An Onboard Survey of GoDurham Customers

2019

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Executive Summary

Introduction

In mid-October 2019, CJI Research conducted an onboard survey of GoDurham customers. The GoDurham survey includes 020 responses and has a margin of error of +/-3.2% at the 95% level of confidence.

The 2018 survey was intended to provide a baseline for comparison to later annual surveys and is compared to the 2019 data in several sections of this report. To the extent that differences exceed the margin of error (3.2%), they can be considered meaningful. Only for changes beyond the margin of error will the 2018 percentage be noted for comparison.

PERCEPTION OF MAJOR SERVICE IMPROVEMENTS

- o The survey obtained customer ratings of overall GoDurham 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 GoDurham service overall as 7 was 27% in 2018 and 24% in 2019. The difference is within the margin of error and therefore is of no special concern. However, this score should be watched for the direction of change in the 2020 survey. Another 22% in both years rated service as 6 on the same scale, meaning that the total rating service as excellent or very good was 49% in 2018 and 46% in 2019.
- o In 2019, top rated elements with scores of 6 or 7 include:
    - Fare medium options (54%)
    - Weekday service hours (51% in 2019, but 56% in 2018, a significant change)
    - Ease of transfer within the GoDurham system, usefulness of printed information, and usefulness of telephone operators (55% each)
- o Three operational aspects of service with more than 45% of customers giving the scores of 6 and 7 deserve note:
    - Weekday service hours (52%)
    - Ease of transfers within the GoDurham system (49%)
    - Weekday service frequency (48%)
- o When asked to identify areas for improvement as among their top three:
    - "Buses running on time" is by far the most frequently cited aspect of service to improve. In 2018, it was cited by 64% of customers as in the top three most important to improve among the nineteen specific aspects of service examined. However, in 2019 that concern had declined precipitously to 55%, an indication of improved perception of on-time performance, although, paradoxically, the percent giving top scores to on-time performance remained statistically unchanged.
    - Second most important in this sense is "Bus interior cleanliness" (26%).
    - Third – weekday service frequency (23%).
    - Fourth most important to improve was Sunday service frequency (35%)
- 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 three priorities that would have a significant impact on the overall GoDurham service rating: Total average time to make a trip, buses running on time, and service to all destination desired (coverage). These are the same as the 2018 priorities.

CJI

- Trip purpose is primarily oriented to employment (62%) and school/college (14%).
- Demographics
  - GoDurham provides a key support for employment and education. Of all GoDurham customers, 44% are employed full time and another 20% part time. Another 21% are students, for a total of 85% of customers being employed or students.
  - 65% of GoDurham customers identify themselves as African-American, 16% identify themselves as Caucasian/White, 6% Hispanic, 7% Asian, 1% Native American, and 4% "Other."
  - Like most bus systems in the United States, the ridership of GoDurham is young, with 48% younger than thirty-five.
  - Unlike the customer base of most transit systems in the United States, approximately the same percentage (50%) of riders identify as women as men (49%). (1% preferred not to answer.) Generally in the United States, the ridership of systems consists of significantly more women than men.
  - Similar to the ridership of many bus systems, many GoDurham customer households report that they have extremely low household incomes. In this survey, 39% report income of less than $10,000 and only 11% report household incomes of $50,000 or more.
  - Customers are quite transit dependent, with 64% reporting that they have no vehicle available to them. This represents a significant, though, marginal decrease from the 68% reporting in 2018 that they lacked access to a vehicle.
- Travel characteristics
  - 41% of GoDurham customers say they are using GoDurham more often than in the previous year and 13% say they began riding only in 2019. Only 9% say they are riding less often now.
  - When using other systems in the Triangle Region, GoDurham customers are more likely (17%) to use GoTriangle than the other systems.
- Ridesharing
  - 49% have used Uber or Lyft at least once in the thirty days prior to the survey.
  - Of the 49% using Uber or Lyft in the previous thirty days, 42% (or 21% of all GoDurham customers) used Uber or Lyft to replace a GoDurham trip.
  - Of that same 49% who have used Uber or Lyft, 31% (or 15% of all customers) have used them as part of a GoDurham trip.
- Fare media
  - The largest percentage of GoDurham customers (32%) boarded with a day-pass purchased either on the bus (21%) or ahead of time (11%).
  - Twenty-nine percent (29%) paid their fare in cash.
  - Thus, combining the cash fare and the day-pass purchase on the bus, a total of 40% make a fare transaction on the bus.
  - 52% 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 to a mobile phone by 56% of GoDurham customers.

o The use of transit apps remains inversely related to age. Although the use of cellphones is still somewhat age-related, 94% of those 65 or older compared to 99% of those 18-24 use a cell phone. Thus, the age difference is unimportant.

o However, the use of a transit app is inversely age-related to an important degree. For example, 94% of customers sixty-five or older use a cell phone, but only 40% of that group uses a transit app. Comparable figures for those eighteen to twenty-four are 99% and 64%, respectively. Yet, it is interesting that even in the older group, 40% of the customers use a transit app.

Introduction and Methodology

Background

As part of a regional customer satisfaction measurement program, CJI Research, LLC conducted a survey of customers onboard GoDurham buses from October 16 through 19, 2019. Similar surveys were conducted during the preceding and following weeks with customers of GoTriangle, GoCary, and GoRaleigh.

The questionnaire used in the survey was initially developed by Hugh Clark of CJI Research, LLC, refined by 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.

Methods: How the Survey Was Conducted

SAMPLE

A random sample of runs was drawn from a list of all GoDurham runs. This initial sample was examined to determine whether the randomization process had omitted any significant portion of the GoDurham 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 GoDurham survey includes 920 respondents and has a margin of error of +/-3.2% 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 920 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 (GoDurham, GoTriangle, GoRaleigh, and GoCary) calls for conduct of a much large sample in one subsystem every three years. GoDurham is scheduled for such a survey in 2020. (GoRaleigh's was conducted in 2018, and GoTriangle and GoCary were conducted in 2019.)

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 staff. Surveyors wore

smocks identifying them in large print as "Transit Survey" workers. This uniform helps customers visually understand why a stranger (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 105 trips were sampled and recorded in this manner.

PARTICIPATION RATES

Completion Rates on GoDurham Onboard Survey, 2019

A total of	2,570	persons were riding during the surveyed trips and had a chance to participate if of age and able to speak English or Spanish	
Of those on the bus during the surveyed trips:	147	appeared to be younger than 16 and were not asked to participate	6%
and	59	customers spoke a language other than English or Spanish	2%
and	863	refused outright	34%
and	476	said they had already completed the survey (possibly on another system)	19%
and	1,025	accepted the survey form with the apparent intention of completing it	40%

			% of the effective distribution
Thus,	1,025	customers represent, the total "effective distribution, " i.e., the raw sample	
Of the effective distribution	105	Ultimately failed to return the survey they had accepted	10%
and	893	Completed the survey on the GoTriangle bus	87%
and	27	completed the survey and returned it by mail or to an operator on another bus	2.6%
Thus, finally	**920**	**Completed the survey and constitute the final sample**	90%

Key summary statistics	Of all persons on board the sampledtrips, this represents:	36%
.	Of all English or Spanish speaking adults riding on a surveyed vehicle, this represents:	43%
	Of all the customers on sampled trips who accepted a questionnaire, this represents:	90%

Of the 920 GoDurham respondents:
- 680, or 76% completed all questions in the survey.
- Another 133, or 15% completed all but the final question, household income. Income questions always have a high refusal rate.
- Therefore, 813 completed all questions or all but the income question.
- This means that 88% of the sample answered at least 87% of the questions

In the analysis, those who did not respond to a question are eliminated from the computation of percentages and mean scores 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 GoDurham customers, 66 customers, or 7% of the effective final unweighted sample identified themselves as Hispanic, but only 44, or 5% of the completed questionnaires were completed in Spanish. Stated in another way, roughly one-third 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 GoDurham 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 GoDurham

Riders were asked on how many days in a typical week they use GoDurham. As shown in Figure 1, fewer riders in 2019 than in 2018 used GoDurham daily. This is surprising and somewhat paradoxical given that frequent riders contribute greatly to overall ridership, and ridership is know to have increased since 2018 (see Figure 4).

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For purposes of further analysis, the customers are grouped into three sets, or "segments," depending upon how frequently they use GoDurham. We refer to them as:

- One- to three-day: Those who use GoDurham one, two, or three-days a week (23%)
- Four-to-five-day: Those who use GoDurham four- or five-days a week (37%)
- Six-to-seven-day: Those who use GoDurham six-or-seven-days a week (40%)

Figure 1 Frequency of Using GoDurham

Weekly Frequency of Using GoDurham

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.

Figure 2 Compressed Measure of Frequency of Using GoDurham

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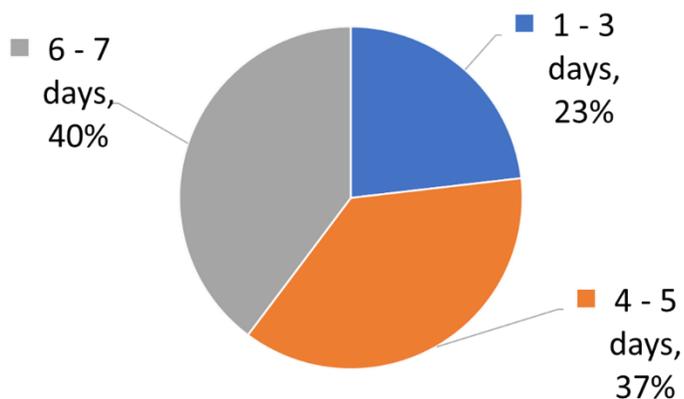
Other breakdowns may also be of interest. On request, any breakdowns can be provided quickly because the survey data is maintained live to meet such requests. Such breakdowns might include level of dependency on transit, trip purpose, or demographics such as age or income. All are easily available on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

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

Service Use Compared to Last Year

	2019	2018	1 - 3 days	4 - 5 days	6 - 7 days
■ Did not ride a year ago	13%	18%	12%	15%	12%
■ Less often	9%	10%	21%	8%	4%
■ The same	37%	37%	40%	39%	33%
■ More often	41%	35%	26%	38%	51%
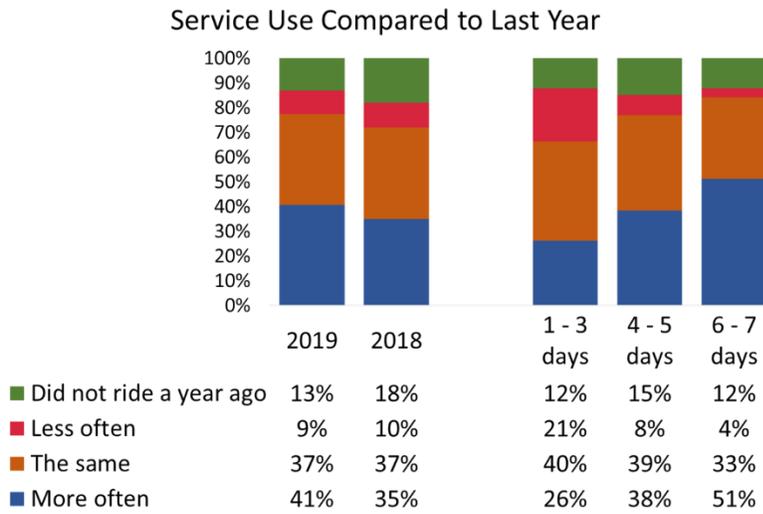
Riding Frequency Compared to a Year Ago

Overwhelmingly, respondents say that they are riding either with same frequency (37%) or more often (41%) than a year ago, and 13% say they are new riders. Only 9% say they are riding less often. while the most frequent riders are more likely (51%) than the other segments to say they are riding more often.

The percentages each year saying they had not been GoDurham riders in the previous year might lead one to conclude that there was a massive increase in ridership. That is not the case as ridership data in Figure 4 and Figure 5 show. Therefore, we have to 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. Because this is a survey of current riders, we cannot know from these results what percent of last year's riders ceased riding GoDurham entirely, nor is there any simple means of accessing former riders in a systematic manner[1].

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 GoDurham.

Figure 4 GoDurham Ridership, 2012 to 2019

Trips per year on GoDurham
(Source: GoDurham internal Planning Records)
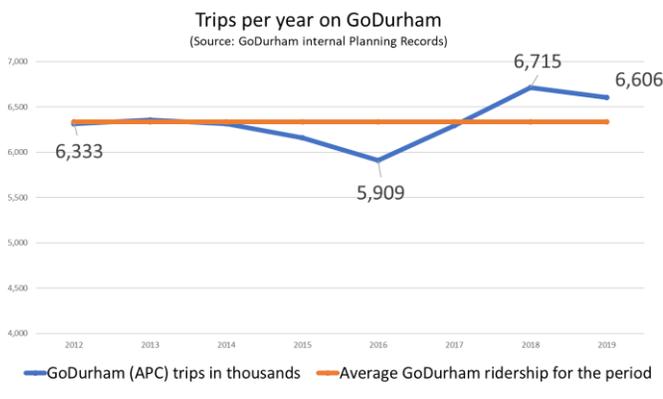
Ridership Trends

Let us put the results reported in Figure 3 into perspective. Figure 4 is not derived from the survey, but from internal GoDurham ridership data. Such ridership numbers are generally derived from counting of passengers by APC's (automatic passenger detectors), farebox, or simple manual passenger counts.

Asking current riders "This year, are you riding more often or less often or the same as last year?" addresses individual and collective rider behavior, but not the net effect on the total system of new riders joining and others leaving the GoDurham system. Therefore, the finding illustrated by Figure 3 that 13% of GoDurham riders report that they are new riders and that 41% say they are riding more in 2019 than in 2018, does not reflect the actual changes in GoDurham ridership because it does not account for those who have ceased to use GoDurham altogether, while the ridership figures do account for them.

