2014 BC Transit Ridership Survey Report

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The Binghamton Metropolitan Transportation Study
& Broome County Transit

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Cover photo from Binghamton Metropolitan Transportation Study. Retrieved from http://www.bmtsonline.com/files/planning/busmap8_2012_web1.pd

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Executive Summary

This report summarizes and analyzes the data collected by the PAFF 510 Research Design Methods class at Binghamton University for the 2014 BC Transit Ridership Survey. The survey was created in order to measure characteristics of riders, demographics of riders, and satisfaction with bus services.

Students in PAFF 510: Research Methods collected survey data over the course of two weeks. Beginning October 26 and ending November 9, the students collected 568 surveys from 68 bus routes, which, after weighting for ridership levels, were randomly selected. The statistical analyses comparing these results to those in past years or were done using various methods, including t-tests, Chi-Square tests, and solving for Cramer's V. Significance tests were held to a customary .05 social science standard for determining the validity of relationships. The charts made with this data use total number of responses ($n_{responses}$) to calculate percentages, but ofte we also give the total number of respondents ($n_{respondents}$) in cases when individual respondents gave multiple answers.

One interesting piece of information from this survey is that 40% of riders reported paying with their Binghamton University ID card, an increase of about 5% from the 2011 survey results – identifying an important ridership population. However, there are substantial differences between the 2011 and 2014 survey instruments, and all comparisons between the two should be considered in that context.

The 2014 survey also found that, if bus service were not available, riders would be most likely to walk (23%), not make the trip (23%), get a ride (21%), or take a taxi (20%); only 4% of riders said they would drive. This demonstrates the importance of BC Transit services to riders. We found that 63% of the bus riders take anywhere from one to five minutes to reach the bus stop. As in the previous survey the most frequent transfer location was the BC Junction stop.

We asked the reasons that people ride the bus. From our data we saw that about 61% of our bus riders choose to ride the bus because they do not have a car. When asked about alternative transportation if bus service was unavailable, 25% stated they would walk and another 25% stated they would not make the trip.

Looking at the demographics from the data we collected we see that slightly more than half of the riders surveyed were white. The next highest ethnic group is African Americans at 24% of the respondents. In comparison to the 2010 Census, only 5.5% of the Broome County population identifies as African American yet African American riders makeup 24% of Public Transit ridership. Likewise, the 2010 Census found that 3.8% of Broome County residents identified as Hispanic and yet our study found 10% of all Broome County Public Transit riders identified as Hispanic. This displays a disproportional ridership in Broome County in terms of race relative to the population at large. The majority of our bus riders were males with 53% of our respondents, while females came in at 47% of our respondents.

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The ridership satisfaction part of the survey revealed that the majority of riders were satisfied with BC Transit. The areas with the highest ratings for dissatisfaction were bus frequency and timeliness; approximately 40% of the riders expressed some measure of dissatisfaction in this area. Rider dissatisfaction with bus frequency and timeliness increased by 5% since the 2011 report. Similar to the 2011 report, approximately 30% of riders were dissatisfied with the cleanliness of the bus.

A few questions asked about technology. The most intriguing of the tests was between riders' age and their rating of how easily the bus schedule can be obtained. Surprisingly, we found no relationship, which may indicate that riders at all ages access the schedule in different ways and with different levels of success.

On this survey there was the opportunity for riders to make open-ended comments. Overall, riders frequently commented that they would like for BC Transit to run later on weekends and increase frequency during the weekdays. We feel confident that the results of the 2014 survey will be very useful to BC Transit in making decisions both about the upcoming route survey and changes as well as decisions about marketing and service changes.

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Literature Review

Public Transportation is a key mode of travel for many citizens in different cities and counties. There are many factors that influence the use of public transportation, and different reasons that public transportation may be heavily utilized in some areas, while it is struggling in other areas. In this literature review, public transportation will be viewed through the lens of bus ridership. When analyzing bus ridership, there are many factors to keep in mind, such as why people ride the buses, who rides the buses, and how to get more bus riders. This paper will focus on reviewing literature that specifically focuses on these factors so we might learn from other places.

