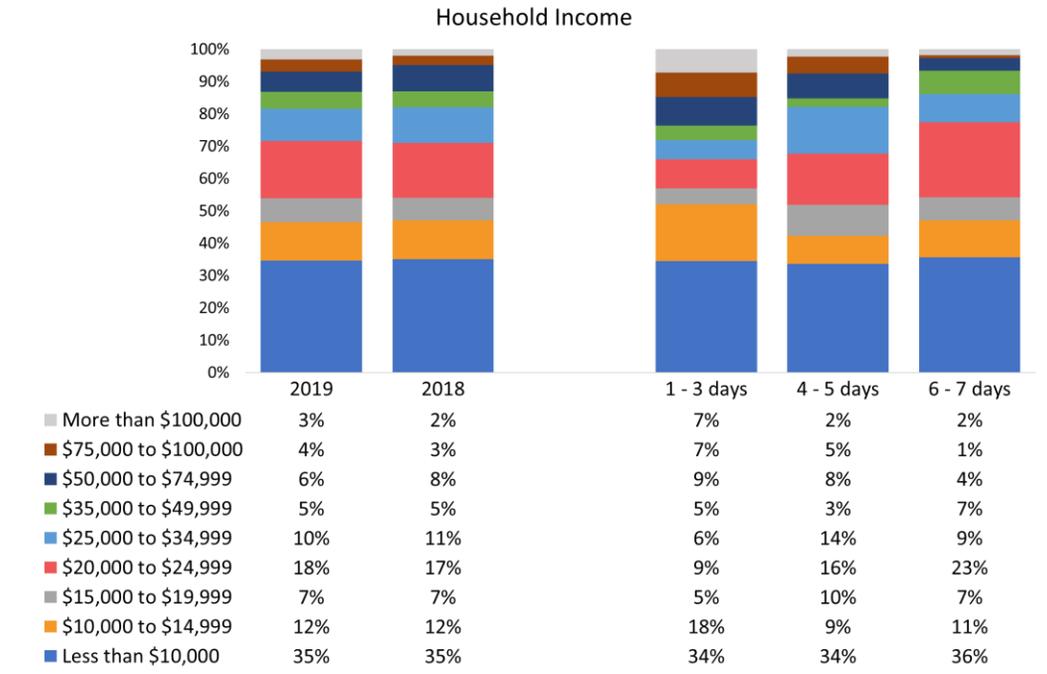
Unemployment Rates in NC, Wake, Durham, and Orange Counties

In the survey, 8% indicated that they consider themselves unemployed. We also saw in Figure 6 that 39% of these “unemployed” riders said that their trip purpose was getting to or from work. Thus, they are employed in terms used by the Department of Labor, although their employment may be only an interim tactic while seeking a new job. This would amount to about 3% of the ridership, leaving 5% unemployed and not working in the interim. How do these figures compare to the official unemployment figures in the region?

The substantial decrease in unemployment in the Triangle Region since the Great Recession is shown clearly in Figure 19. At the time of the survey, the rate was 3.7% statewide and 3.3% in Durham County. If 3% of the riders are “unemployed” but working and thus not counted in the federal figures, this would put the rate among riders at approximately 5%, somewhat higher than the total adult population, but given the relationship of income to transit use, that is not surprising.

Coupled with the fact that more than 90% of GoRaleigh riders are either employed or students (or in some cases both) the service to those between jobs and seeking employment is another illustration of the important role of GoRaleigh as a major factor in labor mobility and emphasizes its critical economic role in supporting the local labor force.

Figure 20 Income of Rider Households



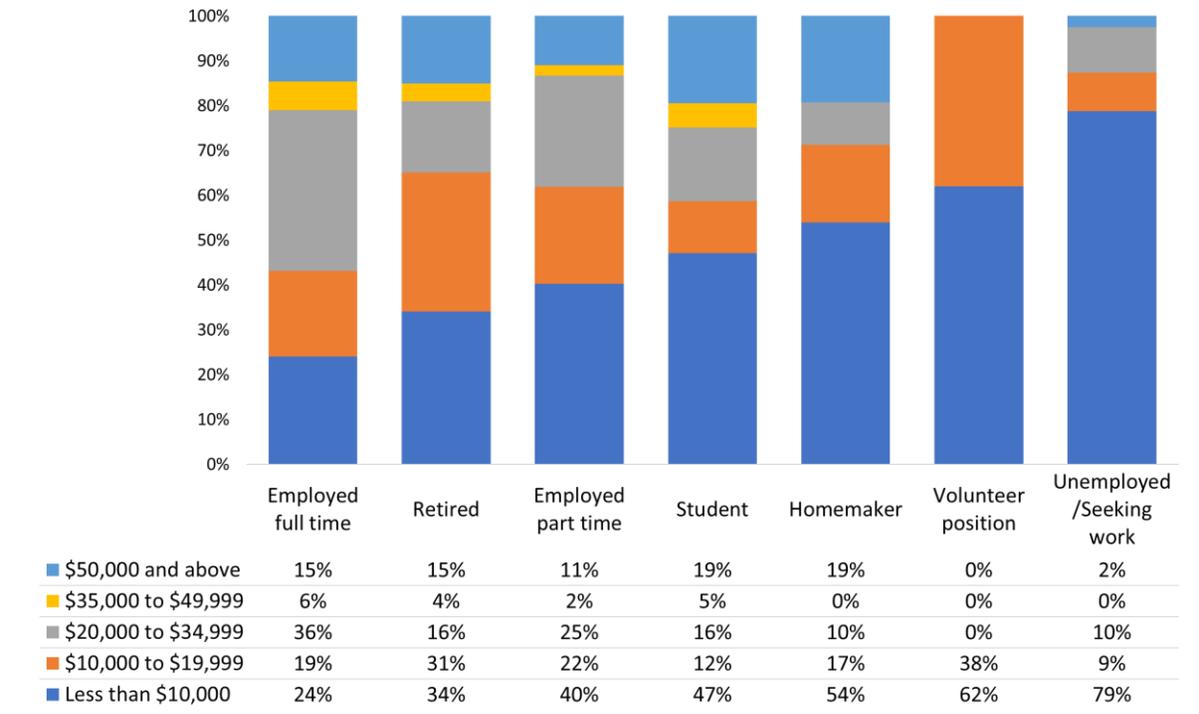
Income of Rider Households

As is true of riders in many transit-passenger surveys of other systems, most GoRaleigh riders have very low household incomes. In 2019, as in 2018, 35% report household incomes of less than \$10,000. Another 19% in both years report their incomes as ranging from \$10,000 to just under \$20,000, while the balance, 46%, report incomes of \$20,000 or more.

The income distribution varies less than expected among the three levels of riding frequency. Among the three segments the percentage with incomes of less than \$20,000 varies only from 53% to 57%.

Figure 21 Employment and Income

Household Income by Customer Employment



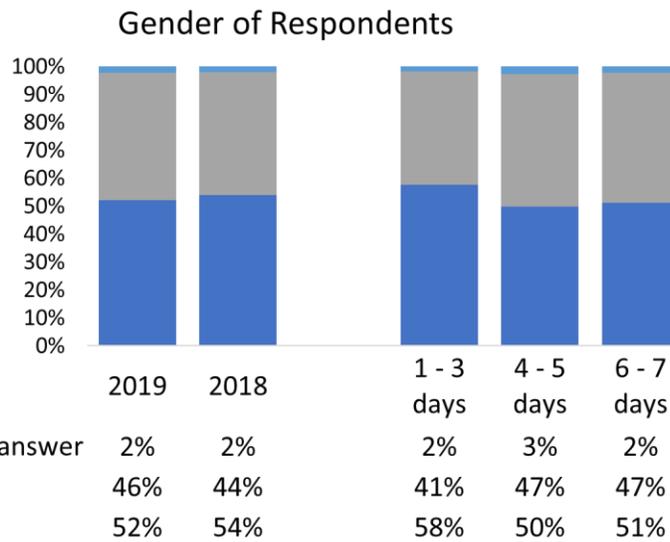
Employment and Income

In 2018, a household income for someone with full time employment below \$10,000 seems unlikely. However, in a minimum wage job (\$7.25 in NC), even if a person worked full time for 2,000 hours a year, the income would be only \$14,500. Among full time employed GoRaleigh riders, 24% report incomes below \$10,000, and another 19% below \$20,000.

Frequently such low wage jobs do not provide a full 2,000 hours of work, with the result that incomes can fall below that level. It is important to remember that responses to the income question in surveys are approximations. For example, the real income of a household with earning income under \$10,000 is likely to be supplemented by such programs as SNAP and Medicaid. And the real incomes of those who are employed and have fully paid health insurance, and those who are sixty-five or older and on Medicare, or students on scholarships (etc.) have income supplements that are unlikely to be accounted for in a quick survey response about household income. Thus, the actual income levels may be understated. The point remains, however, that the income levels are very low.

Gender of the Customers

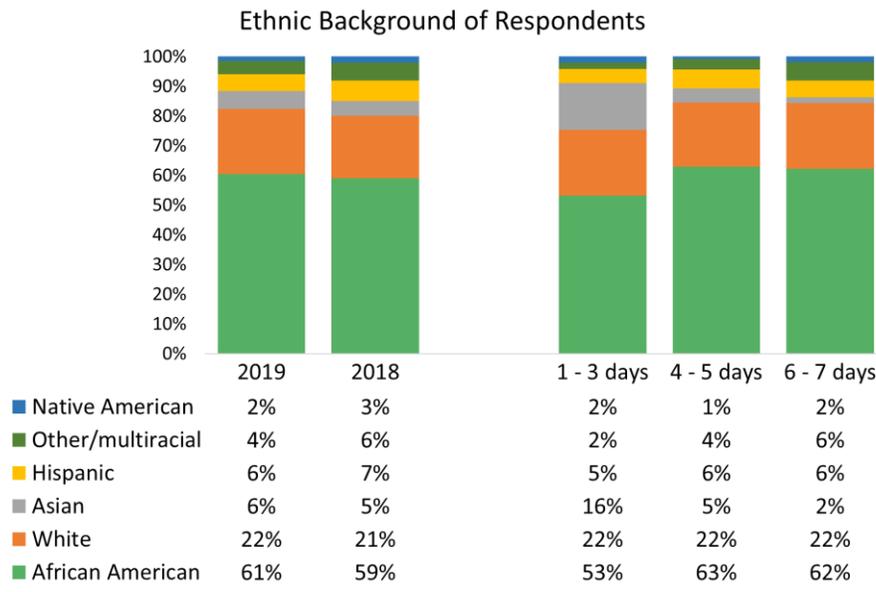
Figure 22 Gender of Customers



GoRaleigh customers are more often male (52%) than female (46%), with 2% preferring not to state a gender identity. The gender balance does not differ significantly among the rider segments except for the one to three day riders who are considerably more likely than the other segments to be male.

The GoRaleigh gender split is the reverse of the national figures cited in the CJI APTA report “Who Rides Public Transportation.” Among bus customers nationally, 56% are women.

Figure 23 Ethnicity of Customers



Ethnicity of Customers

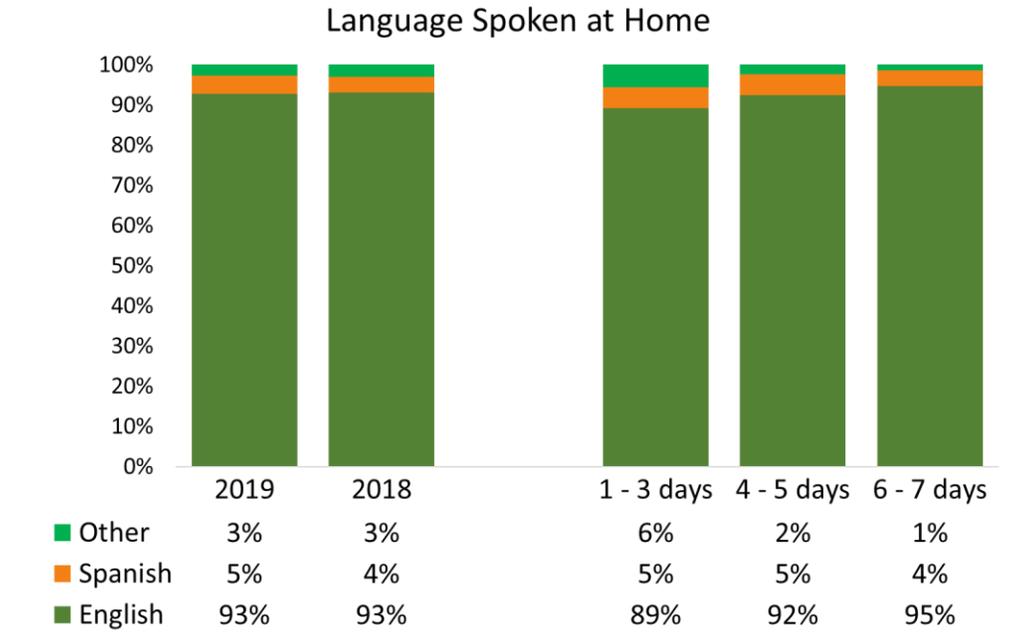
In 2019, 61% of the respondents identified themselves as African American/Black and 22% as Caucasian/White. These two groups total 83% of the ridership.

Those identifying as Hispanic account for 6% of the ridership, Asian as 6%, and Native American as 2%. The “Other” category allowed for

a handwritten response. But the write-ins were predominantly expressions of nationality or cultural groups (Greek, Egyptian, Jewish, etc.) or notation such as “mixed,” or sardonic (e.g. American, Human) and in this context are not at all helpful.

The distribution of ethnicity differs somewhat among the rider segments, with the four to five day (63%) and six to seven day (62%) customers considerably more likely to identify as African American compared to one to three day riders (53%).