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[1] It would not be a random or representative sample, but it would 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 5 GoDurham and National bus ridership, 2012 - 2019

GoDurham and bus ridership nationally as a percent of 2012 ridership
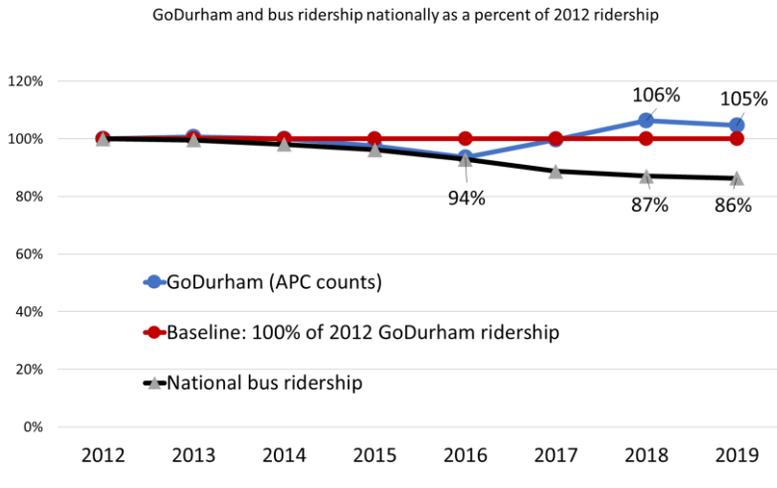
The ridership data shows a very slight 1% decline from 2018 to 2019, but a 5% increase from ridership of 2012. The latter was growth from 6,333,000 trips to 6,606,000 trips. In the world of contemporary bus transit, that is robust growth.

GoDurham ridership has also exceeded bus ridership trends nationally. Nationally, as Figure 5 shows, bus ridership has declined to 86% of its level in 2012.

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

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

- Getting to or from work is the primary trip-purpose, with 62% of customers citing that as their most frequent trip purpose.
- School and college trips make up another 14% of trips. Thus, GoDurham is carrying a large proportion of its customers (76%) either for work trips or for school trips, an indication of its economic impact through the labor force.
- Another 11% of the customers indicate that they use GoDurham to make shopping trips, a set of trips with immediate economic impact.
- Medical and recreational trips account for 6%

Figure 6 Trip Purpose

Main Trip Purpose for Using GoDurham Buses

	2019	2018	1 - 3 days	4 - 5 days	6 - 7 days
Recreational Event	2%	2%	4%	1%	1%
Medical/Dental	4%	5%	6%	4%	3%
Other	7%	4%	11%	4%	7%
Shopping	11%	9%	23%	5%	11%
School/College	14%	13%	15%	17%	11%
Work	62%	67%	41%	69%	67%
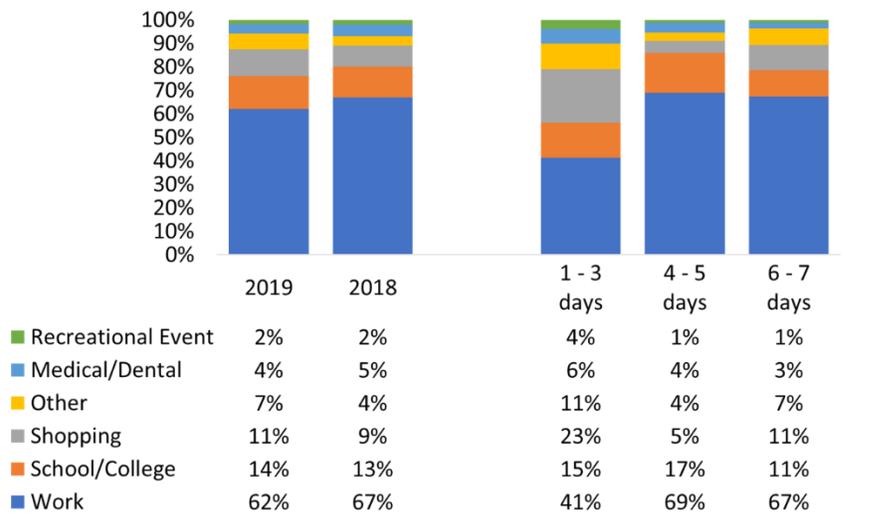
More than three-fourths of the six-to-seven-day riders (67%) and almost three-fourths of the four-to-five-day riders (69%) had made work-trips. The one-to-three-day riders are more likely than the other segments to have used GoDurham for each of the non-work purposes. It is interesting, however, that even among these least frequent customers, work trips are common (41%). They must either be working part-time or using different modes on different days.

The percentage of work trips decreased from 67% in 2018 to 62% in 2019. The difference in trips for work is made up for by the increase of 5% in trips for shopping and "other." This change is statistically significant. However, it could be simply a matter of minor scheduling changes or unintended changes in time of day survey data collection occurred on a few routes. It will bear watching in 2020.

Figure 7 Employment and Trip Purpose

Trip Purpose by Employment, GoDurham

	Full time	Part time	Unem-ployed; seeking job	Home-maker	Student	Retired	Volunteer position
Other	2%	2%	24%	23%	5%	6%	38%
Recreation-Event	1%	1%	6%	0%	3%	7%	0%
Medical-Dental	0%	1%	6%	17%	0%	22%	8%
Shopping	3%	7%	31%	23%	16%	57%	0%
School-College	3%	13%	6%	4%	70%	2%	0%
Work	91%	76%	27%	34%	6%	6%	54%
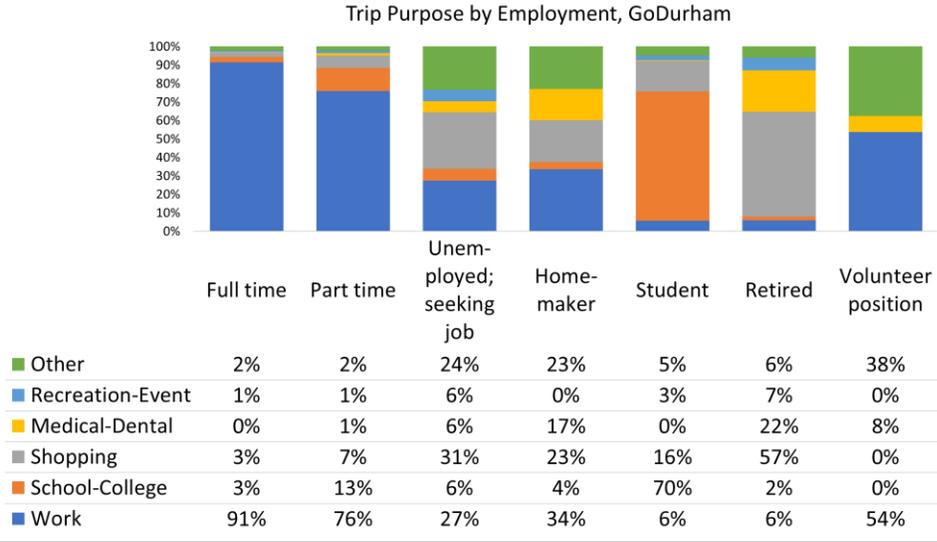
Employment and Trip Purpose

That employment would be closely related to trip purpose would appear self-evident. However, there are some variations. As expected, 91% of those employed full time use GoDurham to go to or from work, while 76% of part-time workers are headed for work, but another 13% are headed for school. These are as anticipated.

Less expected is that 27% 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, 6% of retirees say they are making a work trip, probably working part time but still considering themselves to be primarily retired. Many homemakers too (34%) 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 (6%) or to school (70%).

Mode to the Bus Stop

Most people, 80%, most often simply walk to the nearest bus stop. This is unchanged since 2018.

The least frequent riders are less likely than others to walk, but they have no single dominant alternative mode to the stop.

Figure 8 Mode to the GoDurham Bus Stop

How Passengers Got to Bus Stop for Current Trip

	2019	2018	Days:	1 - 3	4 - 5	6 - 7
Drove	1%	1%		1%	1%	0%
Another mode	1%	1%		3%	0%	1%
Biked	1%	2%		2%	1%	1%
Uber/Lyft	2%	2%		2%	2%	3%
Dropped off	3%	2%		3%	2%	3%
Bus, not GoDurham	6%	6%		7%	4%	6%
Other GoDurham bus	7%	6%		7%	7%	7%
Walked	80%	80%		72%	80%	83%
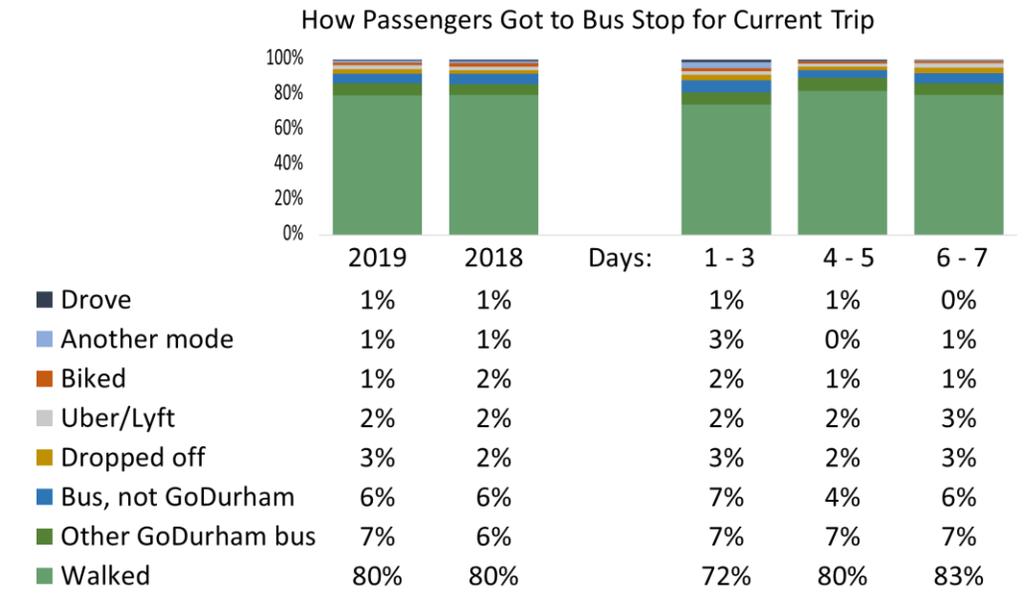
Figure 9 Access Mode – GoDurham and Nationally (GoDurham Survey and APTA, op cit)
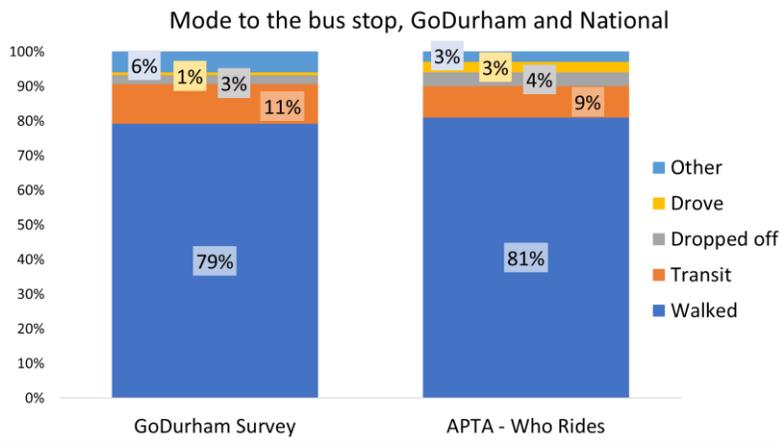
Access Mode – GoDurham and Nationally

GoDurham is very much in line with national norms as they relate to the mode used to get to the bus stop. Nationally, 81% of bus system riders walk to their stops, while only slightly fewer (79%) of GoDurham riders do so. While 9% of bus riders nationally, use public transit to access the stop they used for the trip on which they were surveyed, the same is true for 11% of GoDurham

riders.

Use of Area Bus Systems

Respondents were asked which of the transit systems in the region they use in a typical week. Because they can use multiple systems, the sums of the percentages in Figure 10 exceed 100%.

As expected, most riders (90%) said they use GoDurham in a typical week. Conversely, this suggests that about 10% do not use GoDurham every week and were

Figure 10 Bus Systems Used in a Typical Week

	2019	2018	Days:	1 - 3	4 - 5	6 - 7
■ Wolfline	1%	0%		2%	1%	1%
■ GoCary*	2%	1%		3%	1%	2%
■ Duke Transit	6%	4%		4%	6%	7%
■ Chapel Hill Transit	7%	4%		7%	7%	8%
■ GoRaleigh*	12%	7%		8%	11%	16%
■ GoTriangle*	17%	12%		11%	17%	21%
■ GoDurham*	90%	84%		83%	92%	92%

* Includes senior and disability Access for GoTriangle, GoDurham, and GoRaleigh and GoCary Door to Door

encountered in the survey in one of their multi-system trips, or that they use GoDurham only occasionally, and not in a "typical week."

For all segments in 2019, GoDurham customers use GoTriangle more than any other local system (17%). 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.

It is not surprising that Chapel Hill Transit and Duke Transit share significantly in the GoDurham customer base (total of 13%) because of all GoDurham customers, 21% are students.

Figure 11 GoDurham Fares at the Time of the Survey

	Full Fare	Discount Fare
Single Ride Fare	$ 1.00	$ 0.50
GoDurham Day Pass	$ 2.00	$ 1.00
GoDurham 5-Day Pass	$ 8.50	$ 4.25
GoDurham 7-Day Pass	$ 12.00	$ 6.00
GoDurham 31-Day Pass	$ 36.00	$ 18.00

GoDurham Fares at the Time of the Survey

The table in Figure 11, copied from the GoDurham website[2], 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 GoDurham customers (32%) boarded with a day-pass purchased either on the bus (21%) or prior to boarding (11%). Twenty-nine percent (29%) paid their fare in cash. Thus, combining the cash fare and the day-pass purchase on the bus, a total of 61% make a fare transaction on the bus.

The other customers used free or pre-paid passes of some other type. This includes 16% using the GoPass which is free to them, 6% a senior fare and ID, and 7% a university ID, also free to the user. Two percent of riders rode on a free fare route, and 12% used a seven or thirty-one-day pass. The six to seven riders are less likely to use cash and more likely to use a pass. However, many more (total of 37%) used a day pass rather than a longer term pass that might have provided a greater discount (17%).