Why People Ride

The competition to public transportation is private, individual transportation. This comes most often in the form of car ridership. The major reason that people do or do not take public transportation is the availability of a car to them (Cevero, 1993; Neff, 2007; Valley Metro, 2014). In the Valley Metro Bus Ridership Survey, which is for the Phoenix area, the impact of car availability on public transportation use was quite evident, as their report stated "Among riders who said they are using public transit less often…having a car now [was] the top reason given by 31%" (Valley Metro 2014). Additionally, they found that for bus riders specifically, only 18% have access to a vehicle, meaning that 82% of bus riders in the Phoenix area do not have another option for transportation. This could point to the fact that they have no other option for transportation besides the bus. This holds true for United States bus ridership as a whole, as a study done by the American Public Transportation Association (APTA) found that "less than one-half, 45.4 percent, of public transportation riders have a vehicle available when deciding to make a transit trip" (Neff, 2007). While this is a much higher number of available vehicles than in Phoenix, it illustrates the point that most Americans who are taking the bus do not have an automobile available to them. This could mean that when an automobile becomes available, they are less likely to take public transportation. This concept of car ownership and its correlation to public transportation use could explain why major cities, such as New York City, see higher levels of public transportation use. "In the Bronx, for example, the vehicles per household rate range from 0.52 to 2.31 vehicles (NYCDOT 2004). It has also been found in other areas, such as California, that "for no-vehicle households…42.3 percent of trips were made by…transit versus only 3.5 percent of trips for households with three or more vehicles" (Cevero, 1993).

Another factor that plays a large role in why people ride buses is their economic status. An article by Mike Maciag in *Governing* states, "people who use public transportation are disproportionately poorer than other commuters in nearly every U.S. city" (Maciag, 2014). This is also illustrated in ridership demographics put together by CBS Outdoor (2012), which shows that the largest percentage of riders in Los Angeles, Miami, and Detroit were all from the lowest economic class. Maciag (2014) writes, "a third of New Orleans residents who commute via public

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transportation live in poverty, compared to 9 percent who drive cars." Part of this is due to the cost of owning and operating a vehicle being much higher than the cost of taking public transportation.

Who Rides

In addition to why people are riding the bus, another factor of interest is who is riding the bus. According to the National Household Transportation Study (NHTS), a survey by the Federal Highway Administration (FHWA), there are several factors of interest that help define a typical American public transportation rider. The most recent survey, completed in 2009, provides some interesting statistics for American transit use that affect our understanding of public transit users, including those who ride buses, in the United States. One important transit population identified by the study is the non-Hispanic black population. Of all travel by transit, non-Hispanic blacks make up 32.2%, despite only being 12.1% of the population as a whole. Interestingly, that population only uses transit for 3.0% of their travels, relying heavily on personally owned vehicles (POV) either as a driver or a passenger (Chu, 2012).

Another important market for transit, as defined by the NHTS, is the low to low-middle income population. This market is defined as making below $49,999 a year, and it amounts to 68.8% of the total transit ridership. However, unlike the non-Hispanic black population, this market uses transit for almost 7% of their travel, which is a significant amount in the United States where only 2.1% of travel is made via transit (Chu, 2012). Another large market for transit is zero-vehicle households. In America, people who live in zero-vehicle households use transit as their mode of travel 26.7% of the time and make up 48.5% of the overall transit use (Chu, 2012). One final important market represented by the NHTS survey is people travelling to and from work. According to the survey, 27.4% of transit use is for work or work related activities representing a significant share of travel (Chu, 2012). All of these populations represent a significant portion of American transit use.