Figure 24 Language Spoken Most Often at Home



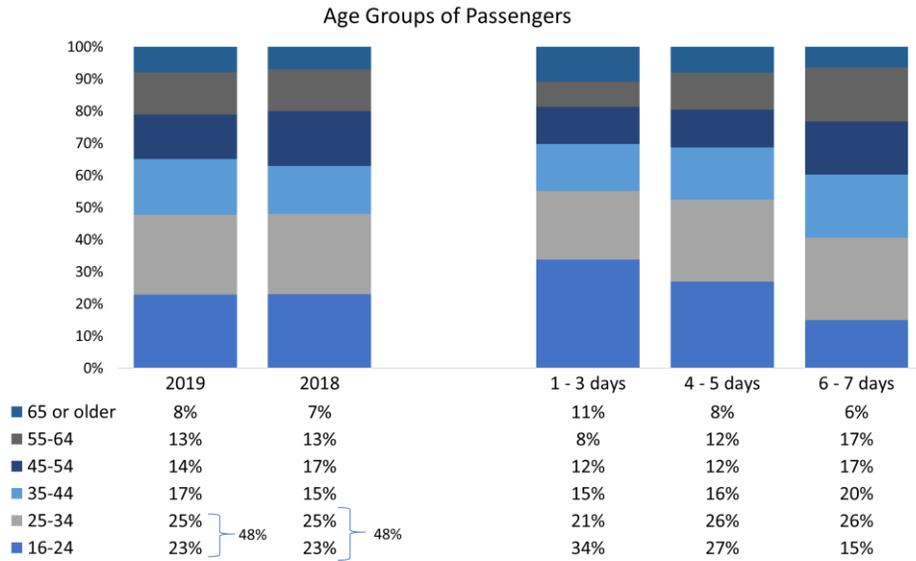
Language Spoken Most Often at Home

The overwhelming majority (93%) of GoRaleigh customers most often speak English at home while only 5% speak Spanish at home. The rider frequency segments do not vary significantly in the percent who speak Spanish at home. The one to three day riders, however, have 6% who speak a language other than English or Spanish at home. The languages reported are French, Hindi, Arabic, German, Portuguese, and Russian, all with only a few speakers.

In the survey of GoRaleigh customers, 77 customers, or 7% of the effective final unweighted sample identified themselves as Hispanic, but only 25, or 2% of the completed questionnaires were completed in Spanish. Stated in another way, only one-third (33%) of the customers identifying themselves as Hispanic completed the survey in Spanish.

Age of the Customers

Figure 25 Age of Customers



Age of Customers

Like most bus transit systems in the United States, GoRaleigh has a young ridership. Of all GoRaleigh riders, close to half, 48%, are under the age of thirty-five. This percentage actually underestimates the youth somewhat because for reasons of data validity and ethical practice, we did not attempt to survey anyone who appeared to be younger than sixteen.

The age distributions differ somewhat among the three rider segments. The most notable variation is in the total percentage of the ridership younger than thirty-five. Among the six-to-seven-day customers the percentage younger than thirty-five is 41%. Among the one-to-three-day customers, the percentage is 55%. The four-to-five-day customers fall in between with 53% in that age group. This youthful age characteristic reflects the greater proportion of students in the one-to-three-day and four-to-five-day categories that we saw earlier in Figure 18.

Age Profile of Transit Customers Nationally

Figure 26 demonstrates that nationally, the age distribution among GoRaleigh customers is similar to that of bus system customers in general, although the GoRaleigh customers may tend to be slightly younger than bus riders nationally.

Figure 26 Age Profile of Transit Customers Nationally (APTA, *op cit*)

- Nationally, 22% of bus customers are under the age of twenty-five, a percentage statistically the same as the 23% under twenty-five among to GoRaleigh customers.
- Nationally, another 21% are between twenty-five and thirty-four, compared to GoRaleigh's 24%.
- Another 17% are between thirty-five and forty-four, the same as GoRaleigh's 17%
- Similarly, nationally, 17% are between forty-five and fifty-four compared to the 14% among GoRaleigh customers.
- The balance, 23% nationally and 22% for GoRaleigh, are fifty-five or older.

Comparison of Rider Age Profile of GoRaleigh Riders and Public Bus Transit Riders Nationally

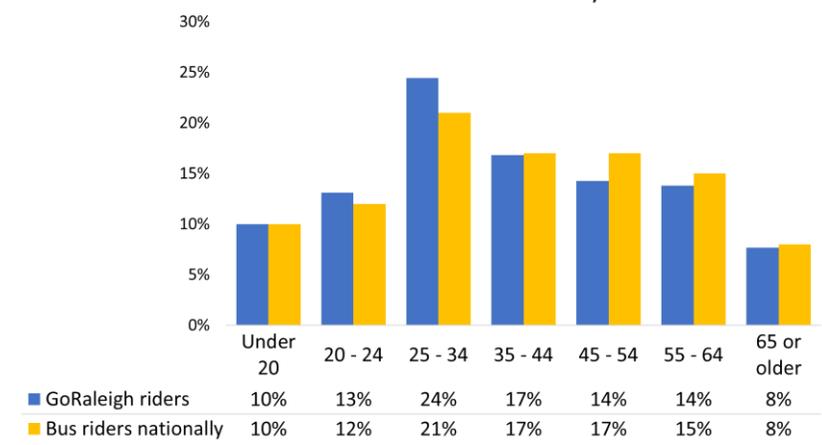
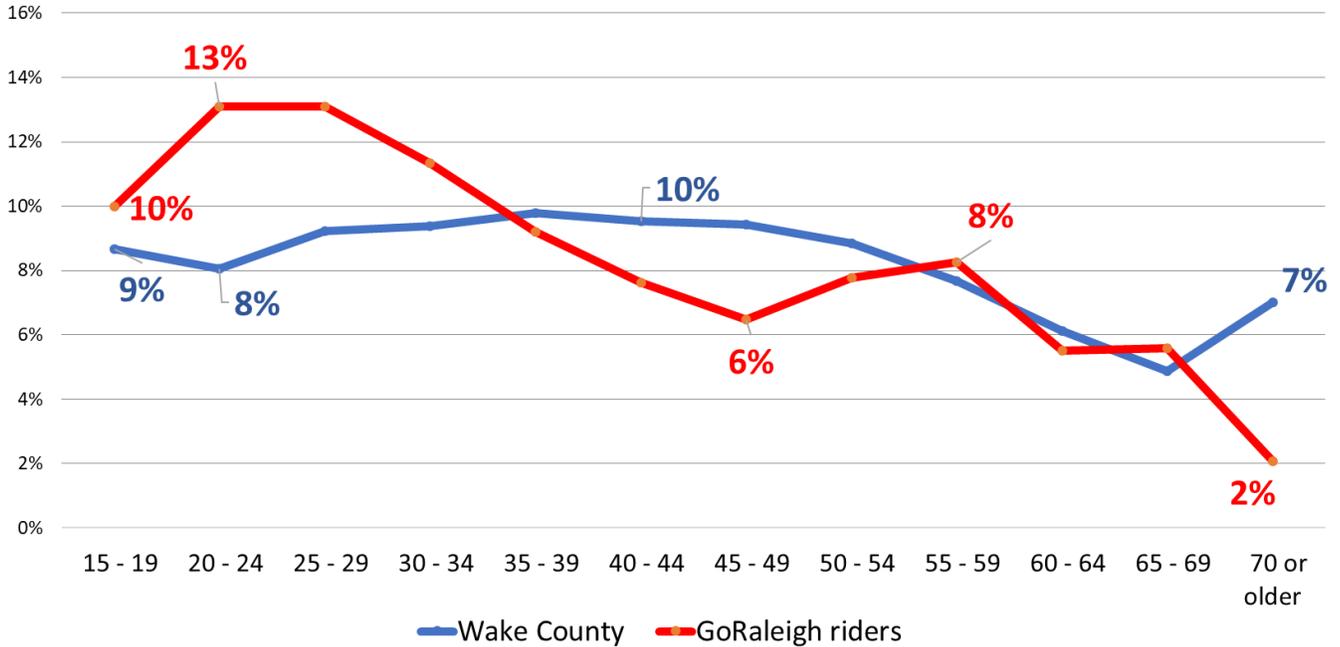


Figure 27 Age of GoRaleigh Customers and the Durham County Population

Age Distribution of GoRaleigh Riders and Wake County Population 15 and Older

(Source of population data: American Community Survey, five year estimates, 2017)

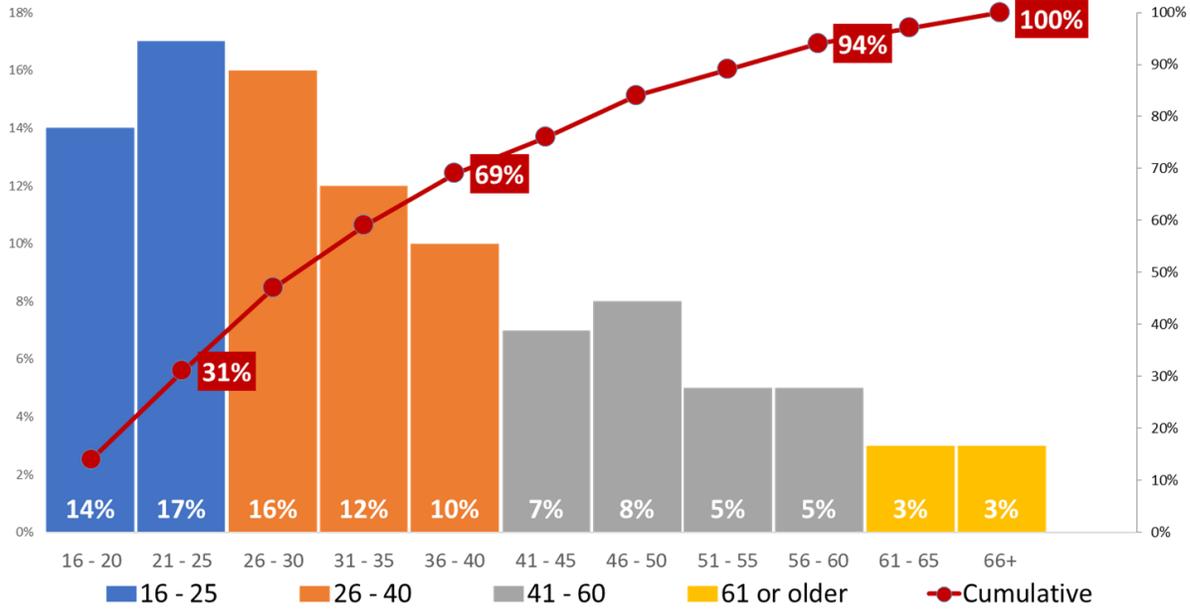


Age of GoRaleigh Customers and the Durham County Population

Relative to the percentages in each age group among the county population fifteen and older, GoRaleigh ridership diverges most in the age ranges from twenty to twenty-nine and above sixty-nine. The county population in the twenty to twenty-four year old age set accounts for 8%, while in the ridership it accounts for 13%. And at the age of seventy and older, the percentage of the population is 7% while among riders it is 2%. There is also a significant gap in the age range from 40 to 50, with the largest gap occurring among those 45-49.

After the age of thirty-five, the county population follows a gradual downward trajectory until the age of sixty-five when the percentage of ticks up somewhat. After the age of fifty-five, the GoRaleigh ridership also trends down, and then falls to only 2% at the age of seventy or older.

Figure 28 Age Profile of GoRaleigh Customers



An Age Profile of GoRaleigh Customers

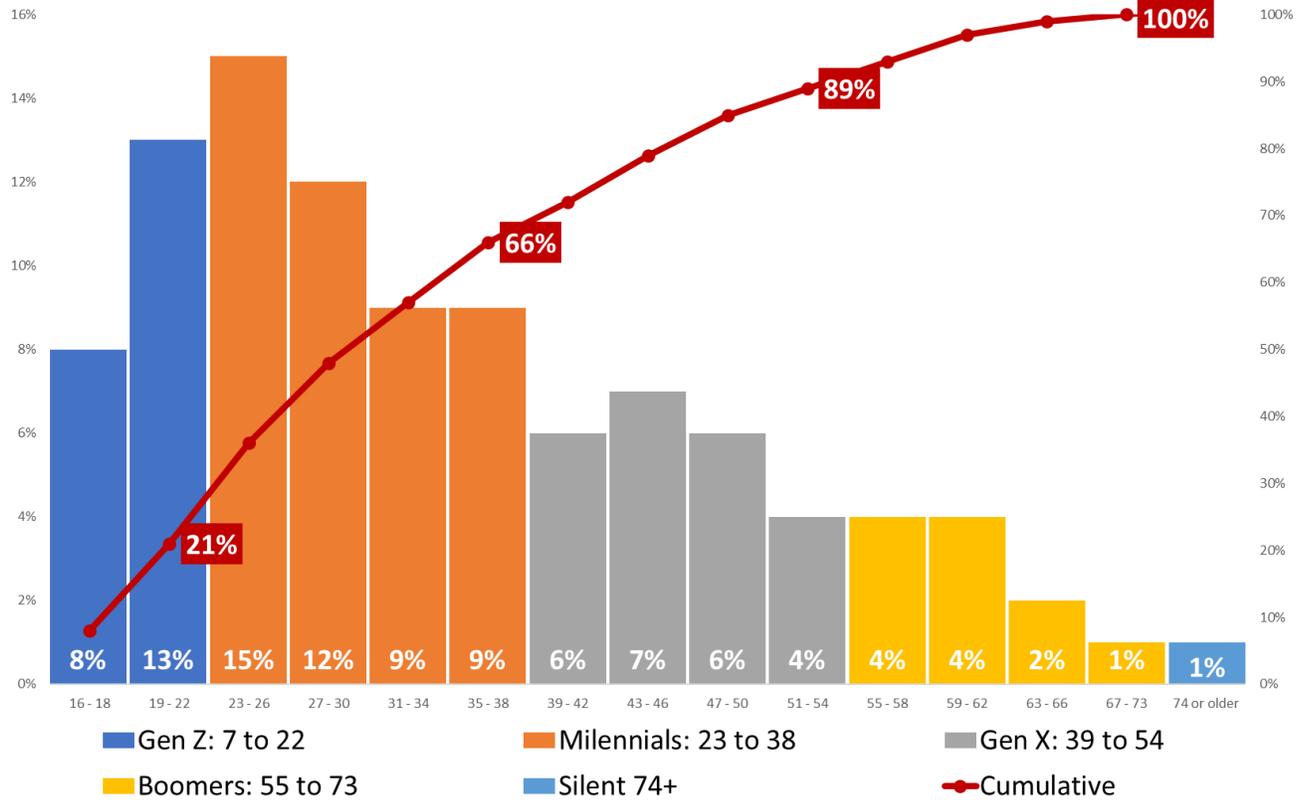
A quick glance at the chart above tells an important age story about ridership: It is somewhat disproportionately young. Close to one third (31%) of GoRaleigh riders are twenty-five or younger. More than two-thirds (69%) are forty or younger.