Figure 12 Fare Medium Used

Fare Medium Used for Current Trip

	2019	2018	1 - 3 days	4 - 5 days	6 - 7 days
First trip was free fare route	2%	0%	3%	2%	2%
Free senior fare & ID	6%	0%	8%	4%	6%
University/other ID	7%	11%	10%	8%	5%
Day pass bought previously	11%	12%	8%	10%	13%
7 or 31 day pass	12%	11%	9%	9%	17%
GoPass	16%	15%	16%	18%	15%
Bought day pass on bus	21%	22%	15%	21%	24%
Paid cash fare for this trip only	29%	29%	33%	31%	25%

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[2] https://godurhamtransit.org/godurham-fares-passes

Figure 13 Income and Type of Fare

Income and Type of Fare Paid

	Less than $20,000	$20,000 to $49,999	$50,000 or more
■ Cash	30%	31%	22%
■ Day pass	33%	30%	26%
■ 7 - 31 day pass	13%	9%	16%
■ GoPass or University ID	18%	24%	42%
■ Free senior fare & ID	7%	5%	0%
■ First trip was on a free fare route	3%	2%	2%
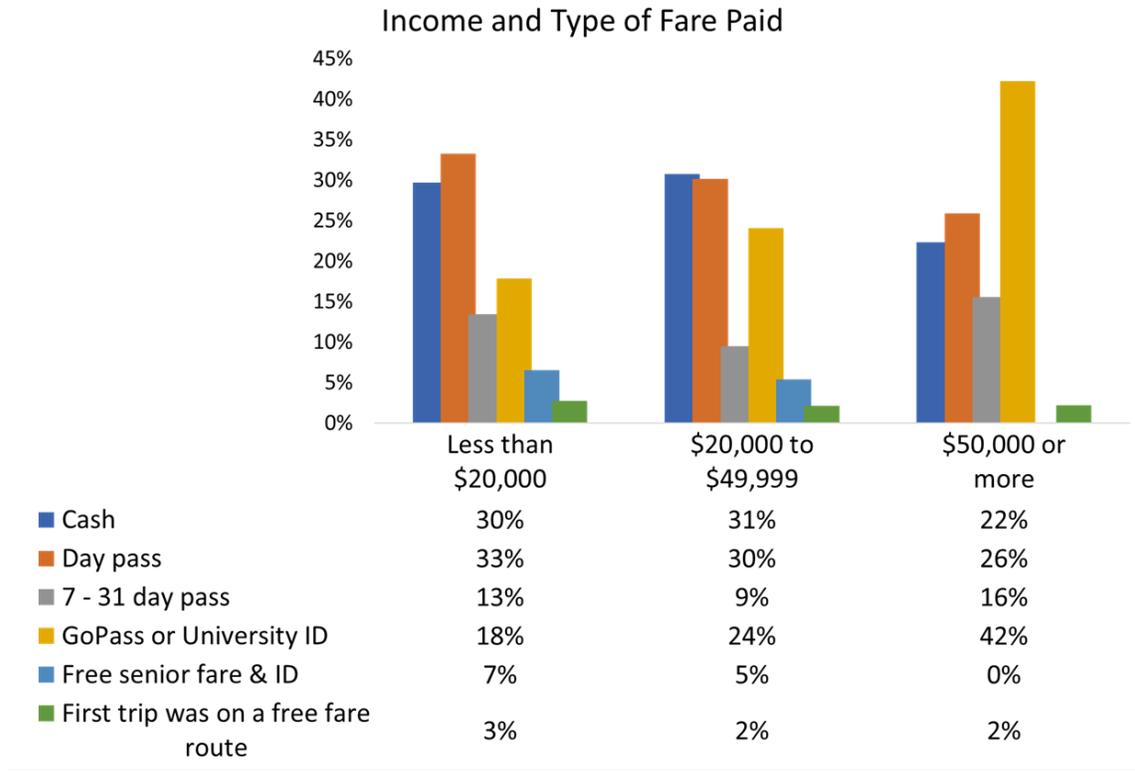
Income and Fare Medium Used

The use of cash fares and day passes is related to the level of household income. On GoDurham, almost one-third (30% to 31%) of passengers with household income of less than $50,000 use cash, while fewer (22%), of those with incomes of $50,000 or more use cash. The percentages in each income groups using a day pass are similar to the use of cash: 33% for those with incomes under $20,000, 30% for those with incomes from $20,000 to $49,999, and 26% for those with incomes of $50,000 or more. The higher income riders, however, do not use a higher priced pass, but rather are more likely to receive a subsidized pass in the form of either a GoPass or a university ID.

In many transit systems a decade or more ago, when the day-pass was not yet widely offered, the primary discounted pass option was often a monthly pass and sometimes a seven-day pass. Lower income riders rarely could afford to utilize the fare discount offered by such passes because of the challenge posed by their very limited cash flow, and the risk of committing cash in advance for a month's or even a week's transportation. Thus, there was a strong tendency for lower income riders to pay full cash fares, and for discounted passes to be used primarily by those with higher incomes. With the advent of the day pass, however, that inverse relationship that years ago often appeared in passenger surveys between the use of discounted multi-trip pass fare media and income has weakened to the point of almost disappearing.

The day pass rarely offers as deep a discount as a longer term pass, but it imposes little risk, no substantial cash flow problem, and does save money for the user. Also, if pre-purchased before boarding, or at the second and subsequent uses if purchased on the bus, it also saves boarding time for the system, thus providing both a social and an operational benefit.

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

Having Valid Driver's License and Vehicle Available
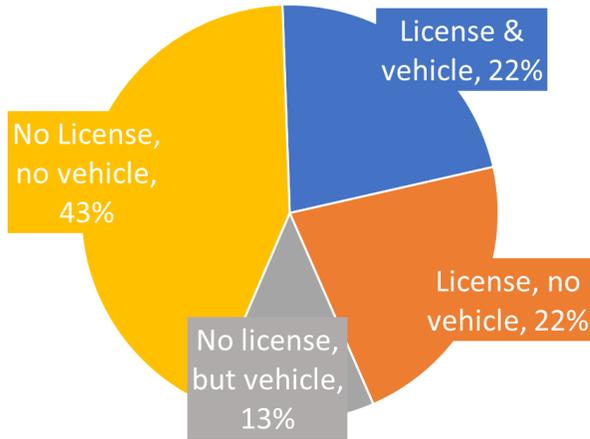
Three Aspects of Mode Choice

Having a choice of local transportation mode depends on both availability of a vehicle and on having a valid driver's license. Figure 14 indicates that:

- a large minority of customers (totaling 44%) hold a valid license and
- 35% of customer households have a vehicle available and 65% do not.
- Only 22% have both a valid license and vehicle available.

National Comparison of Vehicle Availability

Nationally, the meta analysis conducted by CJI Research, LLC, for APTA of more than 200 onboard surveys indicated that among bus customers, 61% lacked a vehicle for the trip they were making when surveyed. At 65%, this places GoDurham only slightly above the national norm in this respect.

Figure 15 Vehicle Availability (APTA, "Who Rides Public Transportation")
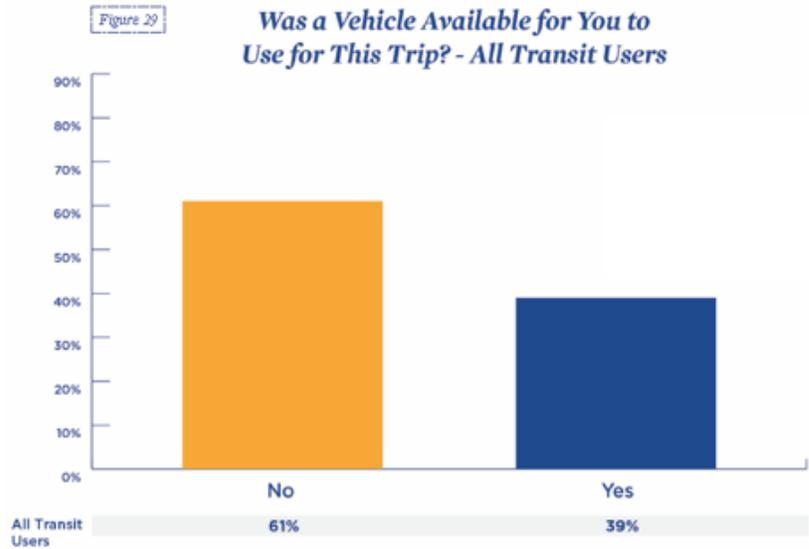
Figure 16 Availability of a Vehicle

Vehicle Availability

	2019	2018		1 - 3 days	4 - 5 days	6 - 7 days
🟨 Three or more	4%	2%		9%	4%	3%
⬜ Two	6%	7%		9%	9%	3%
🟧 One	25%	23%		31%	32%	16%
🟦 No vehicle	65%	68%		51%	56%	78%
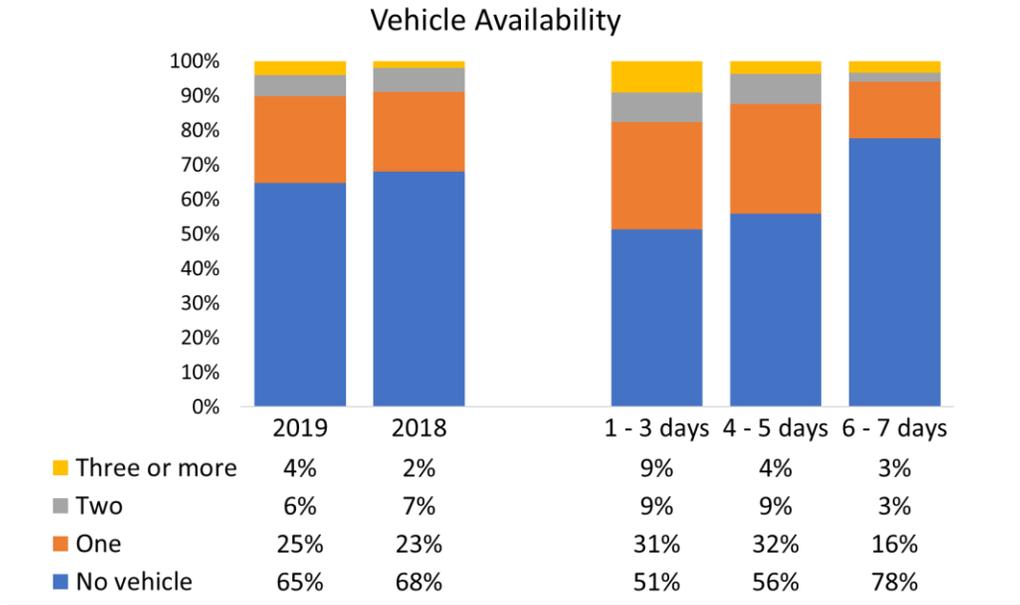
Availability of a Vehicle

GoDurham customers are quite transit dependent, with 65% reporting that they have no vehicle available to them. This represents a significant, though, marginal decrease from the 68% reporting in 2018 that they lacked access to a vehicle.

Customers who use GoDurham four or five days a week are more likely than others (49%) to have a vehicle available. We can assume that this is related to their slightly higher income and their resulting ability to afford a vehicle. Those who use GoDurham six to seven days a week are least likely to have a vehicle available (22%).

Figure 17 Use of Uber or Lyft in Past Thirty Days

Use of Uber or Lyft in Past Thirty Days

	2019	2018		1 - 3 days	4 - 5 days	6 - 7 days
Four or more	20%	20%		13%	18%	25%
Three times	9%	7%		7%	9%	10%
Twice	10%	10%		12%	10%	9%
Once	10%	9%		14%	11%	7%
Not at all	51%	53%		53%	51%	50%

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 GoDurham customers, 51% say they have not used car sharing services in the Triangle Region during the past thirty days. Conversely, this means that 49% have used one of the car-sharing services, including 10% who have used them only once, 10% twice, and 29% who have used them three or more times[3].

The use of ridesharing services more than twice in thirty days is directly related to the frequency of using GoDurham. While 20% of the one to three day riders and 27% of the 4-4 day riders used Uber/Lyft three or more times, that was true of 35% of the six to seven day riders. Their higher frequency of using GoDurham is indicative of either a greater overall need to make local trips, or their greater dependency on modes other than their own vehicles, or a combination of the two.

Figure 18 Use of Uber and/or Lyft to Supplement or Replace a Trip on GoDurham

Use of Ridesharing Services in Relation to GoDurham
[Percentages are on only those (49%) who have used Uber or Lyft]

Replaced a GoDurham trip	42%
Did not replace a GoDurham trip	58%
Combined with a GoDurham trip	31%
Did not combine with a GoDurham trip	69%
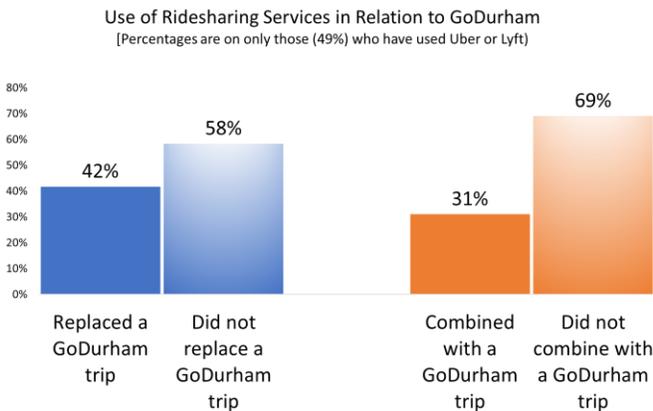
Use of Uber and/or Lyft to Supplement or Replace a Trip on GoDurham

Figure 17 indicates that 49% of GoDurham customers had used Uber or Lyft in the past thirty days. How have those trips interacted with GoDurham? Figure 18 provides basic answers.

Of the 49% of GoDurham customers who have used Uber or Lyft, 42% say they replaced a GoDurham trip with the ridesharing trip. This amounts to 21% of all GoDurham customers (i.e. 42% of 49% = 21%).

Of the 49% of customers who have used Uber or Lyft, slightly more than one-third, 31%, say they combined a ridesharing trip with a GoDurham trip. This amounts to 15% of the ridership (i.e., 31% of 49% = 15% of the ridership) who have used a ride-sharing service, say that they have used it as part of a bus trip.

We do not know for what purpose some riders have combined a rideshare trip with a GoDurham trip. However, in Figure 8 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 during their GoDurham trips. 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.