Through these are national trends, one can easily see how they might impact Broome County and its transit offerings. Though the overall population of Broome County has decreased in the last 25 years, the non-Hispanic black population has nearly doubled in size from 4,333 in 1990 to 9,851 in 2006 (McGovern, 2008). Currently, this represents 4.8% of Broome County's population, the second highest race/ethnicity next to white (U. S. Census Bureau, 2010). Keeping in mind national trends, this increase should be noted, as non-Hispanic blacks are a large transit market. Beyond race, in Broome County, 53.9% of the population lives in a household that makes below $49,999 annually. This is a very high number, and, according to national trends, should notably affect the number of people who ride the bus (U. S. Census Bureau, 2012). In addition, Binghamton has 10.5% zero-vehicle households (Hwang, Wilson, Reuscher, Chin, and Taylor, 2014). This population, statistically, should also be represented heavily in the population of people who use transit. Finally, the population of people commuting to and from work is about 45% of the working population of Binghamton. Though this is usually a large factor in bus ridership, as this number is

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not especially high, it may not have the kind of impacts we have come to expect nationally (U. S. Census Bureau, 2012).

While these demographics statistics are essential, a study by the APTA also provided other ridership factors that help to define a typical rider. To this end, we are also concerned with trying to ascertain other helpful information such as the most common reasons for the use of public transportation, which showed that 59.2% of riders were using the systems to travel to work, 10.6% were traveling to school, 8.5% of riders were going shopping or dining, 6.3% were conducting personal business, 6.7% reported using public transportation for a social purpose, 3% of trips were for medical reasons, and the remaining 5.7% reported "other" for the purpose of their trip (APTA, 2007). Another variable of interest is if they had alternative means of transportation available, which 45.5% of riders reported having (APTA, 2007). Also, how frequently riders reported using the public transportation system is of great interest. This study found that 81.2% of the ridership used public transportation 3 or more days per week, with 65.5% of riders riding 5 or more days per week (APTA, 2007).

Another interesting piece of datum supplied by the APTA is how people get to their destination if their chosen mode of roadway public transit no longer operated. 40.9% of people said that they would either drive themselves or find a ride, implying that even people who have other options see public transit as valuable and worthwhile enough to take. However, 23.8% of respondents reported that they would simply not take the trip, showing the reliance a lot of people have on public transit (Neff and Pham, 2007). This illustrates the difference between the "need to ride" and "want to ride" populations who take the bus. While some people have alternative modes of transport in America, there are those who have no option but public transit. These two populations are very different and therefore may have different needs in terms of public transit.

In markets similar to Broome County, we can find even more data that help us understand metropolitan Broome County ridership. For one, Broome County, and the City of Binghamton specifically, have a lot of student activity and ridership (Binghamton Metropolitan Transportation Study, 2009). Interestingly, a study of college towns and transit ridership found that in communities with a large amount of college students, population density is one of the most important factors affecting ridership. As students tend to aggregate in small areas (e.g. student apartment complexes, off-campus academic facilities) the population density of certain areas should significantly impact routes and frequency in college towns. Though this study focuses on a college town in Massachusetts, the findings may help inform some practice in Broome County. Because students are essentially commuters that tend to live in clusters in specific areas, the article argues that using just data on employment, income, and housing is not enough to accurately represent the population a bus system might seek to serve (Oldread, 2011). All of these factors add up to a complicated portrait of a Broome County rider, one that we hope to further explore in the 2014 BC Transit ridership survey

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Increasing Ridership

In order to increase bus ridership, transit systems must take rider comfort into consideration including safety, perception of the system, friendliness of the driver, and welcoming bus environment. In regards to the riders' level of comfort, the Federal Transit Administration's database provides any past plans to increase ridership for a variety of public transportation systems (continuously updated). According to the database, the South Bend Transportation Corporation (TRANSPO) began to focus on rider safety through driver training programs and safety familiarity, which resulted in about a 10% increase in ridership in a two-year span (Federal Transit Administration, 2004).

Another form of rider comfort is in the theory of incentive, where riders believe they are gaining from their experience. On the FTA's database, the Nantucket Regional Transit Authority suggests a rider incentive program such as the one their agency provides called "Do the Ride Thing" (2004). The idea of the program is to promote a car-reduced city where riders choose another mode of transportation (Federal Transit Administration, 2004). Throughout the day, when a consumer chooses to ride the bus, walk, or ride a bicycle, they are entered into a drawing for a variety of donated prizes from local businesses (Federal Transit Administration, 2004). According to the FTA, Nantucket's program increased ridership within a three-year time span (2004).