In several studies of transit customers in other cities, CJI has found that the age profile of any given system’s bus ridership tends to follow an age progression similar to that shown above in Figure 28. Generally, about one-fourth to one-third of ridership falls into a youthful cohort, young, often in school or college, preparing for work-life, and ranging in age from sixteen to approximately twenty-five. After the age of twenty-five the percentage of transit customers in each age group drops off and enters a declining slope, which, for most transit systems we have studied, represents a life cycle period when many transit customers are entering a career phase of life, earning more and often buying a vehicle.

The age-curve then tends to flatten out somewhat between the ages of forty-one and sixty, in the GoRaleigh case averaging 6.5% of the ridership during that period.

After the age of 60, the percent of ridership falls off to 3% as people begin to retire.

Figure 29 Generations and Ridership



Generations and Ridership

For purposes of visualizing the age characteristics of the GoRaleigh customer base, another way to think about the age distribution of the ridership is to apply the age-ranges popularly used to describe generational groups. We have used definitions proposed by Pew Research Center⁴. The age sets used by PEW and those in the survey do not entirely correspond because while Pew defines Gen Z as between the ages of seven and twenty-two, the GoRaleigh survey interviewed no one below the age of sixteen. Also, while Baby Boomers are said to be no older than seventy-three, there are too few riders in the survey above that age to create a separate group for the older generation (“The Silent Generation”) and they are grouped with the Boomers for purposes of the chart. However, the PEW definitions provide an adequate guide.

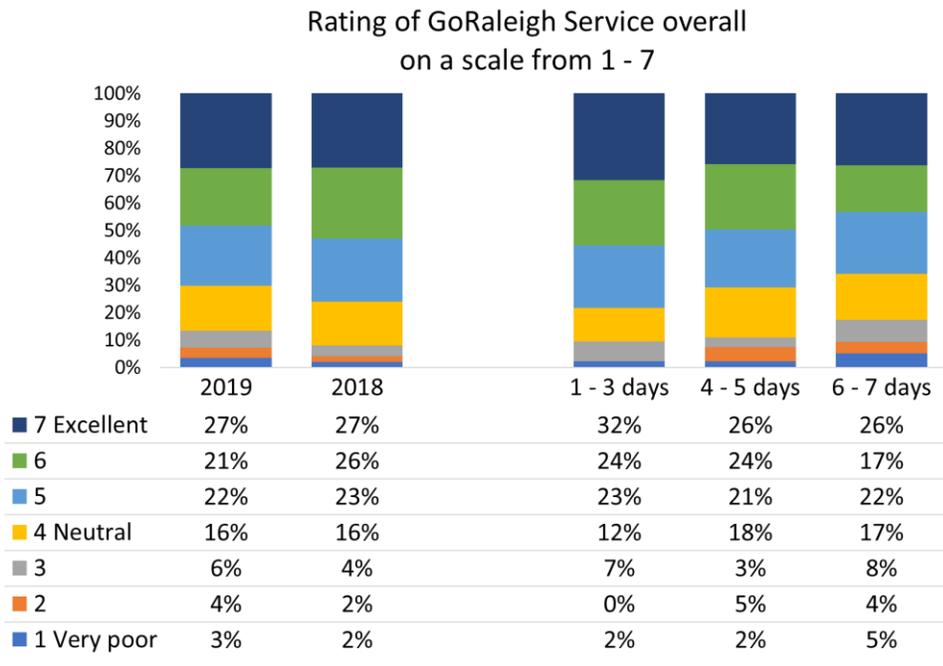
In Figure 29, we see a pattern very similar to that presented in Figure 28. Both charts make the point that a disproportionately large proportion of the ridership is young. In the case of generations, the youthful Gen Z and Millennial generations account for two-thirds of the total ridership (66%).

The bulge in the percentage of riders at middle age noted on the previous page represents a combination of the leading edge of Gen X and the trailing end of the Baby Boom.

⁴ See <http://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/>

Customer Satisfaction

Figure 30 Overall Service Rating by Rider Segment



Overall System Rating Score by Rider Segment

Customers were asked to rate nineteen aspects of GoRaleigh service using a scale from 1 to 7, on which a score of 7 means “Excellent,” and 1 means “Very poor.” They were then asked to rate the service overall (See questionnaire, Appendix A). We begin this section of the report with the overall rating of service.

The occasional, one-to-three-day, riders offer the

highest score on overall service quality, with a total of 56% scoring service overall as 6 or 7 on the seven-point scale, while fewer, 50%, of the four-to-five-day riders and 43% of the six-to-seven-day riders assign those scores. This apparent relative reluctance to assign a perfect score for transit service is not uncommon for this six to seven day segment, perhaps because they rely of public transit more often and for more purposes than others with more opportunities to observe unavoidable problems.

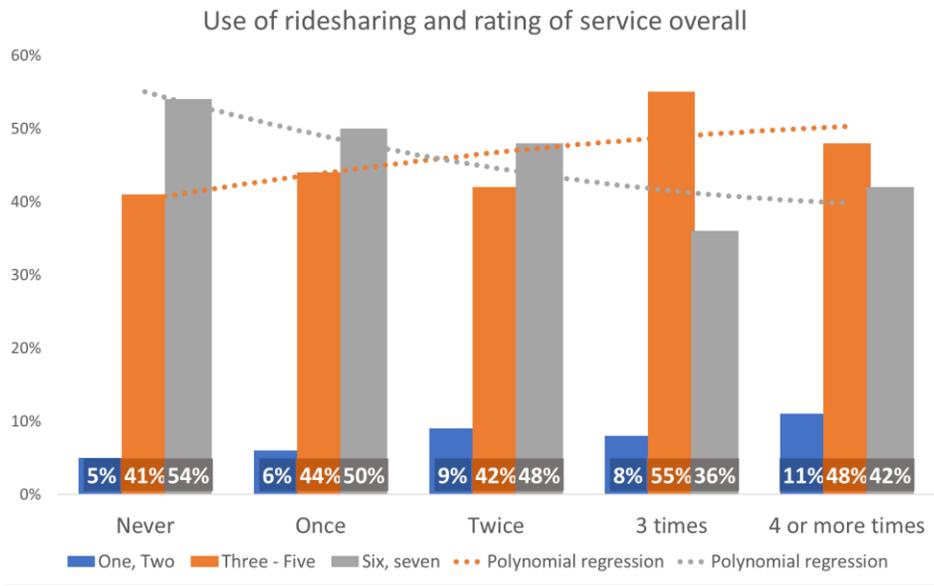
CHANGE IN THE OVERALL SCORE

In 2019, twenty-seven percent (27%) rate service overall as seven, or excellent. Another 21% score it as six, giving a total of 48% with very high satisfaction scores. However, there was a modest decline, greater than the margin of error, in the score of six, causing the total in the two highest categories to decrease from 53% to 48% from 2018 to 2019. There was also a corresponding increase in poor scores of one through three, from 8% to 13%.

It is always difficult to interpret changes like these. One should not immediately assume that the change was driven by service deficiencies. Samples do fluctuate year to year in spite of all efforts at inter-year uniformity. For this reason, it requires more than a one year comparison to seriously suspect a trend. Demographics of the ridership itself changes. However, testing shows that none of the demographics can explain the change. It is true that the higher the income, the lower the score. But income of the total sample did not change appreciably from 2018 to 2019, so that cannot explain a decline in the overall service rating. Other demographics are unrelated to the overall service score, i.e. ethnicity, age, or vehicle availability.

What, then, is associated with the lower score? Ridesharing.

Figure 31 Relationship between overall service rating and ridesharing



Overall Rating Score and Ridesharing

In general, the more ridesharing trips a GoRaleigh customer makes, the lower the overall GoRaleigh service score will be.

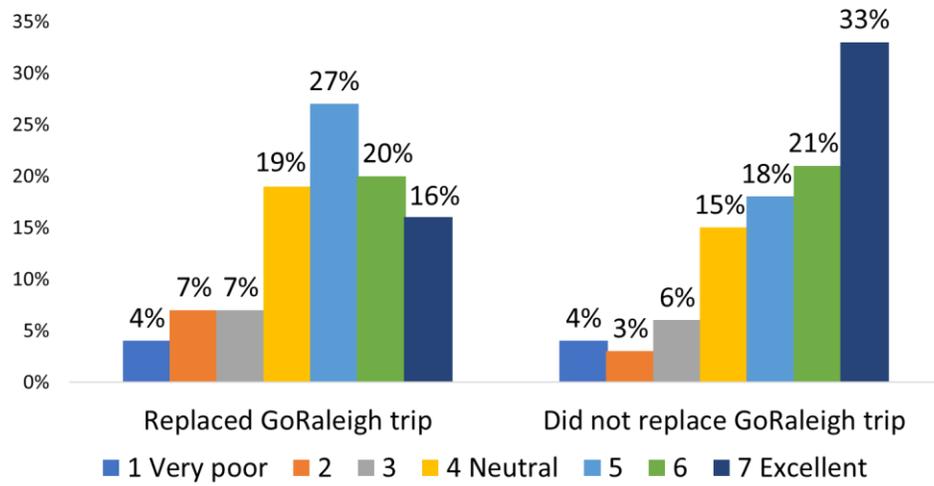
This is, of course, a classic matter of correlation v causality. Or chicken v egg. Are customers using ridesharing more because of less satisfaction with GoRaleigh service? Or are ridesharing trips presenting an attractive alternative that puts bus service in a poor light?

We cannot provide the answer to that. But from Figure 31 and Figure 32 we know there is a clear relationship. The relationship is especially strong between the overall score and having used ridesharing in place of a trip otherwise made on GoRaleigh.

From Figure 15, page 26, we know that the use of ridesharing increased dramatically between 2018

Figure 32 Relationship between overall service rating and replacing a GoRaleigh trip with ridesharing

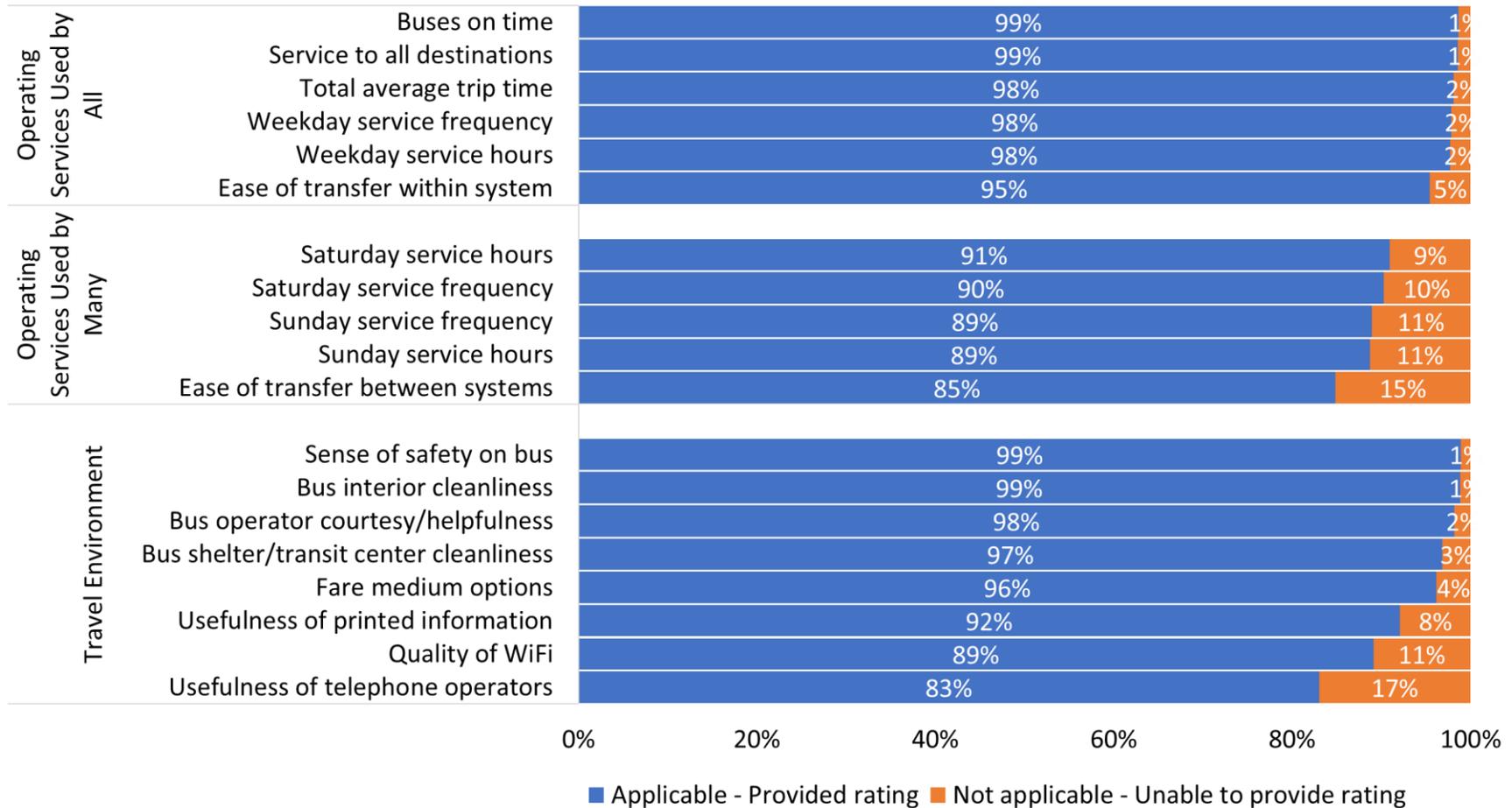
Did you use Uber/Lyft for a trip you otherwise would have made on GoRaleigh?



and 2019, from 37% of GoRaleigh riders to 52% making at least one ridesharing trip. That increase accounts statistically for the change in the service rating score.