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[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.

Mobile Communication

Figure 19 Use of Cell and Smart Phones

Use of Cell and Smart Phones

Use of a Mobile App for Local Transit

	2019	2018
■ Does not use cellphone	4%	6%
■ Uses cell phone but no transit app	41%	47%
■ Uses cellphone with a transit app	55%	47%
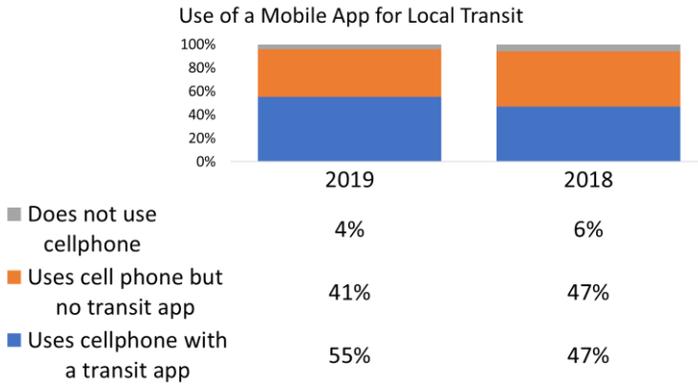
Among GoDurham customers, cell phone ownership is high, but not quite universal, with 94% of customers indicating they use a cell phone. Fifty-six percent (56%) of customers use a transit app on their phones.

The number of customers using a transit app indicates that while close to half of GoDurham 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 primary communications channel to the GoDurham ridership is illustrated by the results shown in Figure 20. That figure demonstrates that the use of such apps is quite closely related to age with a general downward trend in utilization as age increases. This means that unless something occurs to change this relationship between age and the use of mobile technology for transit, it will take at least several years for transit apps to become the primary source of information for a substantial majority of GoDurham customers.

Figure 20 Age and the Use of Mobile Transit App

Age and the Use of a Transit App

	16-17	18-24	25-34	35-44	45-54	55-64	65 or older
■ Does not use cellphone	0%	1%	3%	3%	8%	8%	6%
■ Uses cellphone, not transit app	40%	35%	42%	41%	46%	48%	55%
■ Uses cellphone with transit app	60%	64%	55%	56%	46%	44%	40%
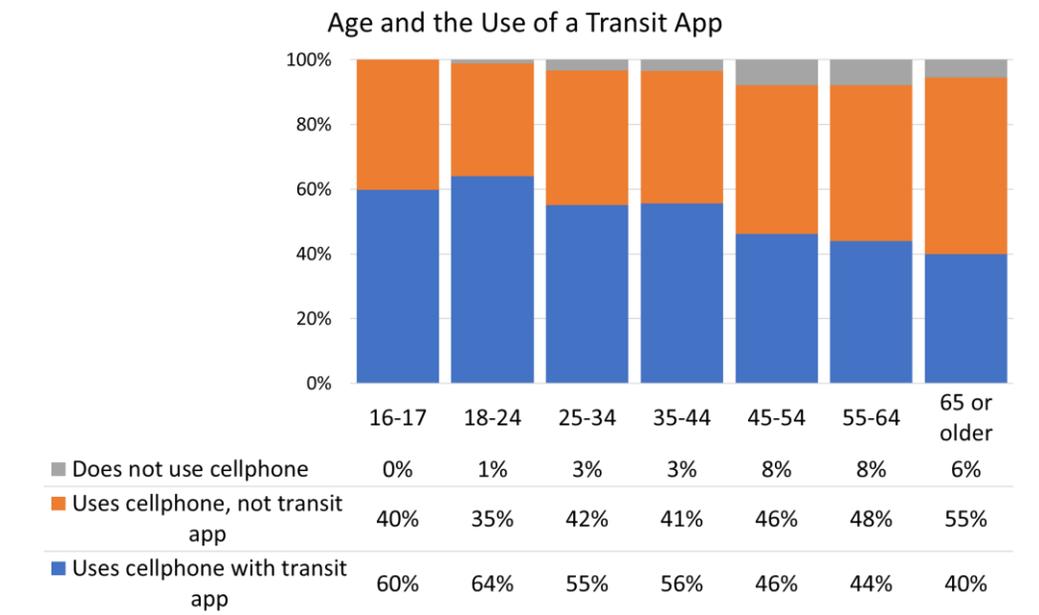
Demographics

Figure 21 Employment of Customers

Employment - Multiple responses included

	2019	2018		1 - 3 days	4 - 5 days	6 - 7 days
■ Volunteer position	3%	4%		3%	3%	4%
■ Homemaker	7%	4%		5%	6%	9%
■ Retired	8%	8%		10%	6%	8%
■ Unemployed;seeks job	8%	10%		8%	6%	10%
■ Part time	20%	19%		25%	20%	17%
■ Student	21%	24%		25%	19%	21%
■ Full time	44%	48%		28%	49%	48%
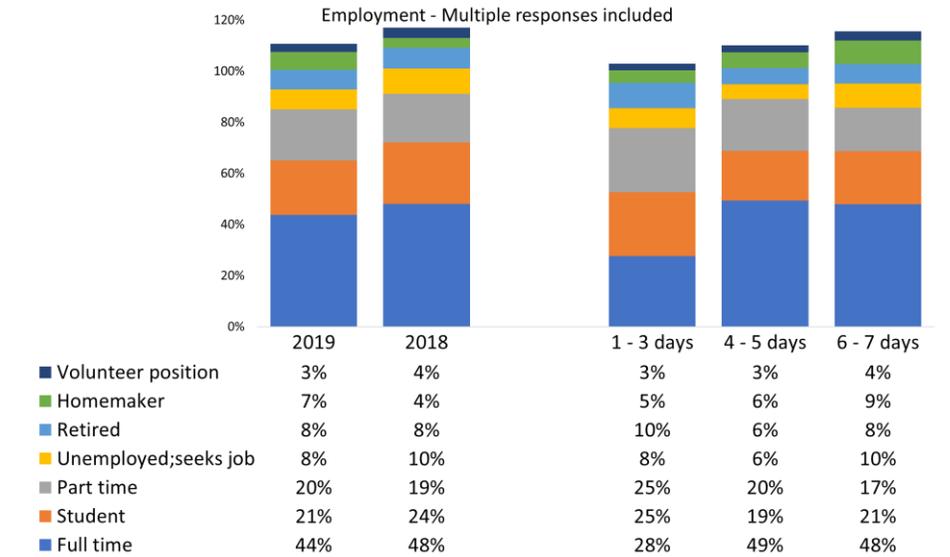
Employment of Customers

Respondents were asked about their employment. In 2019, a total of 44% of GoDurham customers reported being employed full time, while another 20% said they were employed part time, and 21% said they are students. Although it is not displayed in this chart, 41% of student riders are employed full or part time and they comprise 10% of all GoDurham riders.

Full time employment is statistically the same among the six-to-seven-day riders (48%) and the four-to-five-day riders (49%), both considerably more likely than the one-to-three-day riders (28%). On the other hand, the one-to-three-day riders are more likely to be students (25%) than the four-to five riders (19%) or the six-to-seven-day riders (21%).

Figure 22 Unemployment Rates in NC, Wake, Durham, and Orange Counties
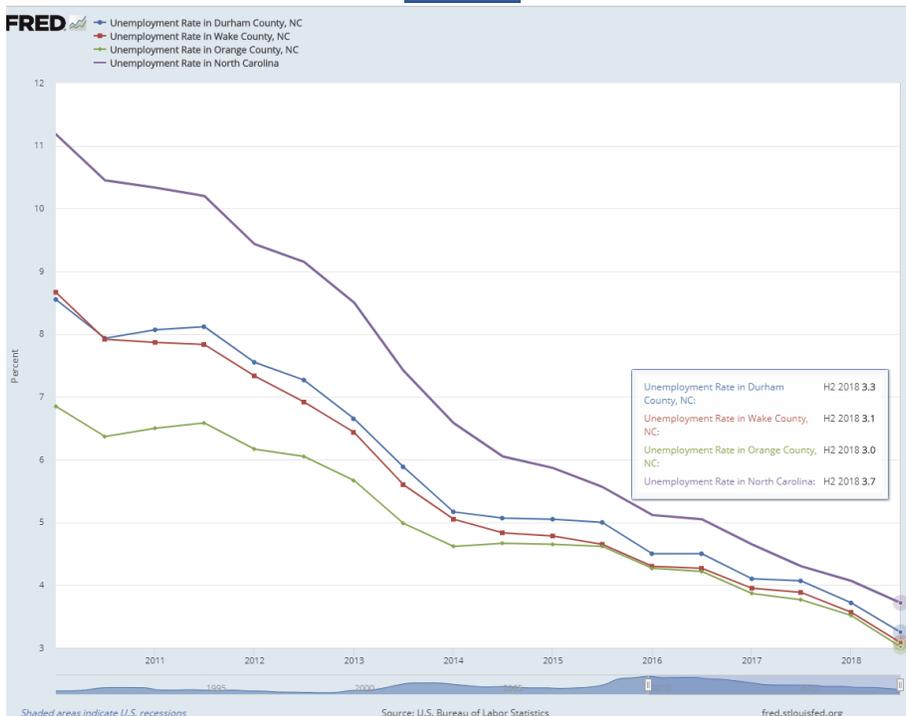
Source: U.S. Bureau of Labor Statistics, Unemployment Rate sin North Carolina [NCUR], and selected NC counties, retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/NCUR, February 15, 2019.

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

In the survey, 8% indicated that they consider themselves unemployed. We also saw in Figure 7 that 27% 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 2% of the ridership, leaving 6% 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 22. At the time of the survey, the rate was 3.7% statewide and 3.3% in Durham County. If 4% of the

riders are "unemployed" but working and thus not counted in the federal figures, this would put the rate among riders at approximately 6%, 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 85% of GoDurham 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 GoDurham as a major factor in labor mobility and emphasizes its critical economic role in supporting the local labor force.

Figure 23 Income of Rider Households

Household Income

	2019	2018		1 - 3 days	4 - 5 days	6 - 7 days
■ $50,000 and above	11%	8%		17%	13%	6%
■ $35,000 to $49,999	8%	7%		5%	12%	5%
■ $20,000 to $34,999	26%	26%		23%	31%	23%
■ $10,000 to $19,999	17%	17%		11%	15%	21%
■ Less than $10,000	39%	42%		44%	29%	45%
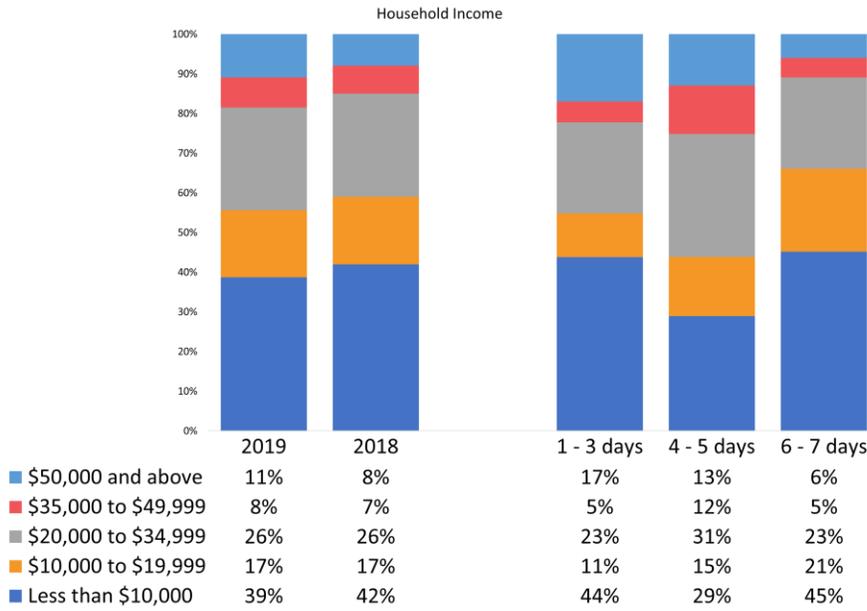
Income of Rider Households

As is true of riders in many transit passenger surveys of other systems, most GoDurham riders have very low household incomes. In 2019, 39% report household incomes of less than $10,000. Another 17% report their incomes as ranging from $10,000 to just under $20,000, while 45% report incomes of $20,000 or more.

The income distribution varies somewhat among the three levels of riding frequency.

Among the four-to- five-day riders, incomes below $10,000 are reported at 29%, a considerably smaller percentage of low incomes than for the other segments. Conversely, the percent reporting incomes of $20,000 or more is somewhat greater among this segment (56%, compared to 46% for the one-to-three-day riders and 35% for the six-to-seven-day riders).

Figure 24 Employment and Income

Household Income by Customer Employment
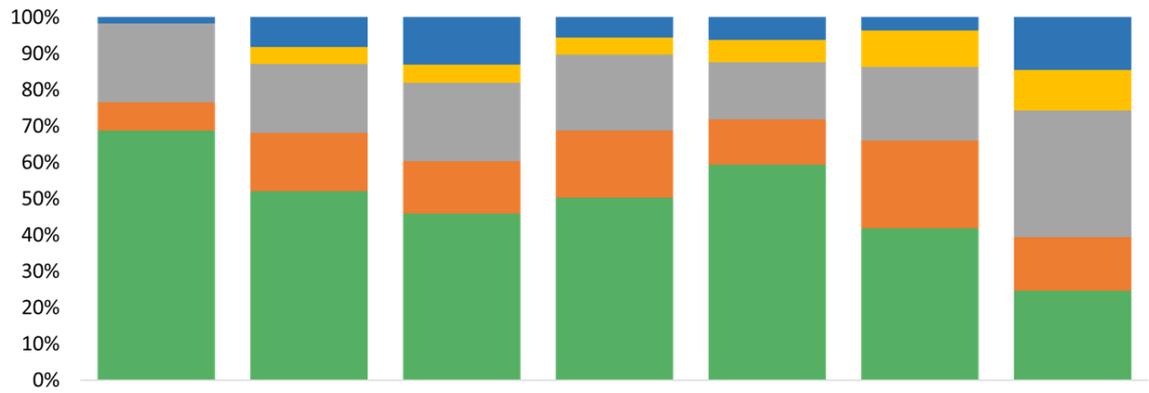
	Unemployed but seeking	Part time	Student	Homemaker	Volunteer position	Retired	Full time
$50,000 and above	2%	8%	13%	6%	6%	4%	15%
$35,000 to $49,999	0%	5%	5%	5%	6%	10%	11%
$20,000 to $34,999	22%	19%	22%	21%	16%	20%	35%
$10,000 to $19,999	8%	16%	14%	18%	13%	24%	15%
Less than $10,000	69%	52%	46%	50%	59%	42%	25%

Employment and Income

As one would expect, income is related to the employment circumstances of customers. Of those who are unemployed and seeking work, 69% report incomes of less than $10,000. Volunteers are next with 59% in that category, part time workers third at 52%, and students fourth, with 50%. For obvious reasons, full time workers report the highest levels of income. Retired persons are next because the percentage with mid-level incomes from $10,000 to $34,999 is considerably higher than for others. This may be thanks to Social Security or pensions, and for some retired customers a job in retirement.