Most of these suggestions can become successful if the riders' perception of the public transportation system is positively maintained. The Kansas City Regional Transit Alliance's article, "Building Ridership: Make Transit Fun, Attractive", highlights the inventive tactic of Boulder, Colorado's public transportation system to improve their image (2014). The simple concept of making buses colorful and attractive along with creating bus names such as "Hop, Skip, Jump, Bound, Bolt, Dash, and Stampede" seem to grasp the attention of not only children but adults as well (Kansas City Regional Transit Alliance, 2014). Along with the creative names and bus décor, the buses also play satellite radio in the background for their riders (Kansas City Regional Transit Alliance, 2014). Though the idea of satellite radio seems appealing, it may not be a cost effective marketing concept for all cities. The strategies based on rider comfort play a role in the fluctuation of ridership; however, they are not the only concepts that must be incorporated for the highest success rate of the individual public transportation system.

Rider dissatisfaction often lies with the timeliness of the buses, bus schedule, and route availability. In order to increase ridership, the individual public transportation system must appeal to the ridership base, attracting the consumers within the agency's service area. According to the 2011 BC-Transit Rider Survey Report, Binghamton University students were most concerned with the dissatisfaction portrayed by riders in the area of route regularity (Handy et. al., 2012). To increase ridership in this area, it is imperative to survey riders on which routes they typically take. In theory, it would be necessary to ask riders which routes they would like to see the given public transportation system incorporate in their program.

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The Greater Bridgeport Transit's article, "Top 10 Growth in Ridership" highlights the notion that their region's employment rate has increased, requiring the system to incorporate more downtown and business routes to designated areas (2009). The article also describes the idea of an increase in ridership requiring the agency to make some changes in their buses to keep consumers satisfied, such as newer buses to avoid maintenance issues (Greater Bridgeport Transit, 2009). In the same respect, Community Transit illustrates the idea that ridership can be maintained or even increased by "strategically cutting unproductive service", meaning that routes can be cut based on their amount of ridership (2013). If a route is not utilized often and another route is visibly in need of an increase in transport, the agency may be obligated to cut one route in order to run the latter route more frequently. Eric Jaffe (2012) writes about a "multi-destination" approach within the Broward County transit system that brings consumers to their workplace rather than a general area for drop-off. Jaffe highlights the idea that often times public transportation systems focus on bring its riders to general areas rather than specific drop-off spots. In other words, multiple bus stops can be incorporated into the routes to make multiple business stops for employees. Again, this method may only work in cities where there is a higher employment rate. This suggestion implies that the riders' desired end destination is their workplace and the transportation system must allot time in the schedule for these stops.

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References

Associates, Inc.. (2004). NYCDOT Bus Ridership Survey and Route Analysis. *Technical Memorandum*, *N/A*. Retrieved September 23, 2014, from http://www.nyc.gov/html/dot/downloads/pdf/dotbusrsra.pdf

Binghamton Metropolitan Transportation Study (2009). *Transportation tomorrow: 2035 creating a sustainable future*. Retrieved from http://www.bmtsonline.com/bmts/long-range-plan-2035

CBS Outdoor. (2012). Transit Ridership Demographics. *Transit Ridership Demographics*. Retrieved September 23, 2014, from http://www.cbsoutdoor.com/tools/research_roi/transitridershipdemographics.aspx

Cevero, R. (1993). Ridership Impacts of Transit-Focused Development in California. *University of California Transportation Center*. Retrieved September 23, 2014, from http://www.uctc.net/papers/176.pdf

Chu, X. (2012). An assessment of public transportation markets using NHTS data. *National Center for Transit Research at CUTR*. Retrieved from: http://ntl.bts.gov/lib/44000/44400/44409/77920.pdf

Community Transit. (2013). Community transit plans to increase ridership. Community Transit. Retrieved from https://communitytransit.org/newsrelease/1517.

Federal Transit Administration. (2004). Innovative practices for increased ridership. United States Department of Transportation. Retrieved from http://ftawebprod.fta.dot.gov/BPIR/BestPractices/BP-Search.aspx.