Figure 33 Services Included in the Survey, Grouped by Type and Showing Percentage Unable to Provide a Rating

Percent of riders providing a rating vs those saying that this aspect of service was "Not applicable" to them



Services Included in the Survey, Grouped by Type and Showing Percentage Stating that the Service was not Applicable to Them

Two interacting parameters help shape the distributions of the rating scores.

- (1) One parameter is simply the proportion of all customers who can provide a rating, thus presumably indicating that they use the service at least occasionally. We refer to this as utilization. Figure 33 displays in blue bars the percent able to provide any rating whether positive, neutral or negative. It displays in the orange portion of the bars the percent who answered that the service was not applicable to them.
- (2) The second parameter is the type of service being rated. These types are explained below, but the essence is that some are operational, and some are simply static aspects of the travel experience.

UTILIZATION

Taking utilization first, some services such as weekend service, were given ratings by fewer customers than others. We consider the extent to which customers can provide ratings a proxy for *utilization* of the service. To illustrate this changing proportion of respondents offering ratings, Figure 33 displays the percent of all respondents who offered any rating, whether positive or negative, and the percent who said that the service did not apply to them. Ratings for services with fewer users than others have a different denominator when percentages are computed for the ratings and they are thus reflective of only those who use them. The computation of the percentages in the charts which follow and show service ratings are based on only those who answered the rating question, not on the total sample.

TYPE OF SERVICE

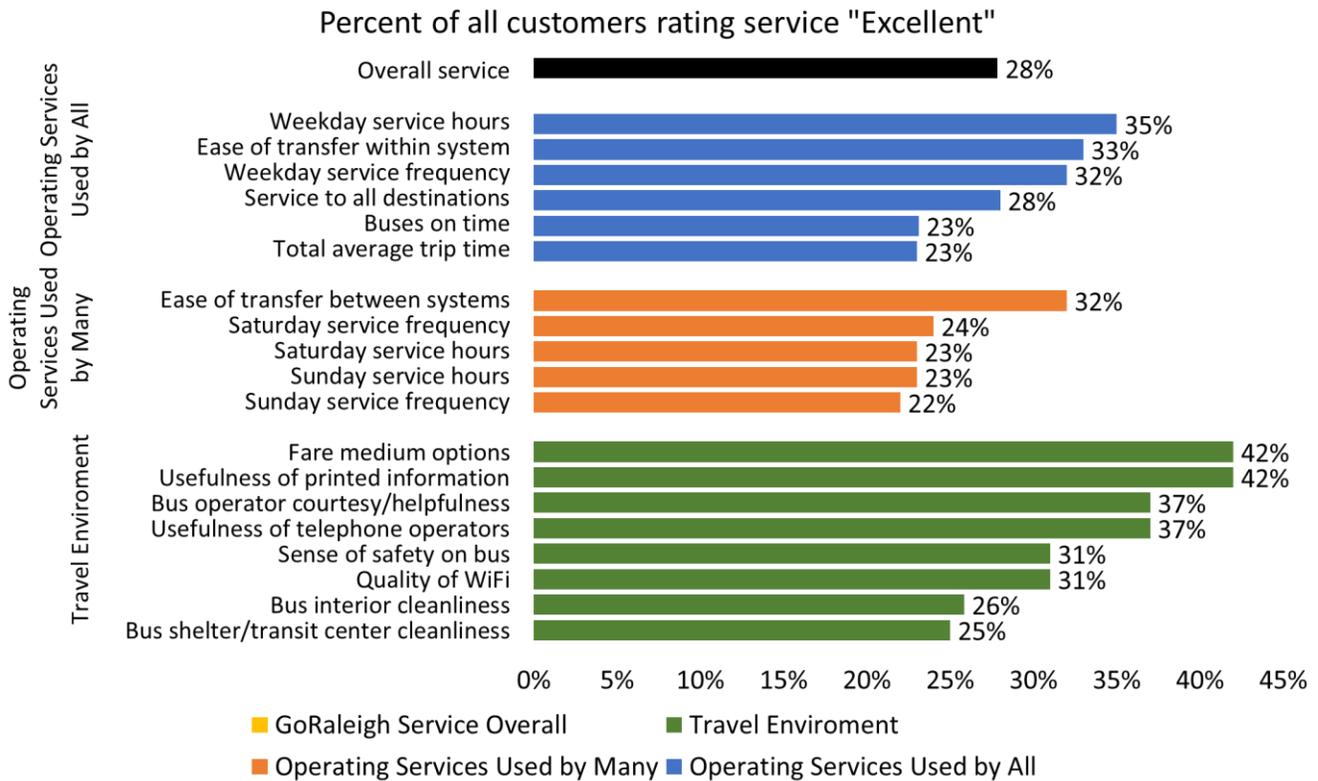
The second parameter involves the type of service. The typology is intended to put comparisons of ratings among the various services, on an apples-to-apples basis. One major factor differentiating the nineteen services included in the survey is whether the service element is *operational*. It is operational in the sense that it involves some combination of system design and the ongoing process of keeping the vehicles moving and serving passengers on a daily basis or is the type of service that sets the general environment in which the customer experiences GoRaleigh services. For example, “Quality of Wi-Fi” and “Fare medium options” are service elements that help set a general environment, while “service to all destinations” and “Buses running on time” are operational matters.

In Figure 33 and Figure 34, we apply this reasoning to differentiate three types of service elements based on two criteria: (1) the type of service (operational or travel environment) and (2) the extent to which operational services service are utilized, using the “not applicable” response as a proxy for not utilizing the service.

One can obviously debate the categorizations. For example, is interior cleanliness of the buses an operational factor or a factor that affects the customer’s perception of the travel environment? It certainly involves operational activity by GoRaleigh, but on the other hand, it does not impact such things as the time customers wait for a bus or their ability to get to various locations. Thus, it is categorized with other factors affecting the environment in which people travel, rather than with operations.

No specific conclusion is to be drawn from Figure 33. It is provided only to give the reader a perspective on the differences among the elements in terms of service type and the proportion of customers using the service, as scores are compared in the several figures that follow.

Figure 34 Scores of "Excellent" in 2018 on Individual Components of GoRaleigh Service



Rating Scores: Scores of "Excellent" in 2019 on Individual Components of GoRaleigh Service

Figure 34 above presents a first look at customer rating scores for individual elements of service. This chart includes only the top score of seven, or "Excellent," on the seven-point scale⁵.

Like Figure 33, Figure 34 is organized by the type of service being rated. At the top of the chart are three operational services fundamental to all or almost all customers. Each of these has more than 30% scoring it as excellent. Weekday service hours, Weekday service frequency, and ease of transferring within the system have the highest percent of excellent ratings in the high utilization operational group, with 35%, 33%, and 32%, respectively. Coverage ("Service to all destinations you want to get to") finds fewer, but more than one-fourth of customers rating it as excellent (28%). On time performance and total time required for a trip reach almost one-fourth (both, 23%).

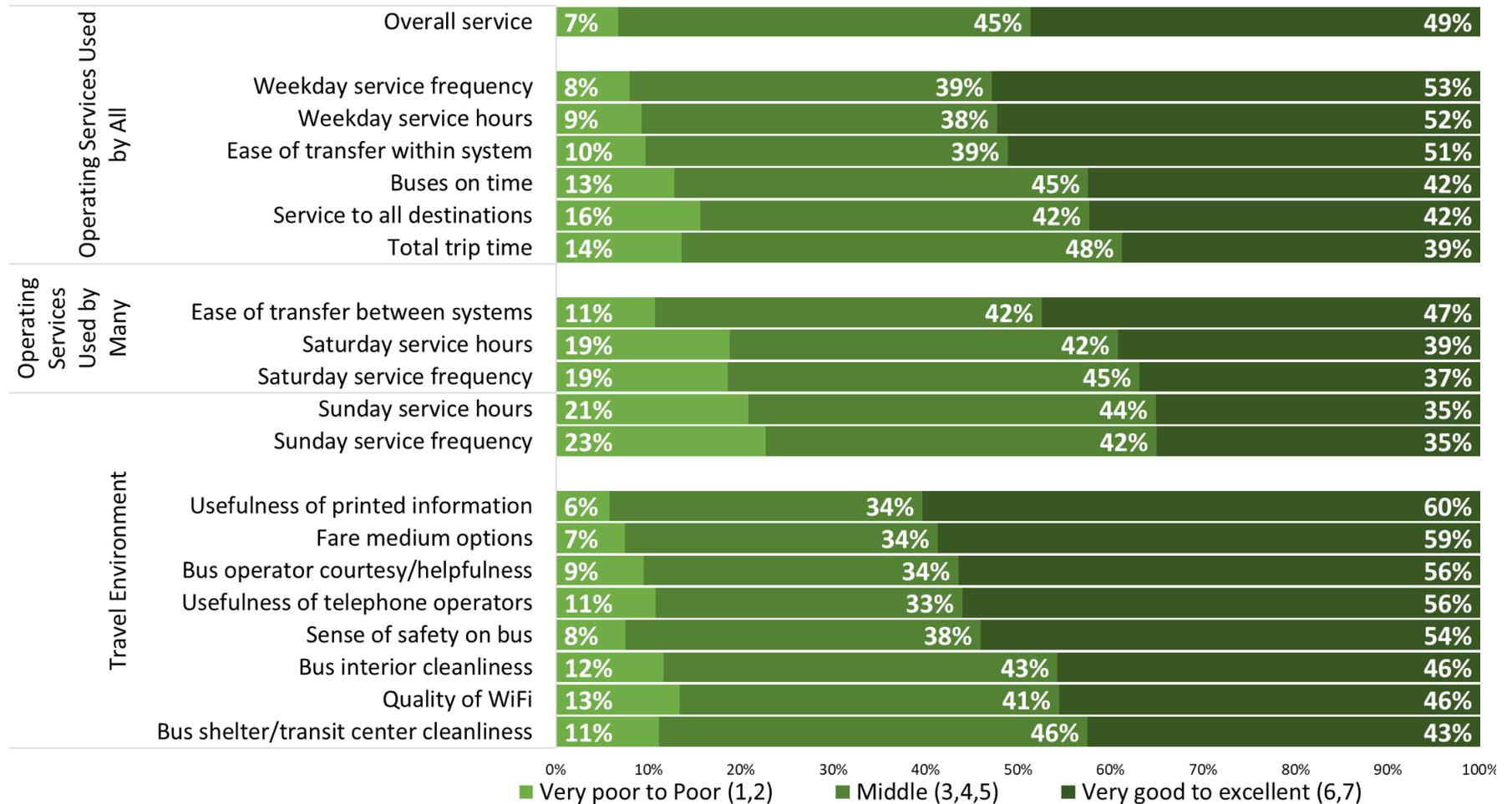
The second set in the chart includes operational services used by many but not all riders. Ease of transfer between systems, which scores 32% excellent is the only item in this set that does not involve weekend service. It is in this set because 15% said the question did not apply to them, implying that they do not make such inter-system transfers in a "typical week." Saturday service hours receive excellent ratings by almost one-fourth (24%). Saturday service frequency falls slightly below that level at 23%. The two other service elements in this set both involve Sunday service, service span ("Sunday service hours") at 23% and frequency and Sunday service frequency at 23%.

⁵ Note that the percentages are based on only those who were able to provide a rating, not the total sample, so that the percent "excellent" is not falsely reduced by inclusion of those who answered "not applicable" in the denominator.

The third set of services involves the environment in which GoRaleigh customers travel. Of the eight services included in this set, six receive excellent scores by more than 30% of the respondents. The fare media options and the usefulness of printed information, both with 42% excellent, are at the top of this list, but both personnel elements, each with 37% at the excellent score level are also at a very positive level. They are the courtesy and helpfulness of the bus operators and the usefulness of the telephone information operators. It is typical for personnel to have very good ratings. Occasional complaints notwithstanding, customers generally like the interaction with the transit personnel with whom they come in contact and give them high scores.

The quality of Wi-Fi on the buses and the sense of safety on the bus, both score 31% excellent. The remaining two elements in this set both involve cleanliness; of the interior of buses (26%) and of the bus shelters and transit center (25%).

Figure 35 Distribution of Grouped Service Rating Scores



Service Rating Distributions

The previous chart, Figure 34, showed the top percentages on the seven-point scale. However, so that we can see what the balance is between positive and negative ratings, it is important to also consider the distribution of scores within the full 1 – 7 range.

To simplify the chart showing the distributions, the scores of 1 to 7 have been combined into three sets as shown in Figure 35 above. The top two positive scores (6 and 7) are combined, as are the bottom two scores (1 and 2). The combined middle scores of 3, 4, and 5 can be

considered neither extremely positive nor extremely negative. The scores of six or seven represent either excellent or nearly excellent scores. This is simply a way to summarize the results that also allows us to visualize the distribution of the scores.