In 2019, household incomes below $10,000 seem 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. 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.

Figure 25 Rider Segment by Gender

Gender of Respondents

	2019	2018	1 - 3 days	4 - 5 days	6 - 7 days
■ Prefer not to answer	1%	2%	1%	0%	2%
■ Male	49%	49%	49%	49%	48%
■ Female	50%	50%	49%	51%	50%
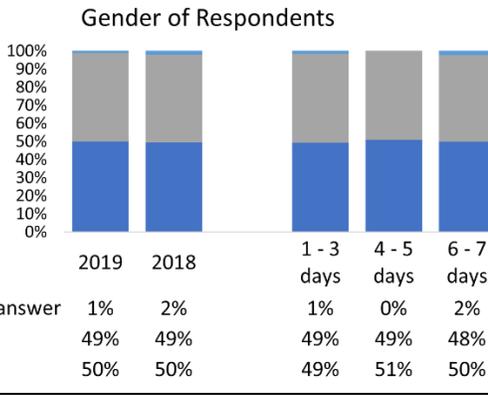
Gender of the Customers

GoDurham customers are equally split by gender, 50% female and 49% male, with 1% preferring not to state a gender identity. The gender balance does not differ significantly among the rider segments.

Nationally, according to the CJI APTA report cited earlier, among bus customers, 56% are women. In a recent CJI survey of customers of Bee-Line (Westchester County, NY) 62% were women. On the other hand, in Columbus, Ohio a recent survey of Central Ohio Transit Authority passengers, found only 44% women.

Ethnicity of Customers

In measuring ethnicity, it is important to focus on self-identification by asking "Which do you consider yourself…?" and asking that respondents note all descriptions that apply to them. In this way surveys usually capture some overlap among the several groups. However, in spite of the instruction to "…check all that apply to you," all but a few GoDurham respondents checked only one identity, although clearly many GoDurham riders, like the general Durham population, must share multiple cultures and identities.

In 2019, 65% of the respondents identified themselves as African American/Black and 16% as Caucasian/White. These two groups total 81% of the ridership.

Figure 26 Ethnicity of Customers

Ethnic Background of Respondents

	2019	2018	1 - 3 days	4 - 5 days	6 - 7 days
■ Native American Indian	1%	3%	1%	2%	1%
■ Other	4%	5%	4%	2%	6%
■ Hispanic	6%	6%	5%	9%	5%
■ Asian	7%	5%	10%	9%	4%
■ Caucasian/White	16%	14%	18%	15%	14%
■ African American/Black	65%	67%	61%	63%	69%
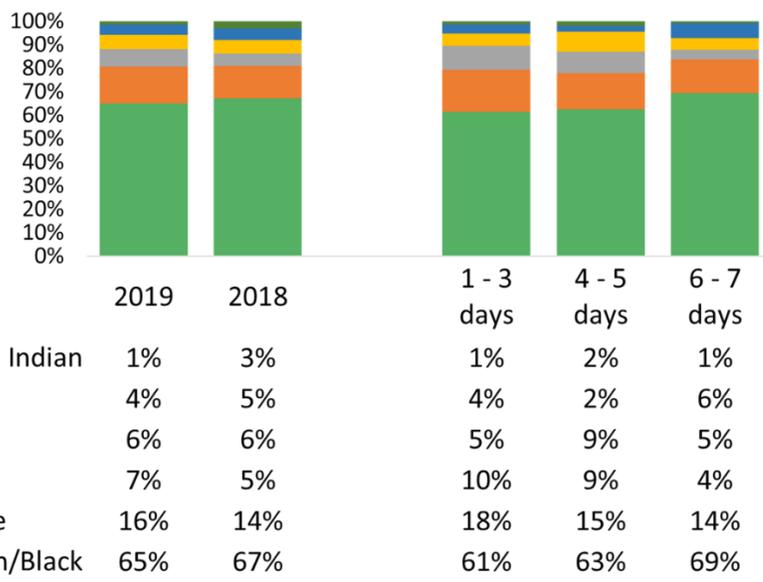
Those identifying as Hispanic account for 6% of the ridership, Asian as 7%, and Native American as 1%. The "Other" category allowed for a handwritten response. But the write-ins were predominantly expressions of nationality or cultural groups (Greek, Egyptian, Jewish, etc.), notations such as "mixed," or sardonic (e.g. American, Human) which in this context are not at all helpful.

The distribution of ethnicity differs somewhat among the rider segments, with seven-day customers more likely (69%) to identify as African American compared to four-or-five-days customers (63%) or one-to-three-day customers (61%). Hispanic riders are almost twice as likely (9%) likely to use GoDurham four-or-five days a week than more often or less often (5%).

Figure 27 Language Spoken Most Often at Home

Language Spoken at Home

	1 - 3 days	4 - 5 days	6 - 7 days		2018	2019
■ Other	1%	0%	2%		3%	1%
■ Spanish	2%	6%	3%		4%	4%
■ English	97%	93%	95%		93%	95%
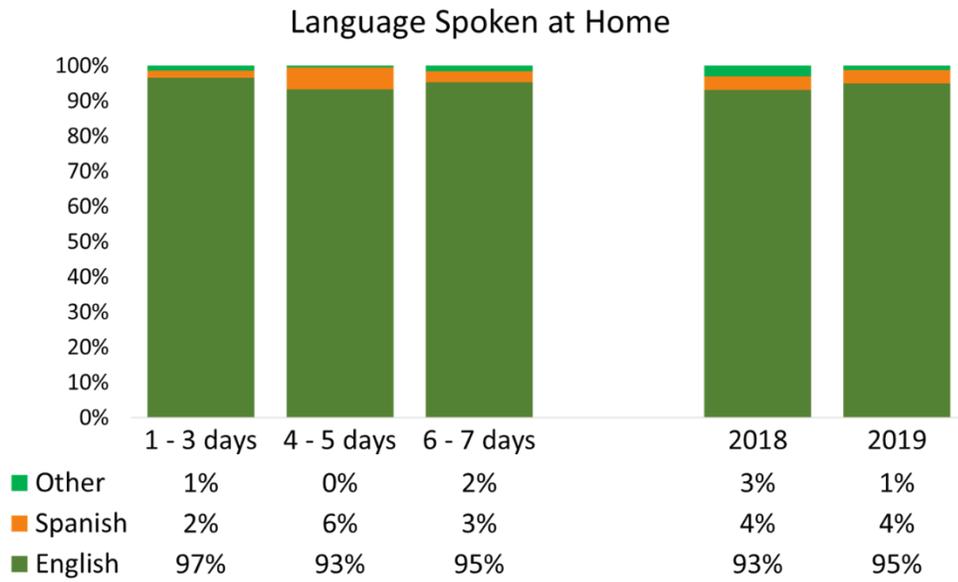
Language Spoken Most Often at Home

The overwhelming majority (97%) of GoDurham customers most often speak English at home while only 2% speak Spanish at home. The rider frequency segments do not vary significantly in this respect.

Of GoDurham customers, 66 people, or 7% of the effective final unweighted sample, identified themselves as Hispanic, but only 30, or 3% of the questionnaires were completed in Spanish. Stated in another way, just under half (45%) of the customers identifying themselves as Hispanic completed the survey in Spanish.

Figure 28 Age of Customers

Age Groups of Passengers

	2019	2018		1 - 3 days	4 - 5 days	6 - 7 days
■ 65 or older	7%	5%		12%	6%	5%
■ 55-64	15%	13%		15%	14%	16%
■ 45-54	16%	16%		17%	15%	15%
■ 35-44	15%	17%		14%	12%	18%
■ 25-34	22%	23%		21%	31%	17%
■ 18-24	21% (47%)	21% (49%)	(43%)	19%	18% (53%)	25% (46%)
■ 16-17	4%	5%		3%	4%	4%
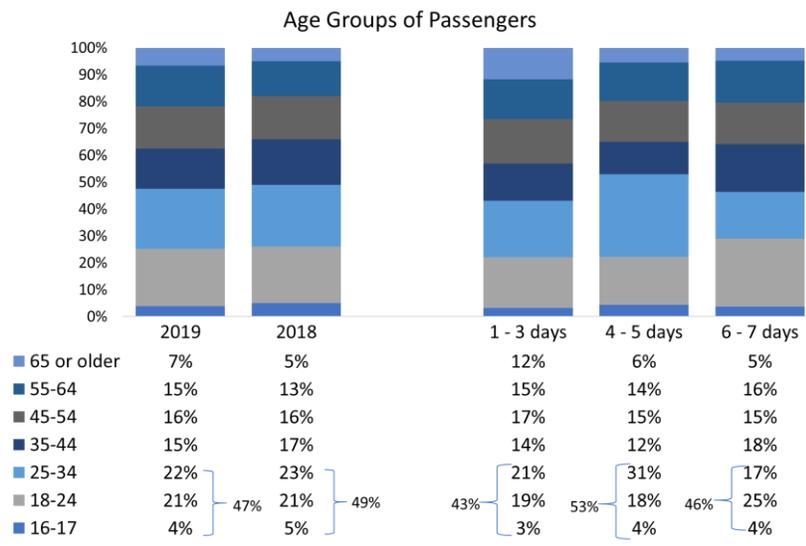
Age of Customers

Like most bus transit systems in the United States, GoDurham has a young ridership. Of all GoDurham riders, close to half, 47%, are under the age of 35. 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 16.

The age distributions differ somewhat among the three rider segments. The most notable variation is in the total percentage of the ridership under or over the age of thirty-five. Among the six-to-seven-day customers, the percentage younger than thirty-five is 46%. Among the one-to-three-day customers, the percentage is 43%.

Age Profile of Transit Customers Nationally

Figure 29 demonstrates that nationally, the age distribution among GoDurham customers is similar to that of bus system customers in general, although the GoDurham customers tend to be slightly younger than bus riders nationally.

- Nationally, 22% of bus customers are under the age of twenty-five, a percentage slightly less than that of the 25% under twenty-five among to GoDurham customers.
- Nationally, another 21% are between twenty-five and thirty-four, compared to GoDurham's 22%.
- Another 17% are between thirty-five and forty-four, slightly higher than GoDurham's 15%
- Similarly, nationally, 17% are between forty-five and fifty-four compared to the 16% among GoDurham customers.
- The balance, 23% nationally and 23% for GoDurham, are fifty-five or older.

Figure 29 Age Profile of Transit Customers Nationally
(APTA,op cit)

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

	Under 20	20 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 or older
GoDurham riders	11%	14%	22%	15%	16%	15%	8%
Bus riders nationally	10%	12%	21%	17%	17%	15%	8%
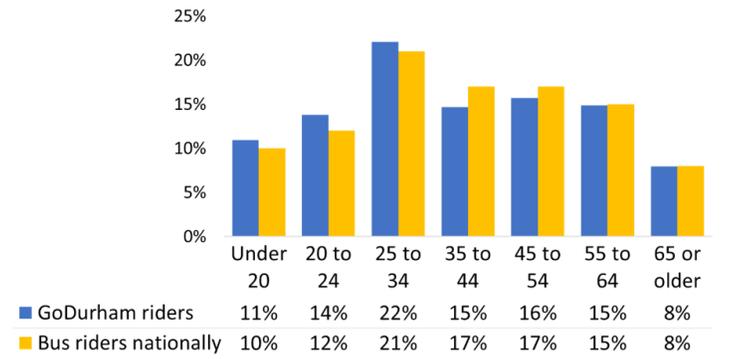
Figure 30 Age of GoDurham Customers and the Durham County Population

Age Distribution of GoDurham Riders Durham County Population 15 and Older
(Source of population data: American Community Survey, five year estimates, 2017)

Durham Co population 15 and older — GoDurham riders
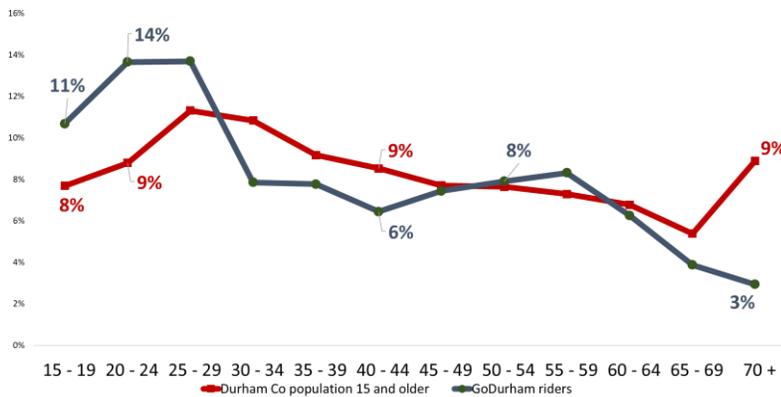
Age of GoDurham Customers and the Durham County Population

Relative to the percentages in each age group among the county population fifteen and older, GoDurham ridership diverges most in the age ranges from twenty to twenty-four and above sixty. The population in the twenty to twenty-four year old age set accounts for 9%, while in the ridership it accounts for 15%. And at the age of seventy and older, the percentage of the population is 9% while among riders it is 1%. The percentages diverge somewhat, alternating one slightly higher than the other between the ages of thirty and fifty-nine, but the differences are small.