Greater Bridgeport Transit. (2009). Top 10 growth in ridership. Greater Bridgeport Transit: Bridgeport, CT. Retrieved from http://gogbt.com/index.php?page=top-10- growth-in-ridership.

Group Research. (2014). 2014 Rider Satisfaction Survey Total Market. *Valley Metro*, *N/A*. Retrieved September 23, 2014, from http://www.valleymetro.org/images/uploads/agency_transitresearch/Rider_Sat_2014_FINAL_Report_5_29_2014.pdf

Handy, A., Halman, A., Marshall, C., & Gu, Z. (2012). 2011 BC Transit rider survey report. Binghamton University: Binghamton, NY.

Hwang, H. L., Wilson, D. W., Reuscher, T., Chin, S. M., & Taylor, R. D. (2014). *A pilot study to explore origin-destination passenger travel flow patterns at sub-county Level* (No. ORNL/TM-2014/233). Retrieved from: http://info.ornl.gov/sites/publications/files/Pub50188.pdf

Jaffe, E. (2012). What really matter for increasing transit ridership. The Atlantic Monthly Group. Retrieved from http://www.citylab.com/commute/2012/05/what-really-matters-increasing-transit-ridership/2059/.

Maciag, M. (2014, February 25). Public Transportation's Demographic Divide. *Public Transportation's Demographic Divide*. Retrieved September 30, 2014, from http://www.governing.com/topics/transportation-infrastructure/gov-public-transportation-riders-demographic-divide-for-cities.html

McGovern, B. (2008). *Profile of the minority population Broome County, New York* (Unpublished seminar paper, Binghamton University). Retrieved from http://gis.binghamton.edu/BroomeMinorityReport.pdf

Neff, J., & Pham, L. (2007). *A profile of public transportation passenger demographics and travel characteristics reported in on-board surveys*. American Public Transportation Association. Washington, DC. Retrieved from: http://www.apta.com/resources/statistics/Documents/transit_passenger_characteristics_text_5_29_2007.pdf

Oldread, K. (2011). *How well do neighborhood characteristics predict transit ridership in a college town?* (Doctoral dissertation, University of Massachusetts Amherst). Retrieved from: http://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1555&context=theses

Transit Works. (2014). Building ridership: Making transit fun, attractive. Kansas City Regional Transit Alliance. Retrieved from http://www.transitworksforus.org/building-ridership-make-transit-fun-attractive/.

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U. S. Census Bureau (2010). *Profile of general population and housing characteristics: Broome County, N.Y.* Retrieved September 26, 2014, from http://factfinder2.census.gov/bkmk/table/1.0/en/DEC/10_DP/DPDP1/0500000US36007

U. S. Census Bureau (2012). *Selected economic characteristics: Broome County,* Retrieved September 26, 2014, from http://factfinder2.census.gov/bkmk/table/1.0/en/ACS/12_5YR/DP03/0500000US36007

U. S. Census Bureau (2013). *ACS Demographic and Housing Estimates 2011-2013 American Community Survey 3-Year Estimates: Broome County, N.Y.* Retrieved December 5, 2014, from http://factfinder2.census.gov/faces/ tableservices/jsf/pages/productview.xhtml?pid=ACS_13_3YR_DP05&prod/Type=tableDocuments/transit_passenger_characteristics_text_5_29_2007.pdf

U. S. Census Bureau (2013). *Age and Sex 2013 American Community Survey 1-Year Estimates: Broome County, N.Y.* Retrieved December 5, 2014, from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_1YR_S0101&prodType=table

U. S. Census Bureau (2013). *Selected Economic Characteristics 2011-2013 American Community Survey 3-Year Estimates: Broome County, N.Y.* Retrieved December 5, 2014, from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_3YR_DP03&prodType=table

U. S. Census Bureau (2013). *Selected Social Characteristics in the United States 2013 American Community Survey 1-Year Estimates: Broome County, N.Y.* Retrieved December 5, 2014, from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_1YR_DP02&prodTyp e=table