RESULTS TEND TO BE POSITIVE

The basic story of this chart is that, as with most similar surveys for other transit systems, the ratings differ primarily in the degrees of positive ratings, not in stark differences between positive and negative ratings. The percentages in the lowest rating categories of 1 and 2 tend to be below 15%. The percentages giving positive scores of six and seven on the scale in contrast, tend to be much greater. For example, of the six operational high utilization characteristics, three have high six/seven ratings greater than 50%. The other three range from 39% to 42% in the top category.

There are exceptions which have percentages greater than 15% in the low scores. The largest percentages in the lowest score category are for Sunday service frequency and hours, with 21% and 23%, respectively, in the lowest score categories. Saturday service also has high negative ratings of 19% for both service hours and frequency.

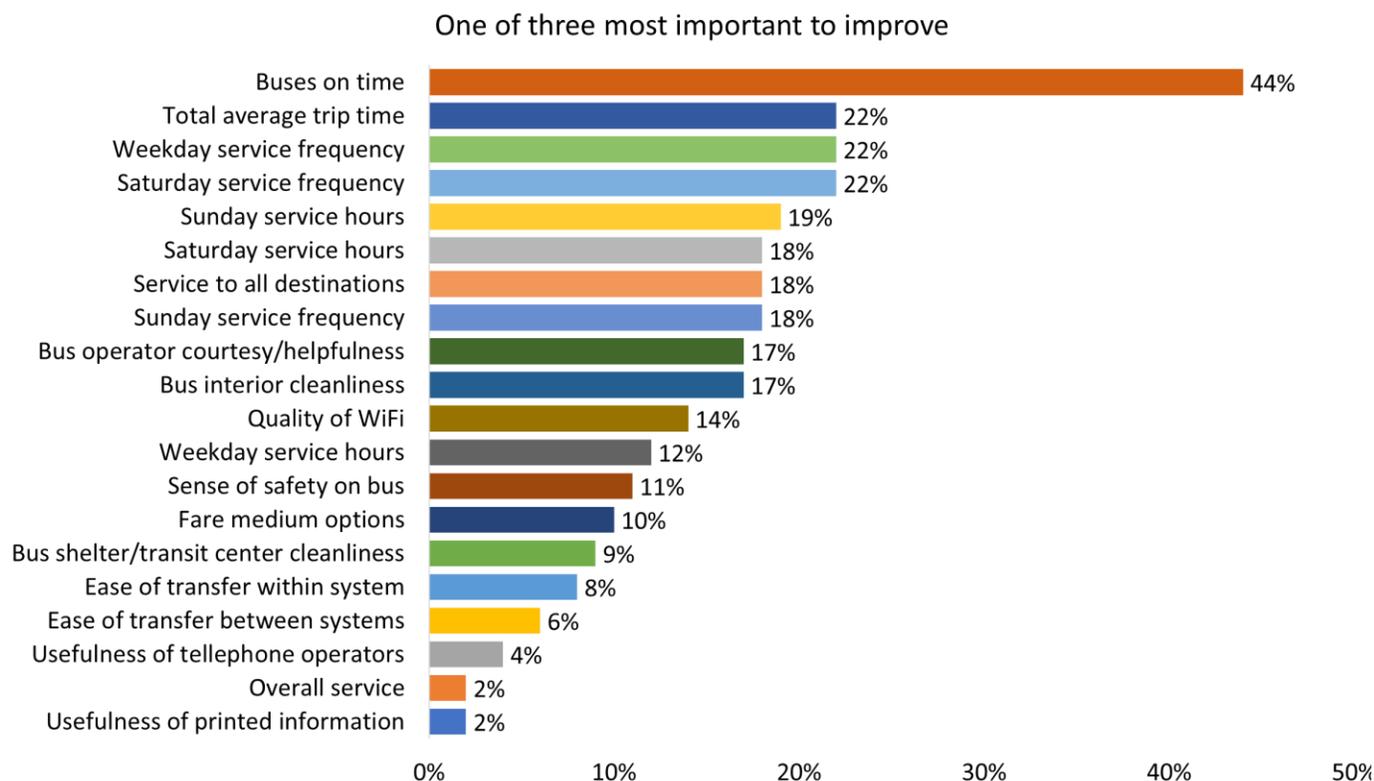
These service elements are worth mentioning only because when low ratings significantly exceed 10% to 15% of the customer base in any industry, it is a clear signal that a significant proportion of the customer base is pushing at the limits of what the system as structured can currently provide.

Determining Customer Priorities for Service Improvement

In the charts from Figure 30 through Figure 35 we have seen the opinions of GoRaleigh customers about service overall and of nineteen separate elements that make up GoRaleigh service. While these charts give us considerable information about how customers perceive GoRaleigh service (quite positively), it is static information – it does not tell us how to prioritize service improvements. Two methods of prioritizing are presented in Figure 36 and Figure 38:

- The first method (Figure 36) is very straightforward. It is based on customer response to the simple request: “Of the services in questions 1 – 19 above, please list the three most important to improve.”
- The second method (Figure 38) involves a combination of two statistical analyses. First it compares each service rating to the average rating of all services: Is the rating above or below the average score for all nineteen elements of GoRaleigh services? Second, it correlates the rating of each element of service with the rating of GoRaleigh service overall so that we can infer its influence on that overall score.

Figure 36 Most Important Element to Improve



One way to prioritize: Ask Customers “What Are the Three Most Important Services to Improve?”

Forty-four percent (44%) of GoRaleigh customers indicate that having the buses run on-time is one of their top three improvement priorities. This is always rated as the most important of the top three as it is here. At GoRaleigh, 42% give on-time performance a very good rating, and only 13% give it a poor rating. Yet it appears at the top of the improvement priority list. The reason for this is that there is no limit on the demand for “on-time” performance, by which people appear to mean, a bus at their stop when they want it.

It is important to keep in mind that the customer belief that on-time performance must be improved is a customer *perception*, not a measurement-based observation. Customers themselves will often arrive at their stop early, marginally on time, or a bit late for their bus and perceive that it is the bus that is off schedule. They may also not know the relationship of their stop to a time point. Thus, their perception and the reality can be quite different.

While the score on the seven point scale for on-time performance did not improve between 2018 and 2019, the percent placing that item in the top three to improve dropped dramatically from 55% to 44%. We had previously hypothesized that to the extent that more people begin to use real-time transit apps for bus arrival information, as 59% now do (see Figure 39), that that information should decrease the anxiety of waiting and will help reduce the perception of a lack of on time performance. However, in the 2019 survey data, riders who have the transit app on their mobile phones are no more or less likely than those who do not to identify on-time performance as among the top three. Therefore, use of a transit app cannot explain the change in the ranking.

The services next most frequently named as priorities for improvement were all named by 22% of respondents. The total time the trip takes, weekday service frequency, and Saturday service frequency are all named in the top three by 22%. It is interesting that frequency (weekday and Saturday) appear among the top four customer improvement priorities. Frequency is, of course, closely related to the perception of on time performance. The inclusion of Saturday frequency along with weekday frequency is also interesting because fewer riders use GoRaleigh on Saturday.

Other items in the top tier of priorities are also operational aspects of service. Saturday and Sunday service hours, coverage, and Sunday service frequency all are in the lower end of the top eight improvement priorities. The only operational aspect of service not falling into this top tier is weekday service hours. Apparently, there is a level of satisfaction with existing service in that respect.

Why would the mention of on-time performance as one of the top three service aspects to improve have dropped by twenty points? We tested whether it had to do with the adoption of the transit app (see Figure 39, page 58) because the use of the app increased dramatically from 37% to 59% and it might provide confidence in the arrival of the next bus. However, there was (disappointingly) no relationship.

A likely explanation was provided by David Walker of GoRaleigh. On-time performance (OTP) has been consistent for years, varying within a narrow range of 81% to 84%, so not change in that would explain the decrease in concern with OTP. However, as part of the ongoing development of the high frequency network, frequencies have been increased on several routes. His comments follow:

In January 2019 we added our 4th high frequency network (HFN) route (operating every 15 min) in SE Raleigh. The new 19 MLK route ridership has grown by 60 to 70% on this new HFN service. We also added 30 minute frequencies 6 am to 7 pm on the 4 Rex, 27 Blue Ridge and 36 Creedmoor. The former 4 Rex route was cut in half. 2nd half is now the 36. The 27 Blue Ridge is new service.

Maybe the higher frequencies make the OTP not quite as important?

We believe that this is the likely explanation. High frequencies should have precisely that effect of diminishing the customer's concern with on-time performance because the takes are lower if one misses a bus.

A second way to prioritize: Determine Which Service Elements Would Move the Needle of the Overall GoRaleigh Service Rating if They Were to Be Improved

Using survey data to prioritize elements of service that customers feel need improvements is a challenge. The chart of the top three services customers feel should be improved presented one way to do it. Figure 38 illustrates a second way to accomplish it. This approach takes the pool of nineteen services and answers the question:

Which of these are more important and which are less important in determining the customers' rating of GoRaleigh service overall?

This question is answered in a matrix. The matrix itself is actually less complex than it may seem, but it does require some explanation.

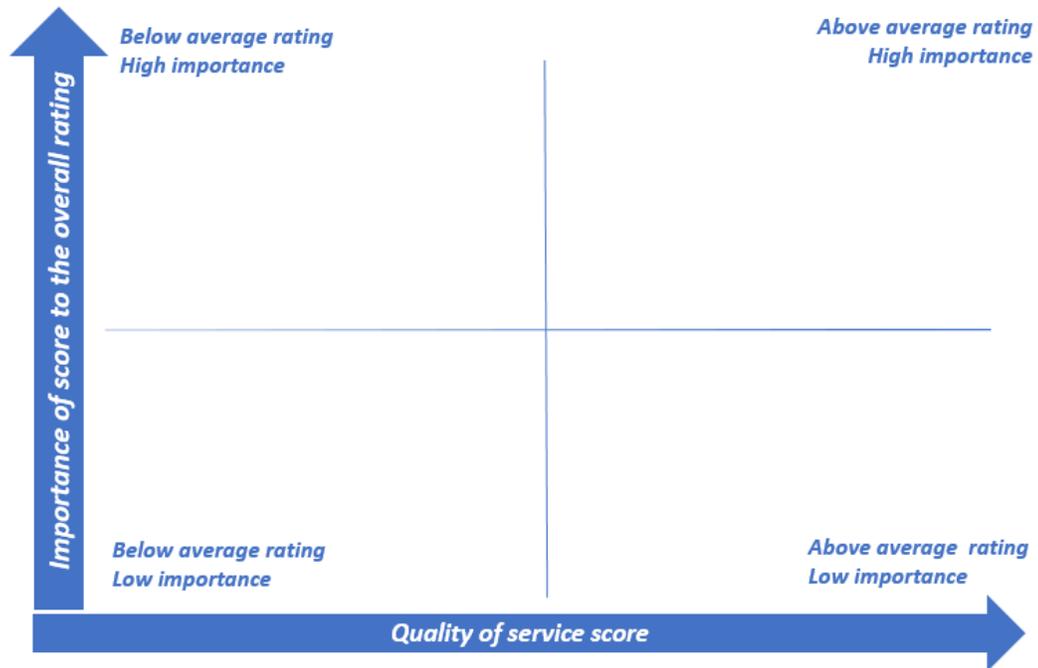
- The concept of the matrix in Figure 38 as follows: Respondents rated nineteen separate aspects of GoRaleigh service as shown in previous charts. They also rated “*The quality of GoRaleigh services overall.*” We can assume that customers’ ratings of the quality of services overall sum up their ratings of quality of the nineteen specific elements of service. Assuming this, we can answer the key question, which is, “*Which of the nineteen aspects of GoRaleigh services would, if improved, move the needle of the rating of GoRaleigh service overall?*”
- Two basic statistics are involved in this analysis, first the average or “mean” rating of service quality on the scale from 1 – 7, and second, a correlation statistic that measures the strength of the relationship (i.e., the *correlation*) between each element of service and the overall service rating for GoRaleigh. These statistics, when used together, answer two questions: How do customers rate each of the nineteen elements of service? And how closely related is each of those ratings to the overall rating?
- To visually display the results of this kind of analysis means using a simple graph with the 1-7 rating on one axis (the horizontal axis) and the correlation on the other (vertical) axis. However, there are challenges to doing this. The major challenge for the analysis is that both the correlations and the ratings all tend to be positive. For example, the service ratings tend to vary more between scores of 4 through 7 than between 1 and 3 (see Figure 35 page 47). There are very few poor ratings, which makes sense, since if many riders rated service negatively, it would be odd if they continued to use the service. Because so few scores are negative, we have to have a way to separate the merely good from the very good scores, not the worst from the best.
- The same kind of problem occurs with the correlations. All aspects of service go into a customer’s evaluation of the overall service. Therefore, we need a good way to differentiate between the stronger and weaker correlations. A useful way to do this is to *standardize* the scores. This simply means to convert the correlation to a relative score – i.e. a score that shows how important each service element is relative to all other elements of service⁶. This procedure enables us to construct a matrix that shows the services which, if improved, would have the most powerful effect on the rating of GoRaleigh service overall.

Placing the score in a matrix like the one below will help answer the question: What service improvements would help more to move the needle on the rating of GoRaleigh service overall? To do this, we look at the ratings and at the correlation of each of those ratings with the rating of GoRaleigh service overall. The results can be charted in a matrix like the one below in which the higher a service element is vertically in the matrix, the more important it is to the customer, and the farther to the right it is, the better the customer’s current rating of that service is.