After the age of thirty-five, the two populations follow similar gradual downward trajectories until the age of fifty-five when the percentage of the general population in each age group is greater than the percentage among riders. The difference is especially pronounced among those sixty-five or older.

Figure 31 Age Profile of GoDurham Customers
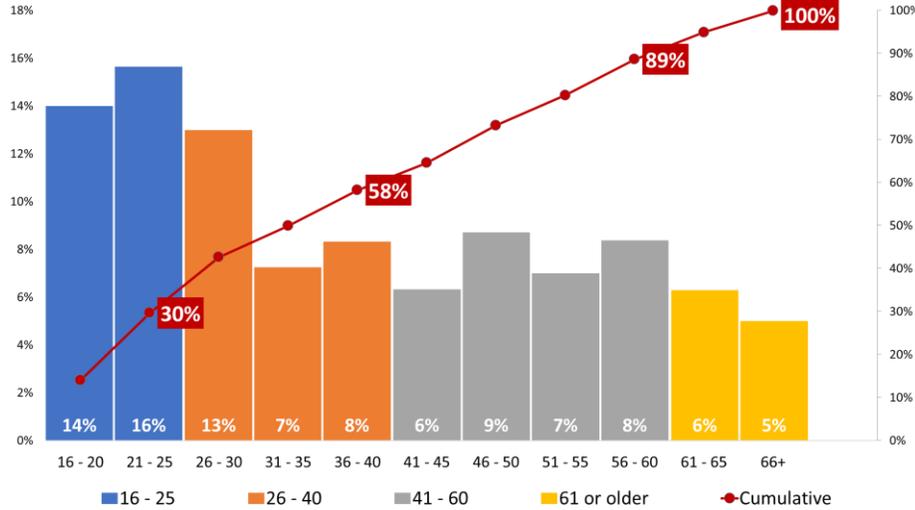
An Age Profile of GoDurham Customers

A quick glance at the chart above tells an important age story about ridership: It is somewhat disproportionately young. Thirty percent (30%) of GoDurham riders are twenty-five or younger. Almost sixty percent (58%) 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 31. Generally, about one-fourth to one-third of ridership falls into a youthful cohort, 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 GoDurham case averaging 7% of the ridership during that period. After the age of 60, the percent of ridership falls off as people begin to retire. Although the percentage each age group contributes to overall ridership varies somewhat, it does not vary greatly as a percentage of total ridership and averages 5.5%.

Figure 32 Generations and Ridership
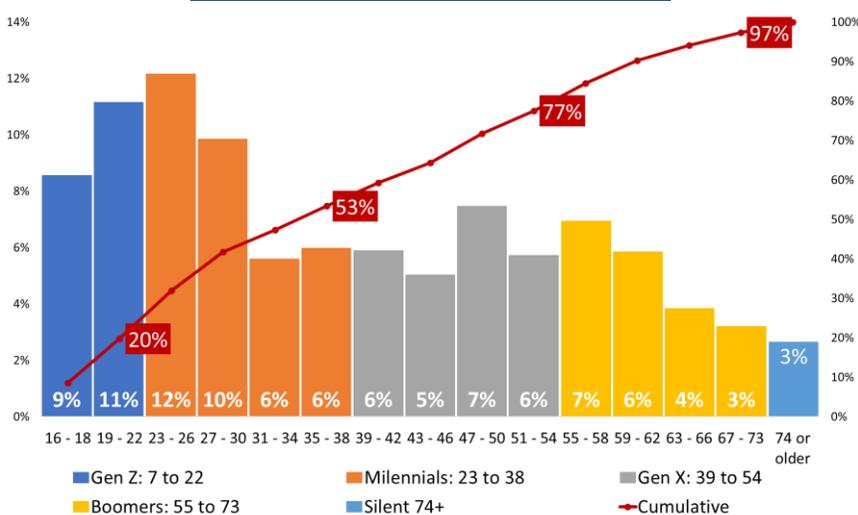
Generations and Ridership

For purposes of visualizing the age characteristics of the GoDurham 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 Center[4]. 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 GoDurham 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

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

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 32, we see a pattern very similar to that presented in Figure 31. 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 more than half of the total ridership (53%).

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.

Customer Satisfaction

Figure 33 Overall Service Rating by Rider Segment

Rating of GoDurham Service overall on a scale from 1 - 7

	2019	2018		1 - 3 days	4 - 5 days	6 - 7 days
7 Excellent	24%	27%		30%	17%	27%
6	22%	22%		22%	25%	20%
5	23%	21%		24%	25%	22%
4 Neutral	17%	17%		13%	20%	18%
3	6%	7%		5%	7%	5%
2	3%	3%		2%	2%	4%
1 Very poor	4%	3%		3%	4%	4%
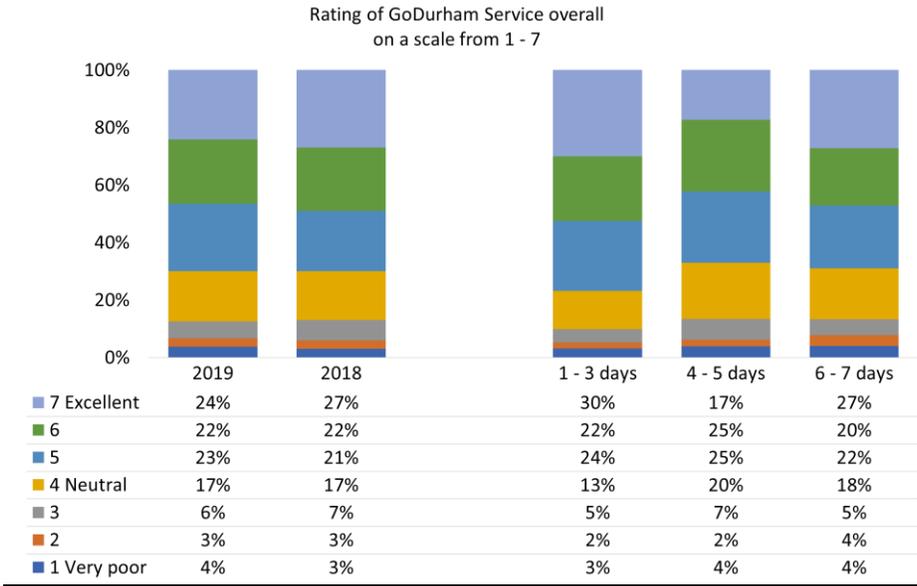
Overall System Rating Score by Rider Segment

Customers were asked to rate nineteen aspects of GoDurham 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.

Twenty-four percent (24%) rate service overall as 7, or excellent. Another 22% score it 6, giving a total of 46% with high satisfaction scores. There was an apparent small change in the top score from 27% to 24% between 2018 and 12019. However, the margin of sample error for the 2018 sample was +/-3.3% and for 2019 was +/-3.2%, meaning that the apparent change is within the margin of sampling error and may not represent a real change at all.

The occasional, one-to-three-day riders, offer the highest score on overall service quality, with a total of 52% scoring service overall as 6 or 7 on the seven-point scale, while fewer (47%) of the six-to-seven-day riders, and 42% of the four-to-five-day riders assign that score. The four-to-five-day riders, who typically have the most routine commutes, offer a lower "excellent" percentage than the other segments, with 17%. This apparent relative reluctance to assign a perfect score for transit service is not uncommon for this segment, probably because they are likely to rely on the service to provide an unbroken commuting routine, and in addition have slightly more income which allows them the freedom to be a bit more critical.

Figure 34 Services Included in the Survey, Grouped by Type & Showing Percent Unable to Provide a Rating

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

		Applicable - Provided rating	Not applicable - Unable to provide rating
Operating Services Used by All	Service to all destinations	99%	1%
	Weekday service hours	99%	1%
	Total average trip time	98%	2%
	Buses on time	98%	2%
	Weekday service frequency	98%	2%
	Ease of transfer within system	95%	5%
Operating Services Used by Many	Saturday service hours	91%	9%
	Saturday service frequency	90%	10%
	Sunday service hours	89%	11%
	Sunday service frequency	88%	12%
	Ease of transfer between systems	86%	14%
Travel Environment	Sense of safety on bus	99%	1%
	Bus operator courtesy/helpfulness	98%	2%
	Bus interior cleanliness	98%	2%
	Bus shelter/transit center cleanliness	96%	4%
	Fare medium options	96%	4%
	Usefulness of printed information	89%	11%
	Quality of WiFi	87%	13%
	Usefulness of telephone operators	82%	18%

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 34 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 34 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* 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 GoDurham services. To take an example, clearly the "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 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 GoDurham, 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 34. 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.

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

Figure 35 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 scale.

Percent of all customers rating service "Excellent"
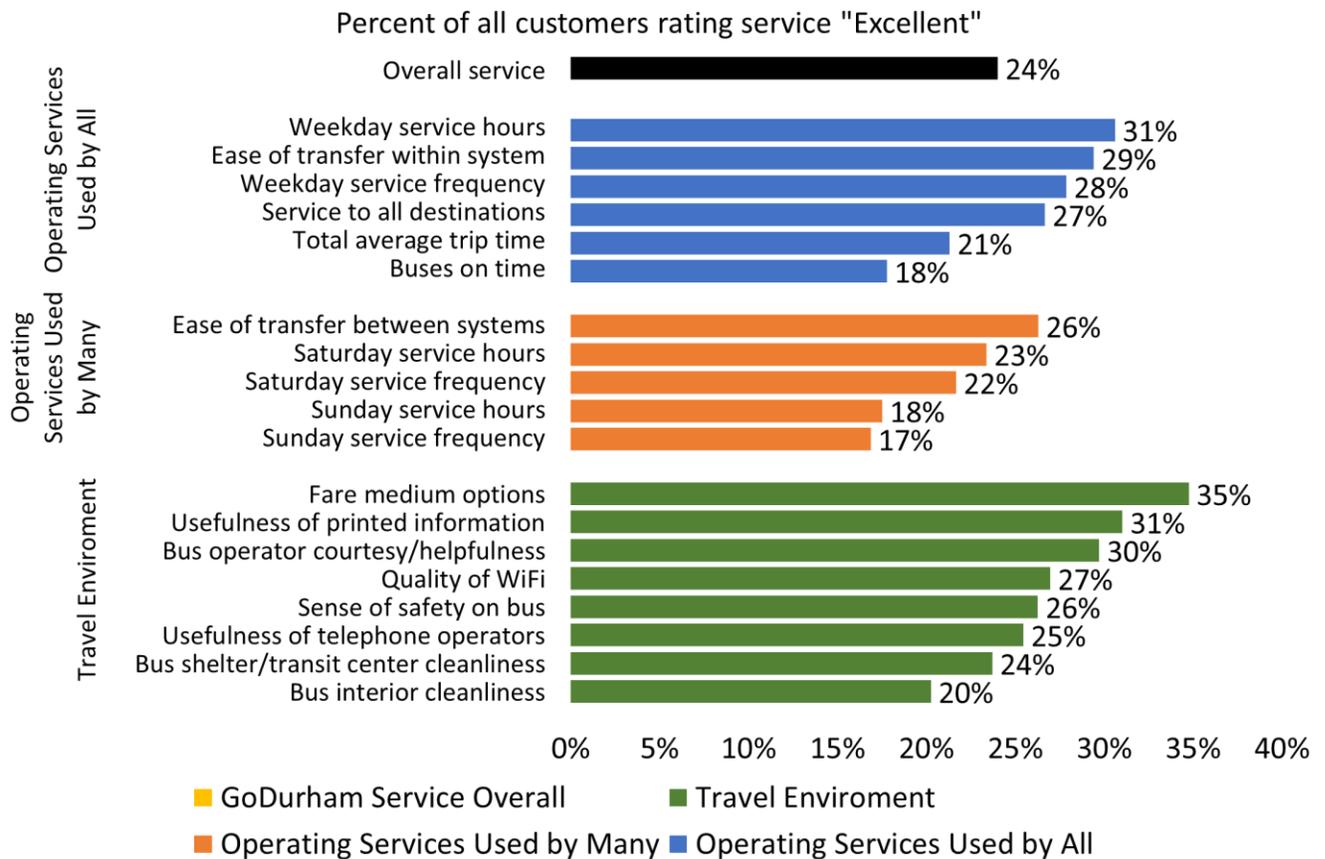
Like Figure 34, Figure 35 is organized by the type of service being rated. At the top of the chart are six operational services fundamental to all customers. Of these six, four have more than one-fourth of the customers scoring the service as excellent. The four are: Weekday service hours, Ease of transferring within the system, Weekday service frequency, and having the ability to reach all desired destinations On time performance and total time required for a trip are lower (18% and 21%, respectively).

Operational aspects of service that are used by fewer customers than other services, tend to have somewhat fewer ratings of excellent than the more universally used service elements[5]. This is particularly true for weekend service. Transferring between systems (26% excellent) is the one element included in this set that does not involve weekend service. It is in this set because more than 5% 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 also receive excellent ratings by almost one-quarter (23%). Saturday service frequency falls slightly below that level at 22%. The two other service elements in this set both involve Sunday service, and both get scores of excellent by fewer than one-fourth of the customers, 18% for service span and 17% for frequency.

The third set of services involves the environment which GoDurham customers travel. Of the eight services included in this set, three get excellent scores by more than 30% of the respondents. The fare media options, with 35%, are at the top of this list. Bus operator courtesy/helpfulness, was rated excellent by 30%. It is typical for personnel to have very good ratings. Occasional complaints notwithstanding, customers generally like the

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[5] Note that the percentage is based on only those who were able to provide a rating, not the total sample so that the percent "excellent" is <u>not</u> falsely reduced by inclusion of those who answered "not applicable" in the denominator.

interaction with the transit personnel with whom they come in contact and give them high scores. The remaining score above 30% in the top score was for usefulness of printed information, at 31%.

Items falling below 30% in their rating should be of concern. The quality of Wi-Fi on the buses (27%), and the usefulness of telephone operators (25%) are below that mark. A sense of safety on the bus, at 26% suggests that there is less than unanimous feeling about personal security. The two elements involving cleanliness are also rated lower: cleanliness of the bus shelters and transit center (24%) and the interior of buses (20%). These last three items are related. The degree of cleanliness often implies a degree of order and official attentiveness which, though unrelated to safety, can be reassuring.

Figure 36 Distribution of Grouped Service Rating Scores

Customer Satisfaction

		Very poor to Poor	Middle	Very good to excellent
	Overall service	7%	45%	48%
Operations affecting all	Weekday service hours	7%	40%	52%
	Ease of transfer within system	9%	42%	49%
	Weekday service frequency	8%	44%	48%
	Service to all destinations	13%	44%	43%
	Total average trip time	12%	51%	37%
	Buses on time	15%	53%	33%
Operations affecting most	Ease of transfer between systems	9%	46%	45%
	Saturday service hours	10%	46%	44%
	Saturday service frequency	10%	50%	41%
	Sunday service hours	21%	46%	33%
	Sunday service frequency	21%	47%	32%
Environmental factors	Fare medium options	9%	37%	54%
	Usefulness of printed information	9%	40%	51%
	Usefulness of tellephone operators	10%	41%	49%
	Bus operator courtesy/helpfulness	11%	40%	49%
	Quality of WiFi	13%	40%	47%
	Sense of safety on bus	10%	44%	46%
	Bus shelter/transit center cleanliness	14%	47%	40%
	Bus interior cleanliness	14%	49%	36%

Service Rating Distributions

The previous chart, Figure 35, 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 36 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.

The basic story of the chart in Figure 36 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 only 20% or less. 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 characteristics affecting all passengers three are at or just below 50% in the combined 6 and 7 category: weekday service hours has high six/seven ratings of 52% while ease of transferring within the GoDurham system stands at 49% and weekday service frequency is at 48%. The other three range from 33% to 43% in the top category.

The largest percentages in the lowest score categories are for Sunday service frequency and hours, both with 21% in that low score category. Cleanliness of bus interiors and bus shelters and transit center, at 14% each in the low score category, are clearly another aspect of service that causes some dissatisfaction.

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 **Error! Reference source not found.** through Figure 36 we have seen the opinions of GoDurham customers about service overall and of nineteen separate elements that make up GoDurham service. While these charts give us considerable information about how customers perceive GoDurham 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 37 and Figure 40:

- The first method (Figure 37) 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 40) 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 GoDurham services? Second, it correlates the rating of each element of service with the rating of GoDurham service overall so that we can infer its influence on that overall score.

Figure 37 Most Important Element to Improve

One of three most important to improve

Element	Percent
Buses on time	55%
Bus interior cleanliness	26%
Weekday service frequency	23%
Sunday service frequency	21%
Bus operator courtesy/helpfulness	20%
Sunday bus hours	19%
Service to all destinations	18%
Total average trip time	18%
Sense of safety on bus	17%
Weekday bus hours	14%
Bus shelter/transit center cleanliness	11%
Saturday service frequency	11%
Fare medium options	10%
Saturday bus hours	9%
Quality of WiFi	8%
Ease of transfer between systems	6%
Overall service	5%
Ease of transfer within system	4%
Usefulness of telephone operators	3%
Usefulness of printed information	2%

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

Fifty-five percent (55%) of GoDurham customers indicate that having the buses run on-time is one of their top three improvement priorities. This is a substantial reduction from the 64% who named it in the top three in 2018, an indication of improved perception of on-time performance, although, paradoxically, the percent giving top scores to on-time performance remained statistically unchanged (i.e. change was within margin of sample error). There is never "enough" on-time performance given that perfection is not a possibility. Thus this will always tend to be high on the improvement priority list.

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. It is also somewhat open-ended. 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. To the extent that more people begin to use real-time transit apps for bus arrival information, as 56% now do (see Figure 19), that information should decrease the anxiety of waiting and will help reduce the perception of a lack of on time performance. In addition, greater frequency will have a similar effect because even in the absence of real time information, frequent service creates certainty that the next bus will be coming soon.

The next closest priority, "Bus interior cleanliness" is rated in the top three by 26%. The third and fourth in the rank order of customer service improvement priorities, are weekday service frequency (23%) and Sunday service frequency (21%).

Figure 38 Changes in the most important to improve

Named as one of the three aspects of service *most important to improve*, showing change from 2018 to 2019 in only the ten most important to improve
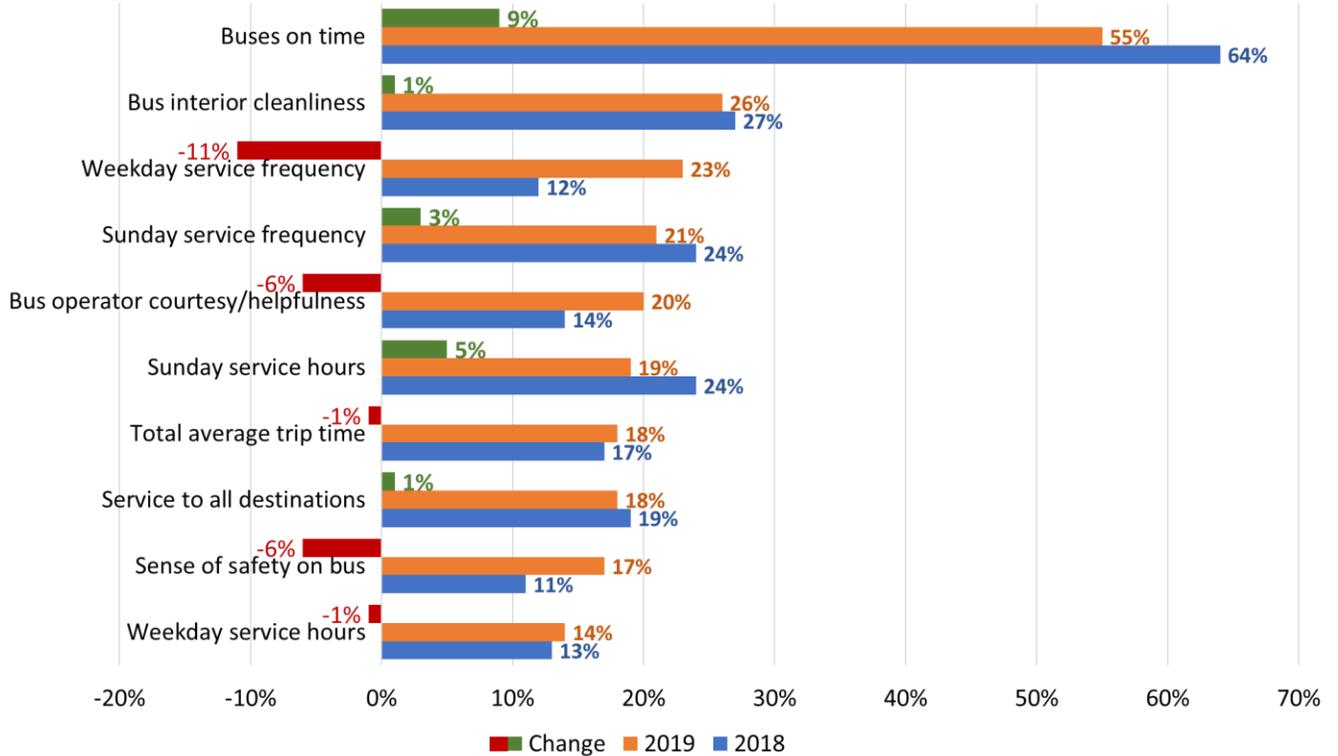
Changes in the most important to improve

A decrease in the percentage citing a service element as in the top three to improve is a positive sign and is indicated by a green bar. An increase in riders citing a need to improve the service is indicated by a red bar to the left of the vertical axis.

The major changes (beyond margin of error) were a decrease of 9% in the percent citing a need to improve on-time performance, and a decrease of 5% in citing of Sunday hours of service. We do not know whether these perceptions reflect real changes or events, or only perceptions. Inquiries of GoDurham staff indicate that there have been no positive changes in OTP or Sunday service between 2018 and 2019 that might explain the change.

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 40 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. Its basic structure is illustrated in Figure 37.

- The concept of the matrix illustrated in Figure 37, and completed in Figure 40 as follows: Respondents rated nineteen separate aspects of GoDurham service as shown in previous charts. They also rated *"The quality of GoDurham 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 GoDurham services would, if improved, move the needle of the rating of GoDurham 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 (as shown in Figure 37) 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 36). 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 correlations. 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 service[6]. 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.

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[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 Figure 40, therefore, the vertical axis varies from -2.5 to +2.5 standard deviations, not from -1 to +1.

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 40 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.

Figure 39 Outline of priority matrix
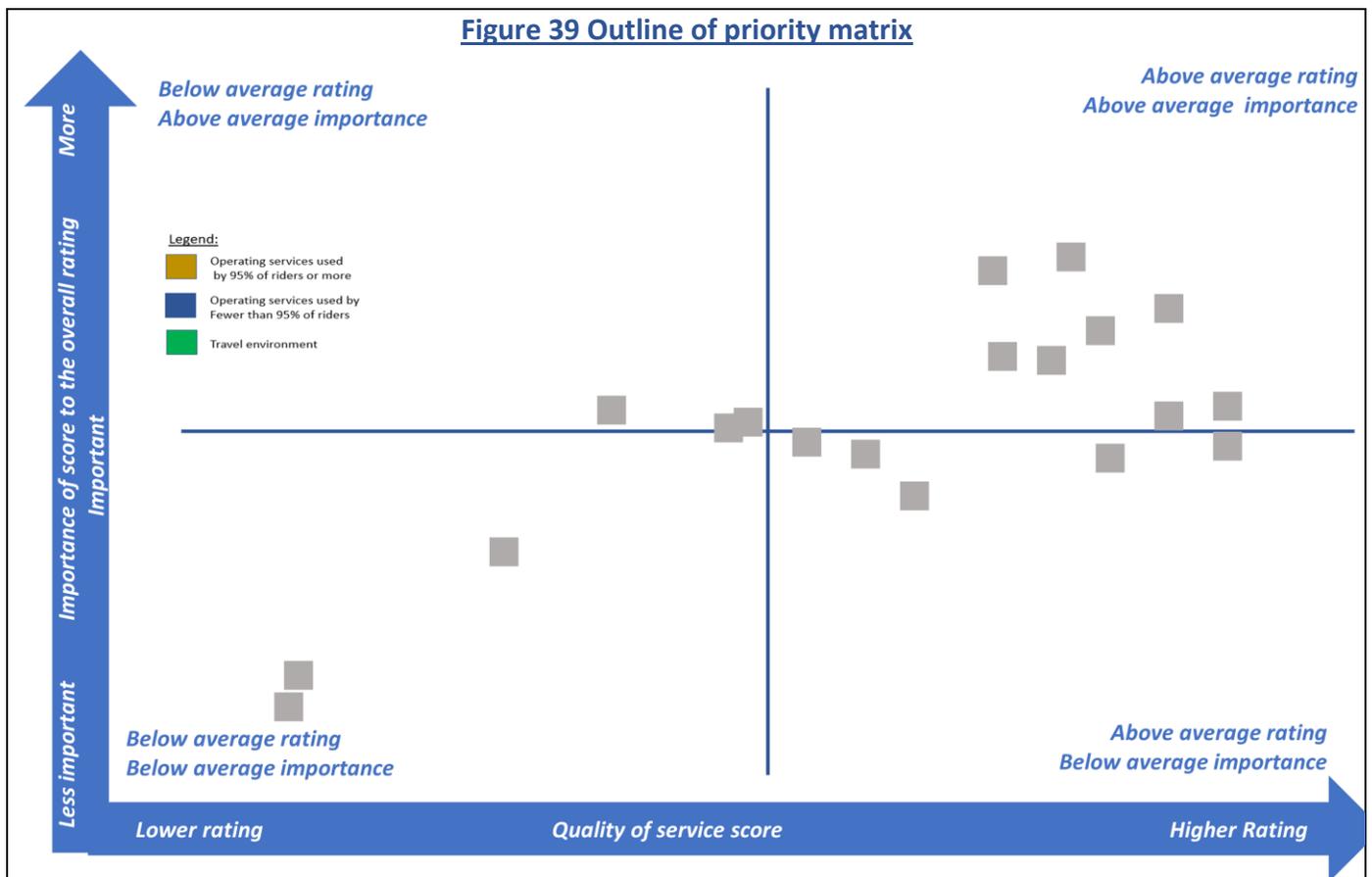
Figure 40 Relationship between Overall Performance Rating and Ratings of Individual Service Elements

Below average rating
Above average importance

Above average rating
Above average importance

Legend:
- Operating services used by 95% of riders or more
- Operating services used by Fewer than 95% of riders
- Travel environment

Quality of WiFi

Bus operator courtesy/helpfulness

Ease of transfer within system

Ease of transfer between systems

Sense of safety on bus

Usefulness of telephone operators

Bus shelter/transit center cleanliness

Bus interior cleanliness

Usefulness of printed information

Fare medium options

Total average trip time

Service to all destinations

Saturday service frequency

Weekday service frequency

Weekday service hours

Buses on time

Saturday service hours

Sunday service hours

Sunday service frequency

Below average rating
Below average importance

Above average rating
Below average importance

Importance of score to the overall rating
More Important — Less important

Lower rating — Quality of service score — Higher Rating

4.2 4.4 4.6 4.8 5 5.2 5.4

3 2 1 0 -1 -2 -3

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 GoDurham 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 average for each of the axis scores, -1.34 for the importance (vertical) axis and 4.9 for the quality of service score. The location of the lines is somewhat arbitrary. Here we have used the averages to place the lines that define the quadrants. Another approach would place them at the medians[7], or they could be placed at the midpoints of the scales. The idea, in any configuration, however, is that the upper left needs attention because it is rated low but is relatively more important to customers than other elements in the chart.

In considering the matrix above, keep in mind that the position of a service element in the matrix is based on its rating <u>relative to</u> 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 average[8].

TOP, BOTTOM, LEFT, RIGHT

- Services appearing above the horizontal line are more important to the overall rating of GoDurham 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 GoDurham service rating by being better rated than the average of all nineteen elements of GoDurham 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 aspects of service in gold color we have labeled "Operating services used by 95% of riders or more" are *at or above* the horizontal line that indicates average importance to the overall service rating.

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[7] Medians would be 5.04 for quality and .08 for importance. Mid points would be 4.8 for quality and 0 for importance.

[8] 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.