In Figure 38 we will add the actual survey statistics to fill out the matrix. That will show service improvement action priorities as shown below. The elements most in need of improvement are in the upper left quadrant. Those that may be “easier wins,” but with less impact on satisfaction overall, are in the lower left. The elements that must be maintained as strong are in the upper right. The elements in the lower right are those that are in good standing with customers without additional effort by GoRaleigh. However, in some cases (e.g., safety) the element can be volatile if problems arise, so complacency is not an option.

⁶ A correlation coefficient varies from -1 to +1. Realistically in passenger survey data the correlations are always degrees of positive, never negative. The strength of the correlation varies with a narrow range, making differentiation difficult. To resolve that problem, standardization converts the correlation score to a standard deviation. In the matrix in **Error! Reference source not found.**, therefore, the vertical axis varies from -2.5 to +2.5 standard deviations, not from -1 to +1.

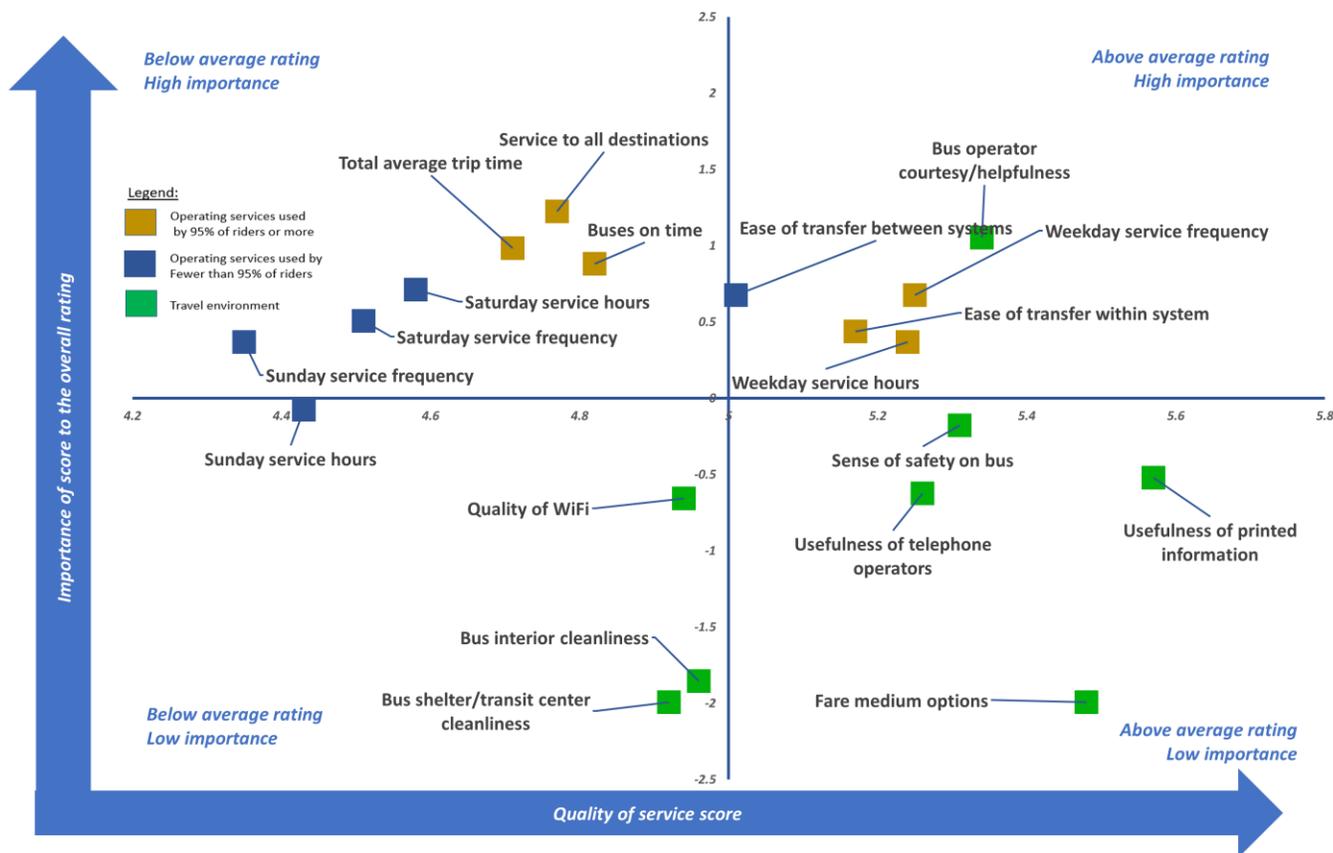
Figure 37 A Service Improvement Importance Matrix



The diagram above displays how the nineteen elements of service are positioned within this priority matrix.

- Vertically, it differentiates those aspects of service ranking above and below average in terms of importance in determining the overall GoRaleigh service score. Items above the center line are above average in importance.
- Horizontally, it differentiates aspects of service rated below average to the left of the line and above average to the right.

Figure 38 Relationship between Overall Performance Rating and Ratings of Individual Service Elements



Relationship between Overall Performance and Individual Service Elements

In the chart, the location of a service vertically, up or down along the *vertical axis indicates the strength of its correlation* with, and presumably influence on, the overall rating for GoRaleigh service. The higher on that axis, the more important we can assume that element is in influencing the score for service overall. The lower on the line, the weaker it is. The *horizontal axis indicates the rating score* for the individual element of service relative to the rating of all rating scores. The farther to the left, the poorer the rating compared to the average of all ratings, and the farther to the right, the better the rating compared to the average of all ratings. The two lines cross at the mid-points of the scores.

In considering the matrix above, keep in mind that the position of a service element in the matrix is based on its rating *relative to the average for all scores*. For example, a service element appearing at the right means that it is rated *better than the average of all service elements*. If, for example, the average score for all nineteen service elements were, say, 3.0, and the score for a specific element were 4, it would have a *relatively positive* score in spite of the fact that in absolute terms on a scale from 1 – 7, a 4 would be a neutral score, not a highly positive score. It would be, in short, better than average⁷.

⁷ The statistic is called the Z-score in statistics jargon and is based on the number of standard deviations from the mean for the correlation score. The scores from -2.5 to +2.5 shown on the axes are counts of the number of standard deviations from the mean. Note that this is a slight change of method from that used in the 2018 report when both the score itself and the correlation were plotted as standard deviations. It is believed that the current method provides a more stable and intuitively meaningful method.

TOP, BOTTOM, LEFT, RIGHT

- Services appearing above the horizontal line are more important to the overall rating of GoRaleigh service than those that appear below the line, those that appear below the line are less important.
- Services appearing at the right of the vertical line are rated better in quality than the services as the left of the line. The closer to the far right, the better the rating; the closer to the far left, the worse the rating.

Elements in the upper right of the chart are currently helping to boost the overall GoRaleigh service rating by being better rated than the average of all nineteen elements of GoRaleigh service, while others (top left quadrant) are currently detracting from it. It is elements in the latter group that require particular attention given that the objective is to improve overall customer ratings, a proxy for customer satisfaction. Elements in the lower left of the chart receive relatively poor performance scores but have relatively little influence on the overall score. Similarly, elements in the lower right quadrant have relatively high rating scores, but they too have little statistical relationship to the overall score and can be assumed to have little influence on it.

COLOR CODING SHOWS THE LOCATION OF THE SERVICE TYPES IN THE MATRIX

Notice the color coding of the service elements:

- All of the aspects of service we have labeled “Operating services used by 95% of riders or more” are *above* the horizontal line that indicates average importance to the overall service rating.
- Of the five elements we have labeled “Operating services used by fewer than 95% of riders,” three are above the line of average importance to the overall score, and one, Sunday service hours is just below the line.

THE UPPER LEFT QUADRANT: IMPROVING THESE WOULD MOVE THE OVERALL RATING NEEDLE THE MOST

Improving service and thus ratings of the three elements in the upper left quadrant would have the greatest positive impact on the rating of GoRaleigh service overall. Service coverage (“Service to all destinations”), Buses running on time, and Total trip time (time the trip takes) all are fundamental aspects of service, and all appear in this quadrant. Buses running on time is a perennial desire of transit customers and is often found in this position in the matrix. In addition, it was clearly the top priority when respondents were asked to name the top three aspects to improve.

Of course, none of these three services in the upper left quadrant is easily changed. However, the Durham Transit Plan is aimed at just these kinds of structural factors, and over time we should see these scores move to the right in the chart.

THE UPPER RIGHT QUADRANT: MAINTAIN THIS RELATIVELY STRONG POSITION

At the upper right are eight elements of service that represent relative strengths among all GoRaleigh services because they score relatively well, and they are important to the overall GoRaleigh rating. Compared to all other aspects of GoRaleigh service, these services are relatively strong and support the current overall positive rating. Two of these, Saturday service hours, and Ease of transfer between systems are operational services used by somewhat fewer riders than other services. Two of the elements in this quadrant are operational services used by almost all customers: Ease of transferring within the GoRaleigh system, and Weekday service hours. Four relate to the travel environment: Bus operators’ courtesy/helpfulness, the Sense of safety on the bus, the Usefulness of the printed information provided by GoRaleigh, and the Usefulness of the GoRaleigh telephone operators. This is an interesting mix of relative strengths, combining the perennial strength of

interactions with the bus operators (almost always in this quadrant in such surveys), information services, and a sense of personal safety with operational elements, including transferring within or between systems, Saturday hours of service, and weekday service hours.

The high importance and positive score of “Bus operator courtesy/helpfulness” illustrates the power of interpersonal interactions in the overall rating of a service.

THE LOWER RIGHT QUADRANT: THIS SERVICE IS GOOD, BUT IMPROVEMENT WOULD BE WELCOME

Finally, at the lower right are two service elements with high favorable ratings relative to other services, but that under current service configurations are relatively unimportant in influencing overall satisfaction. GoRaleigh does well on these and needs to maintain that level of satisfaction, but efforts to improve all or any one of these would have minimal impact on the rating of GoRaleigh service *overall*.

Weekday service frequency lies in this quadrant to the right side of the matrix indicating a positive rating, but it also lies below the line of average importance to the overall satisfaction score. We saw earlier that it earns 53% ratings of 6 or 7 (see Figure 35). This is important in that this is obviously a key element for a transit system in which two-thirds (67%) of the riders are going to or coming from work, and another 13% are going to or coming from school. Presumably most of these customers are working or attending school during the week, making weekday service a key to customer satisfaction. That 56% rate it as 6 or 7 is a positive sign in that sense.

In other words, riders are apparently satisfied with this service, with the result that it has little impact on variation in the overall rating. Moreover, it is rated in the top three elements to improve by only 13%, placing #9 in the listing of 19 service elements named as important to improve. This a key aspect of service and yet customers are not telling us that they want improvement. They are satisfied with the status quo. The converse of this, however, is that if weekday service frequencies were reduced, it would be likely to lead to rapid disappointment and could indeed have a significant, and negative, impact on the overall rating. Steady as she goes is the message here. The same is true of fare medium options. Customers are satisfied. The task in both cases is to maintain the ratings.

LOWER LEFT QUADRANT: IT WOULD BE NICE TO IMPROVE THESE ELEMENTS, BUT DOING SO WOULD NOT AFFECT THE RATING OF GO RALEIGH SERVICE OVERALL BY MUCH

Six elements of service appear in this quadrant. None is an operating service used by all, or almost all, riders. Instead, these are either services used by most but not all (94% at most) riders. They include Sunday service hours and frequency, and Saturday service frequency. The other elements are aspects of the overall travel environment, the cleanliness of the bus interiors and shelters, and the quality of Wi-Fi service.

Given that the cleanliness of the bus interiors is second on the priority list of elements to improve, its presence at the left of the vertical line of average rating scores is not surprising, but that is below the line of average importance to the overall rating is somewhat surprising. However, what this indicates is that *relative* to other aspects of service which are more basic in the operational sense of getting people to where they want to go, these tend to be both lower rated, and less important than average in their impact on the overall rating.

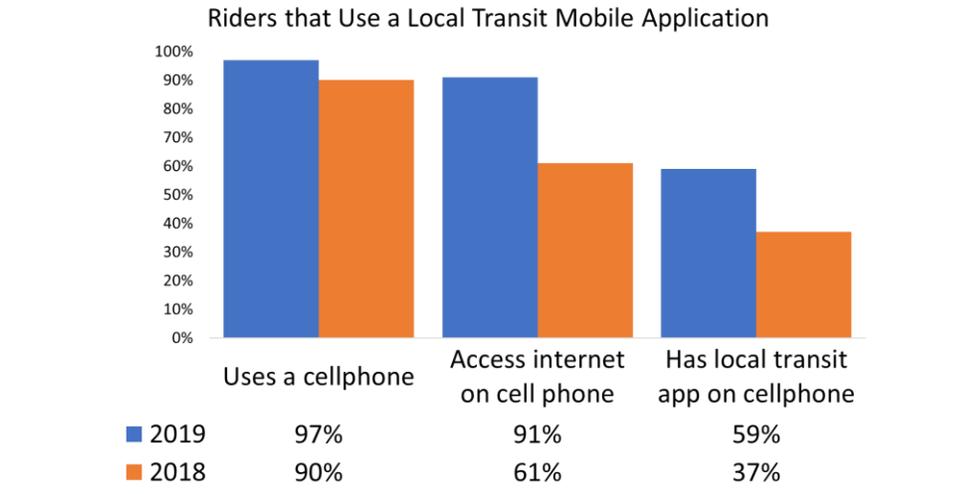
The quality of Wi-Fi service also appears in this quadrant, just below average (i.e., just to the left of the vertical axis) and very low on that axis indicating that it has very little influence on the overall GoRaleigh rating.