- Of the five elements colored blue we have labeled "Operating services used by fewer than 95% of riders," two are above the line of average importance to the overall score, three, ease of transfer between systems, Saturday service frequency and Saturday service hours. Two, Sunday service hours and frequency are below the line.

THE UPPER LEFT QUADRANT: LOW SCORE, HIGH IMPORTANCE - IMPROVING THESE WOULD MOVE THE OVERALL RATING NEEDLE THE MOST

Improving service on the three elements in the upper left quadrant would have the greatest positive impact on the rating of GoDurham service overall. Service coverage ("Service to all destinations"), on-time-performance ("Buses on time") and duration of trip ("Total average trip time") 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, though less so than in 2018.

Two other items in this quadrant involve cleanliness of equipment and facilities. These are typically challenging aspects of transit operations to maintain, but presumably are subject to greater short-term system control than coverage, duration and OTP.

THE UPPER RIGHT QUADRANT: HIGH SCORE, HIGH IMPORTANCE - MAINTAIN THIS RELATIVELY STRONG POSITION

At the upper right are eight elements of service that represent relative strengths among all GoDurham services because they score relatively well, and they are important to the overall GoDurham rating. Compared to all other aspects of GoDurham service, these services are relatively strong and support the current overall positive rating.

Three of the elements in this quadrant are operational services used by almost all customers: Ease of transferring within the GoDurham system, Weekday service hours, and weekday service frequency. The other operational elements in this quadrant are, Saturday service hours, Saturday service frequency, and Ease of transfer between systems. These are operational services used by somewhat fewer riders than other services. The other six items relate to the travel environment: Four of them are Bus operators' courtesy/helpfulness, the Sense of safety on the bus, the Usefulness of the printed information provided by GoDurham, and the Usefulness of the GoDurham telephone operators. The other two are items we more often see in the lower right quadrant: Usefulness of telephone operators and Usefulness of printed information.

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: HIGH SCORE, LOW IMPORTANCE - THIS SERVICE IS GOOD, BUT IMPROVEMENT WOULD BE WELCOME

Uniquely in this survey, no element appears in the lower right quadrant.

LOWER LEFT QUADRANT: LOW SCORE, LOW IMPORTANCE IT WOULD BE NICE TO IMPROVE THESE ELEMENTS, BUT IT WOULD NOT AFFECT THE OVERALL RATING OF GODURHAM MUCH

Only two service elements appear in this quadrant Sunday service hours and Sunday service frequency. Neither is an operating service used by all, or almost all, riders. Instead, these are either services used by most but not all riders. Improvement in these services is unlikely to move the rating of service overall. However, it is important to note that these ratings have to be taken in context. Weekend service hours provide a good example. CJI has found that when (in other surveys) we have asked riders two questions: (a) whether they

work on weekends, and (b) whether in the coming year they would prefer to continue using the bus, or get a vehicle and cease using the bus, the weekend workers are much stronger than others in their preference for a vehicle. In Ann Arbor, Michigan, expansion of weekend service, though used by relatively few passengers compared to weekday service, was associated with an increase in ridership overall, apparently due to a decrease in turnover among those most affected.

Appendix A: Questionnaire

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

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

GO Durham

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

21. Of the services in questions 1 – 19 above, please list the three most important to improve?
_____ Most important _____ 2nd most _____ 3rd most

22. On how many days in a typical week do you use GoDurham? *(Circle only one)*
1   2   3   4   5   6   7

23. What is the ONE main purpose for which you most often use the GoDurham 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 GoDurham... *(Check only one)*
1 ☐ More often   2 ☐ The same   3 ☐ Less often   4 ☐ Did not ride a year ago

25. For your fare on the first GoDurham bus you boarded during this trip, did you... *(Check only one)*
1 ☐ ...pay cash fare for this 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

26. How did you get to the stop where you got on this GoDurham bus? *(Check only one)*
1 ☐ Walked   2 ☐ Biked   3 ☐ Drove
4 ☐ Uber or Lyft   5 ☐ Was dropped off by family/friend   6 ☐ Other GoDurham bus
7 ☐ Bus other than GoDurham   8 ☐ Other: _____

27. In a typical week, which, bus systems do you usually use? *(Check all that apply)*
1 ☐ GoRaleigh/GoRaleigh Access   2 ☐ GoTriangle/GoTriangle Access
3 ☐ GoDurham/GoDurham Access   4 ☐ GoCary/GoCary Door-to-Door
5 ☐ Chapel Hill Transit   6 ☐ Duke Transit   7 ☐ Wolfline

28. If you use a cell-phone, do you use a mobile app for local transit on it? *(Check only one)*
1 ☐ Yes   2 ☐ No   3 ☐ Do not use a cell phone

29. In the past 30 days, how often have you used Uber or Lyft or a similar ridesharing company?
(Check only one) ☐ 0 times   ☐ 1 time   ☐ 2 times   ☐ 3 times   ☐ 4 or more times

If you used Uber, Lyft, or a similar ridesharing service... *(Check only one)*
Did you use it in combination with a bus trip on GoDurham?   1 ☐ Yes   2 ☐ No   3 ☐ Not applicable
Did you use it to replace a bus trip on GoDurham?   1 ☐ Yes   2 ☐ No   3 ☐ Not applicable

30. How old are you? _____ Years old

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? *(Check only one)*   1 ☐ Yes   2 ☐ No

33. How many cars or other vehicles are available for your use? *(Circle only one)*
0   1   2   3 or more

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

35. 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: _____

36. What language do you most often speak at home? *(Check only one)*
1 ☐ English   2 ☐ Spanish   3 ☐ Other: _____

37. 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: _____
_____
_____
_____

10000

CJI Research

Por favor, díganos sobre cómo utiliza GoDurham

En los últimos 30 días, Cómo calificaría a GoDurham en los siguientes servicios...

GO Durham

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

	Excelente			Neutral			My mal	No se aplica a mí
1. Autobuses transitan a tiempo	7	6	5	4	3	2	1	☐
2. Frecuencia de servicio entre semana (Lun-Vie)	7	6	5	4	3	2	1	☐
3. Frecuencia de servicio el sábado	7	6	5	4	3	2	1	☐
4. Frecuencia de servicio el domingo	7	6	5	4	3	2	1	☐
5. Horas que autobuses operan entre semana (Lun-Vie)	7	6	5	4	3	2	1	☐
6. Horas que autobuses operan el sábado	7	6	5	4	3	2	1	☐
7. Horas que autobuses operan el domingo	7	6	5	4	3	2	1	☐
8. Tiempo total requerido para hacer su viaje regular	7	6	5	4	3	2	1	☐
9. Disponibilidad del servicio a todos los destinos que desea llegar	7	6	5	4	3	2	1	☐
10. Facilidad de transferir dentro del sistema GoDurham	7	6	5	4	3	2	1	☐
11. Facilidad de transferir entre GoDurham y otros sistemas de tránsito de autobuses del área	7	6	5	4	3	2	1	☐
12. Limpieza del interior del autobús	7	6	5	4	3	2	1	☐
13. Limpieza de los albergues de autobús y de centros de tránsito	7	6	5	4	3	2	1	☐
14. Su seguridad personal de otros pasajeros en los autobuses	7	6	5	4	3	2	1	☐
15. Cortesía y amabilidad de operadores de autobús	7	6	5	4	3	2	1	☐
16. Utilidad de la información de los operadores de 485-RIDE	7	6	5	4	3	2	1	☐
17. Utilidad de la información impresa tal como horarios o folletos	7	6	5	4	3	2	1	☐
18. Formas disponibles para que pagues tu tarifa de autobús	7	6	5	4	3	2	1	☐
19. Calidad del servicio de internet inalámbrico (WIFI)	7	6	5	4	3	2	1	☐
20. Calidad de los servicios de GoDurham en general	7	6	5	4	3	2	1	

21. De los servicios en las preguntas 1 a 19 anteriores, ¿por favor enumera los tres más importantes para mejorar? ____ Lo más importante _____ 2° más _____ 3° más

22. ¿Cuántos días en una semana típica usas GoDurham? *(Circule sólo uno)*
1   2   3   4   5   6   7

23. ¿Cuál es el ÚNICO propósito principal para el que usas los autobuses de GoDurham más seguido? Es ir hacia o desde...*(Marque sólo una)*
1 ☐ Trabajo   2 ☐ Escuela/colegio   3 ☐ Compras
4 ☐ Médico/dental   5 ☐ Recreación/evento   6 ☐ Otro _____

24. Comparado con hace un año, ¿actualmente usas GoDurham... *(Marque sólo una)*
1 ☐ Más a menudo   2 ☐ Lo mismo   3 ☐ Menos   4 ☐ No lo usaba hace un año

25. Para su tarifa en el primer autobús GoDurham que abordó en este viaje, usted... *(Marque sólo una)*
1 ☐ ...pago tarifa en efectivo solo por este viaje   2 ☐ ...compro el pase de 1-Día en el autobús
3 ☐ ...compro el pase de 1-Día con anticipación   4 ☐ ...uso un pase de 7 o 31-Días
5 ☐ ...uso identificación de universidad u otra   6 ☐ ...uso un GoPass

26. ¿Cómo llegaste a la parada donde subiste a este autobús de GoDurham? *(Marque sólo una)*
1 ☐ Caminado   2 ☐ Bicicleta   3 ☐ Condujo
4 ☐ Uber o Lyft   5 ☐ Lo llevo familia/amistad   6 ☐ Otro autobús de GoDurham
7 ☐ Autobús que no sea de GoDurham   8 ☐ Otro: _____

27. En una semana típica, ¿que sistemas de autobús sueles usar? *(Marque todo lo que corresponda)*
1 ☐ GoRaleigh/GoRaleigh Access   2 ☐ GoTriangle/GoTriangle Access
3 ☐ GoDurham/GoDurham Access   4 ☐ GoCary/GoCary Door-to-Door
5 ☐ Chapel Hill Transit   6 ☐ Duke Transit   7 ☐ Wolfline

28. Si usa un teléfono celular, ¿usa una aplicación móvil de tránsito local en él? *(Marque sólo una)*
1 ☐ Sí   2 ☐ No   3 ☐ No usa teléfono celular

29. En los últimos 30 días, ¿con qué frecuencia usó Uber o Lyft o una compañia de viaje compartido similar? *(Marque sólo una)* ☐ 0 veces ☐ 1 vez ☐ 2 veces ☐ 3 veces ☐ 4 o más veces

Si usó Uber, Lyft o un servicio de viaje compartido similar... *(Marque sólo una)*
¿Lo usaste en combinación con un viaje en autobús en GoDurham? 1 ☐ Sí 2 ☐ No 3 ☐ No aplica
¿Lo usaste para reemplazar un viaje en autobús en GoDurham? 1 ☐ Sí 2 ☐ No 3 ☐ No aplica

30. ¿Cuantos años tienes? _____ Años

31. Marque todo lo siguiente que se aplique a usted. Eres tú: *(Marque todo lo que corresponda)*
1 ☐ Empleado tiempo completo 2 ☐ Empleado medio tiempo 3 ☐ Desempleado y buscando trabajo
4 ☐ Ama/o de casa   5 ☐ Estudiante   6 ☐ Jubilado
7 ☐ Puesta de voluntario

32. ¿Tiene una licencia de conducir válida? *(Marque sólo una)*   1 ☐ Sí 2 ☐ No

33. ¿Cuántos automóviles u otros vehículos hay disponibles para su uso? *(Circule sólo uno)*
0   1   2   3 o más

34. ¿Te identificas como... 1 ☐ Masculino   2 ☐ Femenino   3 ☐ Prefiero no responder

35. ¿Te consideras ser... *(Por favor marque todo lo que aplica a usted)*
1 ☐ Afroamericano/Negro   2 ☐ Asiático   3 ☐ Caucásico/Blanco
4 ☐ Hispano   5 ☐ Indio Nativo Americano   6 ☐ Otro: _____

36. ¿Qué idioma habla más a menudo en casa? *(Marque sólo una)*
1 ☐ Inglés   2 ☐ Español   3 ☐ Otro: _____

37. ¿Cuál es su ingreso familiar anual en total? *(Marque sólo una)*
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 ☐ Más de $100,000

Comentario: _____

_____

_____

_____

Appendix B: Rider Comments

GoDurham

Route	Comments
1	Some better driver who can be more helpful.
3	#4 is always late.
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 GoDurham transit.
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 GoDurham 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 sometimes and someone's listening to rap in the back and it's heard up front but the driver says nothing.
3	The #3 is always late or doesn't show up. Bus is nasty, always full. Stand up a lot on #3.
3	The buses are too crowded and usually late.
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 GoDurham 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 GoDurham. 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   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.

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.

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   GoDurham needs to upgrade their services. Service with them has been poor. I try not to deal with GoDurham often.

7   Good job.

7   Good job.

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   It is ok, occasionally had to [illegible] 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   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.

CJI Research

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.
11	#11 bus is late often!
11	#8 never on time. Always too early or too late and has caused stress at my job. My only means of transport!!!
11	Great job to me GoDurham.
11	Great service love them.
11	More hours for weekdays.
11	Solo mi marido trabaja. Yo cuido mi hijo
11	Text does not work at the stops.
11	The # 41 needs to do better.
11	The loitering at terminals are completely distracting and deterrent.
11	The service is good, just the people on the bus!
11	Would use more frequent service on weekdays and Sundays.
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	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.
14	The buses need to run the same times 7 days a week.
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	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	Having GoDurham 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.
10A	Always on time and good service.

10A	Bus drivers popping gum. More responsive to unruly/rude other passengers.
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	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 GoDurham 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	Overall GoDurham 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.
12N	GoDurham 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.
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 GoDurham buses when I am at the bus stop, on time and the bus has gone past me (4 other passengers) and not stopped.
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	If there is money in the budget, some benches for BCC stops would be nice
18BCC	Student
18BCC	The rider app functionality should be improved (TransLōc). Buses often don't show up. Also, the BCC time predictors are the research drive, roundabout are unreliable (pauses before turning around for unpredictable length of time)
1A	Be blessed.
1A	Need a covered seat at JJ Henderson towers inbound #10. Many elderly and handicapped. Thanks.
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	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 GoDurham.
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!
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.
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	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.
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	GoDurham.
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.
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 GoDurham 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   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.