THE POTENTIAL FOR DEMOGRAPHIC CHANGE WITHIN THE RIDERSHIP TO ALTER RATINGS AS SERVICE IS CONTINUALLY IMPROVED

Finally, the Durham Transit Plan, coupled with related transit plan in the Triangle Region, represents a profound change in transit service levels. The survey reported here deals only with the current 2019 riders. As services are continually improved, the demographic base of the ridership is likely to change. Average income, and probably average age of customers, are likely to increase. The ethnic mix might also change as new geographic areas are served. More people are likely to begin relying on the service to get to professional and other white-collar jobs. If, and when such changes occur, in spite of objective improvements in service, how they are reflected in service ratings is uncertain because new customer attracted by better service may be more demanding.

Mobile Communication

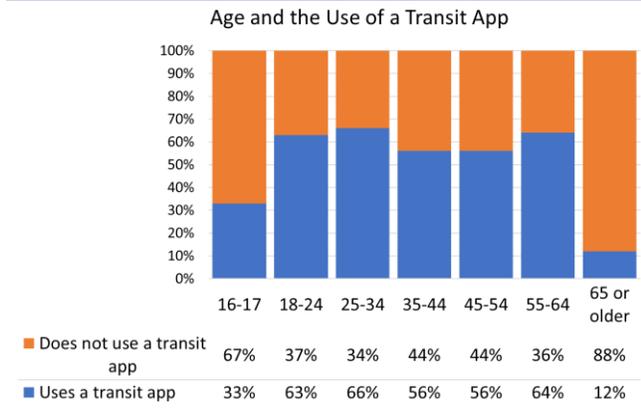
Figure 39 Use of Cell and Smart Phones and the Transit App



Use of Cell and Smart Phones, and Use of the Transit App

Among GoRaleigh customers, cell phone ownership is high, but not quite universal, with 97% of customers indicating they use a cell phone. Almost all of the cellphone users (91%) say they access the internet on it. This has increased rapidly from 2018 when only 61% said they accessed the internet on their cellphone. Fifty-nine percent (59%) of customers use a transit app on their phones, up from 37% in 2018

Figure 40 Age and the Use of Mobile Transit App



The number of customers using a transit app indicates that more than half of GoRaleigh customers are now using their smartphones as transit information sources, that practice is not yet universal. Other communication modes continue to be necessary.

That mobile apps cannot (yet) be relied on to provide the only communications channel to the GoRaleigh ridership is illustrated by the results shown in Figure 40. In most age groups one-third or more of GoRaleigh riders still do not use a transit app. This is extreme among those 65 or older among whom only 12% use such an app. But there are between 36% and 44% of

all other age groups from 18 to 64 who do not use a transit app. We do not know why they do not use a transit app. Perhaps they are so accustomed to using GoRaleigh that they feel no need for it. Or perhaps some of them are not tech savvy. The youngest riders, among whom two-thirds say they do not use a transit app may well be going to or from school and have little need for it.

Appendix A: Questionnaire

Please tell us about how you use GoRaleigh

El cuestionario en español se encuentra en la parte posterior

In the past 30 days, how would you rate GoRaleigh on the following services...



(Circle a rating for each question or check the box indicating that it does not apply to you)

	Excellent		Neutral		Very Poor	Don't know or don't use
1. Buses running on-time	7	6	5	4	3	2 1 <input type="checkbox"/>
2. Frequency of service on weekdays (Mon-Fri)	7	6	5	4	3	2 1 <input type="checkbox"/>
3. Frequency of service on Saturday	7	6	5	4	3	2 1 <input type="checkbox"/>
4. Frequency of service on Sunday	7	6	5	4	3	2 1 <input type="checkbox"/>
5. Hours the buses operate weekdays (Mon-Fri)	7	6	5	4	3	2 1 <input type="checkbox"/>
6. Hours the buses operate Saturday	7	6	5	4	3	2 1 <input type="checkbox"/>
7. Hours the buses operate Sunday	7	6	5	4	3	2 1 <input type="checkbox"/>
8. Total time required to make your usual trip	7	6	5	4	3	2 1 <input type="checkbox"/>
9. Availability of service to all destinations you want to get to	7	6	5	4	3	2 1 <input type="checkbox"/>
10. Ease of transferring within GoRaleigh system	7	6	5	4	3	2 1 <input type="checkbox"/>
11. Ease of transferring between GoRaleigh and other area bus transit systems	7	6	5	4	3	2 1 <input type="checkbox"/>
12. Cleanliness of the bus interiors	7	6	5	4	3	2 1 <input type="checkbox"/>
13. Cleanliness of the bus shelters & transit center	7	6	5	4	3	2 1 <input type="checkbox"/>
14. Your sense of personal safety from other passengers on the buses	7	6	5	4	3	2 1 <input type="checkbox"/>
15. Courtesy and helpfulness of bus operators	7	6	5	4	3	2 1 <input type="checkbox"/>
16. Usefulness of information from 485-RIDE telephone operators	7	6	5	4	3	2 1 <input type="checkbox"/>
17. Usefulness of printed information such as schedules or brochures	7	6	5	4	3	2 1 <input type="checkbox"/>
18. Available ways for you to pay your bus fare	7	6	5	4	3	2 1 <input type="checkbox"/>
19. Quality of wireless internet (WIFI) service	7	6	5	4	3	2 1 <input type="checkbox"/>
20. The quality of GoRaleigh services overall	7	6	5	4	3	2 1 <input type="checkbox"/>

21. Of the services in questions 1 - 19 above, please list the three most important to improve?

- 1 Most important _____ 2 2nd most _____ 3 3rd most _____

22. In a **typical week** on how many days do you use GoRaleigh? (Circle only one)

- 0 (None - Not a regular GoRaleigh rider) 1 2 3 4 5 6 7

23. What is the **ONE** main purpose for which you **most often** use the GoRaleigh buses? Is it to go to or from... (Check only one)

- 1 Work 2 School/college 3 Shopping
4 Medical/dental 5 Recreation/event 6 Other

24. Compared to one year ago, do you currently ride GoRaleigh...

- 1 More often 2 The same 3 Less often 4 Did not ride a year ago

25. For your fare on the **first GoRaleigh bus** you boarded during this trip, did you... (Check only one)

- 1 pay cash fare for that trip only 2 buy a day pass on the bus
3 use a day pass bought ahead of time 4 use a 7 or 31 day pass
5 use a university or other ID 6 use a GoPass
7 use free senior fare & ID 8 First GoRaleigh trip was on a free fare route

26. How did you get to the stop where you got on this GoRaleigh bus? (Check only one)

- 1 Walked 2 Biked 3 Drove
4 Uber or Lyft 5 Was dropped off by family/friend 6 Other GoRaleigh bus
7 Bus other than GoRaleigh 8 Other _____

27. Please check all Triangle Region bus systems you use in a **typical week**.

- 1 GoRaleigh 2 GoDurham 3 GoTriangle 4 GoCary
5 Chapel Hill Transit 6 Duke Transit 7 Wolfline

28. Do you use a cell-phone? 1 Yes 2 No

a. If you use a cell phone, do you access the internet on it? 1 Yes 2 No

b. Do you have a mobile app for local transit on your cellphone? 1 Yes 2 No

29. In the past 30 days, how often have you used Uber or Lyft in the Triangle region?

- 1 0 not at all 2 1 time 3 2 times 4 3 times 5 4 or more times

30. If you used Uber or Lyft in the past thirty days...

a... did you use both GoRaleigh and Uber/Lyft during the same one-way trip? 1 Yes 2 No

b... did you use Uber/Lyft for a trip you otherwise would have made on GoRaleigh? 1 Yes 2 No

If yes, you did that because? _____

31. Please mark all of the following that apply to you. Are you... (Check all that apply)

- 1 Employed full time 2 Employed part time 3 Unemployed and seeking work
4 Homemaker 5 Student 6 Retired 7 Volunteer position

32. Do you have a valid driver's license? 1 Yes 2 No

33. How many cars or other vehicles are available for your use?

- 0 None 1 2 3 4 5 or more

34. How old are you? _____ Years old

35. Do you identify as... 1 Male 2 Female 3 Prefer not to answer

36. Do you consider yourself to be... (Please Check all that apply to you)

- 1 African American/Black 2 Asian 3 Caucasian/White
4 Hispanic 5 Native American Indian 6 Other: _____

37. What language do you most often speak at home? (Check only one)

- 1 English 2 Spanish 3 Other: _____

38. What is your total annual household income? (Check only one)

- 1 Less than \$10,000 2 \$10,000 to \$14,999 3 \$15,000 to \$19,999
4 \$20,000 to \$24,999 5 \$25,000 to \$34,999 6 \$35,000 to \$49,999
7 \$50,000 to \$74,999 8 \$75,000 to \$100,000 9 More than \$100,000

Comments: _____

Por favor díganos cómo usa GoRaleigh

En los últimos 30 días, ¿cómo calificaría GoRaleigh en los siguientes servicios...

(Circule una calificación por cada pregunta o marque la casilla que indica que no aplica a usted)



Excelente Neutral Muy Malo No lo sé o no lo uso

	7	6	5	4	3	2	1	<input type="checkbox"/>
1. Autobuses funcionan a tiempo	7	6	5	4	3	2	1	<input type="checkbox"/>
2. Frecuencia de servicio entre semana (lun-vier)	7	6	5	4	3	2	1	<input type="checkbox"/>
3. Frecuencia de servicio el sábado	7	6	5	4	3	2	1	<input type="checkbox"/>
4. Frecuencia de servicio el domingo	7	6	5	4	3	2	1	<input type="checkbox"/>
5. Horario de autobuses entre semana (lun-vier)	7	6	5	4	3	2	1	<input type="checkbox"/>
6. Horario de autobuses los sábados	7	6	5	4	3	2	1	<input type="checkbox"/>
7. Horario de autobuses los domingos	7	6	5	4	3	2	1	<input type="checkbox"/>
8. Tiempo total requerido para su viaje diario	7	6	5	4	3	2	1	<input type="checkbox"/>
9. Disponibilidad de servicio a los destinos que desea ir	7	6	5	4	3	2	1	<input type="checkbox"/>
10. Facilidad de transir dentro de GoRaleigh	7	6	5	4	3	2	1	<input type="checkbox"/>
11. Facilidad de transferir entre GoRaleigh y otros sistemas de tránsito del área	7	6	5	4	3	2	1	<input type="checkbox"/>
12. Limpieza de los interiores del autobús	7	6	5	4	3	2	1	<input type="checkbox"/>
13. Limpieza de las paradas y centro de tránsito	7	6	5	4	3	2	1	<input type="checkbox"/>
14. Su sentido de seguridad personal de otros pasajeros en los autobuses	7	6	5	4	3	2	1	<input type="checkbox"/>
15. Cortesía y ayuda de operadores de autobús	7	6	5	4	3	2	1	<input type="checkbox"/>
16. Utilidad de la información de los operadores telefónicos 485-RIDE	7	6	5	4	3	2	1	<input type="checkbox"/>
17. Utilidad de la información impresa, como horarios o folletos	7	6	5	4	3	2	1	<input type="checkbox"/>
18. Formas para pagar la tarifa del autobús	7	6	5	4	3	2	1	<input type="checkbox"/>
19. Calidad del servicio de internet (WIFI)	7	6	5	4	3	2	1	<input type="checkbox"/>
20. Calidad de servicios GoRaleigh en general	7	6	5	4	3	2	1	<input type="checkbox"/>

21. De los servicios en las preguntas 1 a 19 arriba, enumere los tres más importantes ¿Para mejorar?

1 Más importante _____ 2 2do más _____ 3 3er más _____

22. En una semana típica, ¿cuántos días usas GoRaleigh? (Circule solo uno)

0 (Ninguno - No es un pasajero regular de GoRaleigh) 1 2 3 4 5 6 7

23. ¿Cuál es el propósito principal numero UNO para el que usa con mayor frecuencia el autobús GoRaleigh? ¿Es para ir o venir de... (Marque solo uno)

1 Trabajo 2 Escuela/colegio 3 Compras
4 Médico/dental 5 Recreación/evento 6 Otro

24. En comparación con hace un año, ¿actualmente viajas en GoRaleigh...

1 Mas seguido 2 Lo mismo 3 Menos seguido 4 No viajaba hace un año

25. Para su tarifa en el primer autobús GoRaleigh que abordó en este viaje, ¿Usted... (Marque solo uno)

1 pago solo en efectivo por ese viaje 2 compro un pase de un día en el autobús
3 uso un pase de un día comprado con anticipación 4 uso un pase de 7 o 31 días
5 uso identificación universitaria u otra 6 uso un GoPass
7 use free senior fare & ID 8 1er viaje de GoRaleigh fue ruta de tarifa gratis

26. ¿Cómo llegaste a la parada donde subiste a este autobús de GoRaleigh? (Marque solo uno)

1 Caminando 2 Bicicleta 3 Manejo
4 Uber o Lyft 5 Fue dejado por familia/amigo 6 Otro autobús GoRaleigh
7 Autobús que no sea GoRaleigh 8 Otro _____

27. Marque los sistemas de autobús de Triangle Region que use en una semana típica.

1 GoRaleigh 2 GoDurham 3 GoTriangle 4 GoCary
5 Chapel Hill Transit 6 Duke Transit 7 Wolfline

28. ¿Usas un teléfono celular? 1 Sí 2 No

a. Si usa un teléfono celular, ¿tiene acceso a Internet en él? 1 Sí 2 No

b. ¿Tiene una aplicación móvil para transito local en su celular? 1 Sí 2 No

29. En los últimos 30 días, ¿cuanto ha usado Uber o Lyft en la región de Triangle?

1 0 en absoluto 2 1 vez 3 2 veces 4 3 veces 5 4 o mas veces

30. Si usó Uber o Lyft en los últimos treinta días...

a... ¿Usó GoRaleigh y Uber/Lyft durante el mismo viaje de un sentido? 1 Sí 2 No

b... ¿Uso Uber/Lyft para un viaje que de otra forma hubieras hecho en GoRaleigh? 1 Sí 2 No

¿Si sí, lo hiciste porque? _____

31. Marque todo lo siguiente que aplique a usted. ¿Eres tú... (Marque todo lo que corresponda)

1 Empleado de tiempo completo 2 Empleado de medio tiempo 3 Desempleados y buscando trabajo
4 Ama/o de casa 5 Estudiante 6 Jubilada/o 7 Puesto voluntario

32. ¿Tiene una licencia de conducir válida? 1 Sí 2 No

33. ¿Cuántos automóviles u otros vehículos están disponibles para su uso?

0 Ninguno 1 2 3 4 5 o más

34. ¿Cuántos años tienes? _____ Años

35. ¿Te identificas como... 1 Hombre 2 Mujer 3 Prefiero no responder

36. ¿Te consideras... (Por favor marque todo lo que corresponda a usted)

1 Afroamericano/Negro 2 Asiatico 3 Caucásico/Blanco
4 Hispano 5 Indio Nativo Americano 6 Otro: _____

37. ¿Qué idioma hablas con más frecuencia en casa? (Marque solo uno)

1 Inglés 2 Español 3 Otro: _____

38. ¿Cuál es su ingreso familiar total anual? (Marque solo uno)

1 Menos de \$10,000 2 \$10,000 a \$14,999 3 \$15,000 a \$19,999
4 \$20,000 a \$24,999 5 \$25,000 a \$34,999 6 \$35,000 a \$49,999
7 \$50,000 a \$74,999 8 \$75,000 a \$100,000 9 Mas de \$100,000

Comentarios: _____

Appendix B: Rider Comments

GoRaleigh

Route	Comments
1	Some better driver who can be more helpful.
1A	Be blessed.
1A	Need a covered seat at JJ Henderson towers inbound #10. Many elderly and handicapped. Thanks.
1A	None.
1A	Sundays need more frequent bus times!
1A	Yo quisiera que lo normal los dias domingo en la calle leon st
2A	Bus systems should be more frequent and clearer.
2A	Give mike more money.
2A	I stay on Lynn road and the bus doesn't run on Sundays. It stops running at 6:00 PM so I have to walk down highway 70 with kids if we need to go anywhere on Sunday or after 6:00 PM.
2A	None.
2A	The #11 bus is always late. All lines need 24 hour service.
2A	The GoPass was a good idea. Some bus drivers are rude!!
2B	Buses should run normal hours on Sunday and holidays.
2B	Great service GoRaleigh.
2B	Route #6 is often late in the morning coming into the station.
2B	They are useless if you can't get to where you need to go on time and please enforce the no smoking policy at the bus station.
2B	When drivers feel that they can ride by when you are running for the bus.
2B	You're the best!
3	Buses should allow you to catch your connecting bus without missing it. Buses shouldn't leave until All buses have arrived and allowed everyone a chance to transfer.
3	Excellent.
3	Get drivers that want to work and not have attitudes.
3	God bless!
3	Have GoPasses be able to use during weekends.
3	I love GoRaleigh transit.
3	N/A
3	#4 is always late.
3	None.
3	Not all drivers are bad: just a few are rude.
3	Please have service run all day on Sunday. It can be 30 mins or 1 hr. Please have #15 run every 30 minutes Monday-Friday.
3	Should be able to catch connection buses. Should wait at terminal for all buses to arrive. Schedule should match bus arrivals. Hate the split schedules of buses or how one bus changes to another.
3	So far since I've ridden with GoRaleigh everything's good.

3	Some drivers make me mad when I have my music low and to my ear but tell me to turn it off but there is someone in the back some times and someone's listening to rap in the back and it's heard up front but the driver says nothing.
3	The buses are too crowded and usually late.
3	The #3 is always late or doesn't show up. Bus is nasty, always full. Stand up a lot on #3.
3B	Bus drivers need to meet the requirements of the rider. We are not on their time, but ours.
3B	I like the bus system.
4	Bus #11 and #2 are always late. I catch the first bus.
4	Bus #2 and bus #11 always late.
4	Bus is never at the station on time to get to other buses. Always gone, 3 need a bus for Angier avenue.
4	Bus system runs late for #2. Bus drivers don't show any sympathy. Rode the bus for over 5 years nothing was changed with buses running on time.
4	Everything is good.
4	I think GoRaleigh is a very good way of transportation.
4	I think the buses should run on the regular schedule on Sundays.
4	Make #4 run every half hour extended Sunday to midnight. Give grace period for late buses, waiting one hour while my bus was one minute late is ridiculous.
4	Overall positive experience with GoRaleigh. My transit would be greatly benefitted by direct service from Duke Regional to the main Duke University Hospital.
4	Please get rid of the new buses. They are too small.
4	The #6 bus returning to Durham Station weekdays after 4 pm is almost always consistently late, causing us to miss connections.
4	The bus system is fairly good. Some bus drivers can use people skills to avoid unnecessary confrontations. Thank you.
5	Buses are old... And we have experienced some safety issues. But, overall, good way of transportation.
5	Courtesy goes a long way. I would like my bus driver to be courteous to me if I'm being courteous to them.
5	Durham transit really needs to improve on coming on time!!
5	Make improvement on buses to run every 30 minutes on Sundays to the shopping centers.
5	More benches at bus stops.
5	No comment.
5	Thanks!
5	Usually the operator (office) doesn't give the right information about the bus schedule. Also, in Hillsborough the ODX bus does not stop at the Police station.
5K	Don't like the new buses. Don't like the new buses.
5K	Drivers are usually rude, will pull off and leave you if you aren't within a few feet of the sign even though it's obvious you are waiting on the bus.
5K	I feel the transit (Durham) system should be as the transit system in Chapel Hill. I feel that it should be a 24/7 service to the public.
5K	Need to be every five minutes, every route because we are a growing city with a growing need of transportation.

5K	None.
5K	Route #15 needs more stops.
5K	The survey was a tool for customer service. I see improvement.
5K	There are way too many rude bus drivers.
6	Great idea for service.
6	I would like you to provide more frequency of the 6 bus per half hour instead of an hour is better.
6	None.
6B	#6 could use more frequent buses. Turns into #5 and is always late to station around 3-4pm. Men's bathroom at the station *never* stocked with paper towels and rarely clean. Used 2-3 days/week for 7 months.
6B	GoRaleigh.
6B	Great bus.
6B	I would love the opportunity to have four buses running each hour for each bus route.
6B	More bus stops to transfer.
6B	More buses!
6B	Some buses arrive a bit too early which results in missing the bus.
6B	The bus frequency is bad.
6B	The driver personal attendance is terrible. Don't speak at times.
7	Discount fare for 62 years old instead of 65. Drivers ask people to lower volume of music instead of pretending not to hear it.
7	Drivers aren't friendly.
7	GoRaleigh needs to upgrade their services. Service with them has been poor. I try not to deal with GoRaleigh often.
7	Good job.
7	Good job.
7	I don't know.
7	I don't know.
7	I think it's very rude and unsafe to have drivers writing in journals, scratching off lottery tickets, turning around talking/looking at passengers, pouring drinks all while driving (always the same driver).
7	Idk
7	It is ok, occasionally had to tazara tarin when bus was late!
7	It would be nice if the #6 bus could be on time in the afternoon. It's always late. And some of the drivers are rude.
7	Keep it up!
7	Keep up the good work.
7	Makes a long day longer. I had to go grocery shopping. I live where the bus only goes by one-way. Its very inconvenient. Either I have to walk 25 min from a different stop or ride till the wheels fall off.
7	More seating in transit for mobile impaired.
7	N/A

7	Need more bus stop stands. Lowes one is on the wrong side and not lit well. Needs chair for mobility. Deer in woods.
7	Personal.
7	Some questions are not about the bus.
7	The buses are always late. I used the bus for all things. Take my daughter to and from school. Hate people standing up in the front of the bus. Making it hard to get on the bus.
7	This route is long and traffic makes them late sometimes.
7	Very helpful bus drivers. Learned bus routes around downtown and to Charlotte.
7	Your service is very good.
8	Bus drivers need to be more courteous and helpful.
8	Helpful to have someone hand survey.
8	I used the GoLive app and the times are never accurate when I call. Seems like they are going by GoLive also and tell me the same thing that the app is saying. When you ask to speak to a supervisor, they answer not available.
8	Overall, it's dependable.
8	Some drivers are rude and disrespectful and treat passengers any kind of way.
9A	A lot of the drivers are not customer friendly.
9A	Most bus drivers are disrespectful.
9A	Most bus drivers are disrespectful.
9A	Some drivers need customer service training. Not friendly. Buses late all the time.
9A	The Wi-Fi can be better. The buses can be on time more and run later on Sundays.
9B	Better quality of buses. Some buses are over 30 years old. Stop patching up these buses and get new buses. Get a better series. Clean these buses every day.
9B	Bus stop Mount, Level, Church road needs a stop. A lot of people in the area need development.
9B	Clean the seats.
9B	I barely complain but a lot of passengers do complain how sometimes buses are barely on time and I do not like for the seats to be nasty and dirty.
9B	I use like riding the bus but now in my 40's I don't like it the same as earlier years. Got too crowded for not enough drivers and the homeless use it as a bunk to sleep and lounge.
9B	I would really like it if GoRaleigh would extend the route of 9b out to Brier Rose Lane. It is a hassle to walk 15 minutes down the road to catch a bus especially with it beginning to get cold.
9B	No comment.
9B	Our suggestions and serious requests are the cleaning of buses. Thank you.
9B	Thank you! It's not even 7 AM; someone should buy you coffee! More service for far north Durham.
9B	The buses need to be clean and sprayed for bedbugs and lice.
9B	The drivers could be friendlier. Also, at the terminal if your bus is pulling in, the other buses leave before you can transfer to another bus.
9B	There is a stop need at the Dollar General on Lumely and Miami Blvd.
10A	Always on time and good service.
10A	Bus drivers pull in when they get to a bus stop earlier before they supposed to be there. Please be trying to get off work in the afternoon.

10A	Bus drivers popping gum. More responsive to unruly/rude other passengers.
10A	Durham should get the kiosk for passes. The mobile app need work (update). Some of the drivers have bad attitudes.
10A	Gracias el autobus un buen servicio
10A	Valid ID, just not for driving.
10B	Disable the stops. Need some seats and shelters.
10B	I'm homeless.
10B	It would be more convenient for a scanning phone system that I could use because I don't like carrying cash.
10B	Just wondering.... When will the GoRaleigh bus fare become free like our neighbors, Chapel Hill transit?
10B	Keep clean, be on time sometime, once for a mix.
10B	Keep route #10B. Not many use it but I do.
10B	Love the service. Wish it ran more frequently.
10B	None.
10B	Overall GoRaleigh services are great. There is minimal coverage mid-day and the bus routes are not direct for me, thus it takes me a long time to get anywhere or I end up driving/using Lyft more than I like.
10B	Stop talking to drivers (customers).
10N	Cleanliness and safety are biggest concerns. Bums at stops are why I started using Uber.
11	#8 never on time. Always too early or too late and has caused stress at my job. My only means of transport!!!
11	#11 bus is late often!
11	Great job to me GoRaleigh.
11	Great service love them.
11	Solo mi marido trabaja yo cuido mi hijo
11	Text does not work at the stops.
11	The loitering at terminals are completely distracting and deterrent.
11	The # 41 needs to do better.
11	The service is good, just the people on the bus!
11	Would use more frequent service on weekdays and Sundays.
11	More hours for weekdays.
12	#12 at day the bus is always late. Some drivers are not friendly and they speed.
12	Need earlier bus to Chapel Hill UNC especially on Sundays.
12	Need stop by Encore Apt.
12	None
12	Now that's a bit personal.
12	Overall good service.
12	The number #8 bus needs to run every 30 minutes on Saturday for work purposes.
12N	GoRaleigh full of lil funnies.
12N	Please keep bus #15 route going. That bus is my only way to work. I work for Amazon.
12N	Route #12 is usually behind schedule. Leaves last at the station and routinely the last to arrive with Route #11 a close second.

14	The buses need to run the same times 7 days a week.
15	Five years riding the bus to Durham. You guys do a pretty good job. Traffic is bad I know. Please leave route #15 alone or add an express to Durham.
15	Brier Creek needs a sitting area and cover.
15	Buses need more time for Sunday hours past 9 PM and run every 30 minutes on the weekday schedule. Keep drunks off the bus and people cussing and loud music. Drivers need to let passengers know.
15	Can a stop by Shannon Read post office be put up?
15	Durham city buses do a great job.
15	Having GoRaleigh passes available for purchase other than at the station (i.e. Walmart) as well as buses that are down every quarter hour. Otherwise, excellent service.
15	I just feel the #15 bus which I take to work should run every 30 minutes at least during the peak hours. Daily, except Sundays because a lot of us end up late for work if for any reason we miss those two morning runs.
15	If highway is backed up there should be another route the bus can take to remain on time so people can make their other buses.
15	Please continue to run bus #15. It is very useful for those of us who work around that area especially Brier Creek and Amazon. Thank you.
15	The safety is first priority on the bus.
15	Time management for route #15 could be greatly improved if it ran every half hour.
18BCC	Bus drivers need more help. Stop letting people put bags in seats.
18BCC	Could use better on time service.
18BCC	Great service!
18BCC	I have had a few experiences with GoRaleigh buses when I am at the bus stop, on time and the bus has gone past me (4 other passengers) and not stopped.
18BCC	If there is money in the budget, some benches for BCC stops would be nice
18BCC	I'm from the San Francisco Bay area, which has great public transit. I wasn't expecting much when I came here but it's very impressive and I appreciate it a lot.
18BCC	N/A
18BCC	Student
18BCC	The rider app functionality should be improved (transloc). Buses often don't show up. Also, the BCC time predictors are the research drive, roundabout ave unreliable (pauses before turning around for unpredictable length of time)