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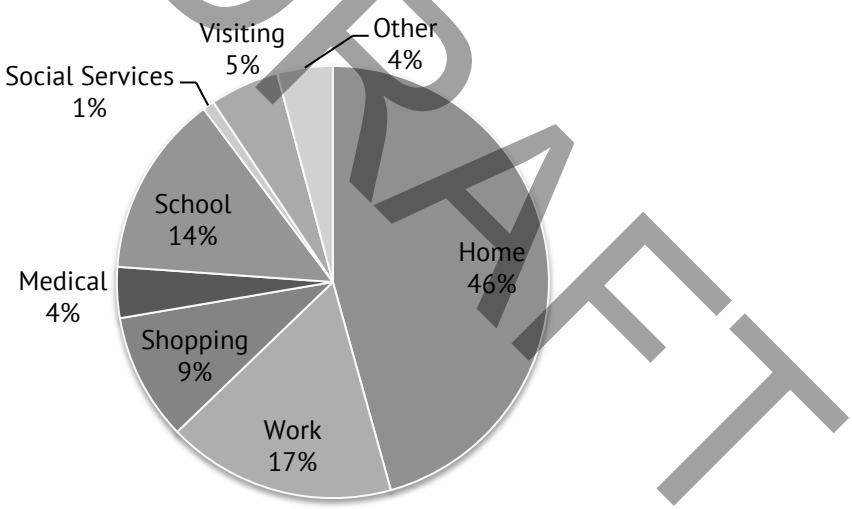
Survey results

Today's Ride

Two questions provided information regarding where riders were coming from as well as information about their trip's destination. The top three places riders were both coming from and headed to in the 2014 survey were home (approximately 46% to and 33% from), work (approximately 17% to and 18% from), and school (approximately 14% to and 16% from). The results from the 2009 and 2011 survey results varied slightly from the results in the 2014 survey due to a change in the language of the question. In 2009 and 2011, the question was, "What is the purpose of today's trip?" while the current 2014 survey asked specifically about origins and destinations. Because of this, comparisons to previous years data are not possible.

Note: The charts made with this data use $n_{responses}$ to calculate percentages, but $n_{respondents}$ is also given to indicate when singular respondents gave multiple answers.

Question 1: Regarding this bus trip – where are you COMING FROM?



$n_{responses}$ = 578 $n_{respondents}$= 562

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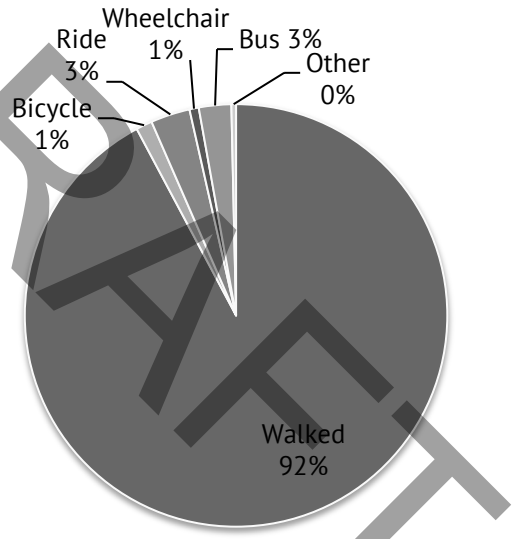
The 2014 Ridership Survey revealed many similarities to the 2011 survey. In the 2014 survey, it took 63% of riders between one and five minutes to get to the bus stop and 87% of riders ten minutes or less to get to their bus stop. In the 2011 survey, a comparable 65% of riders took between one and five minutes to get to the bus stop and 80% of riders took ten minutes or less to get to their stop (Handy, et. al., 2012). The 2014 survey also indicated that walking is the most prevalent form of transportation to the bus stop (approximately 92% in the current survey), which is similar to the 2011 survey, which indicated that 94% of people walked to the bus. In regards to this question, another section was added in the results of the 2014 survey for those who took another bus to get to the bus stop based on the number of "other" responses and comments pertaining to this response.

Question 2: How did you get to the bus stop today?



$n_{responses}$ = 565 $n_{respondents}$= 564

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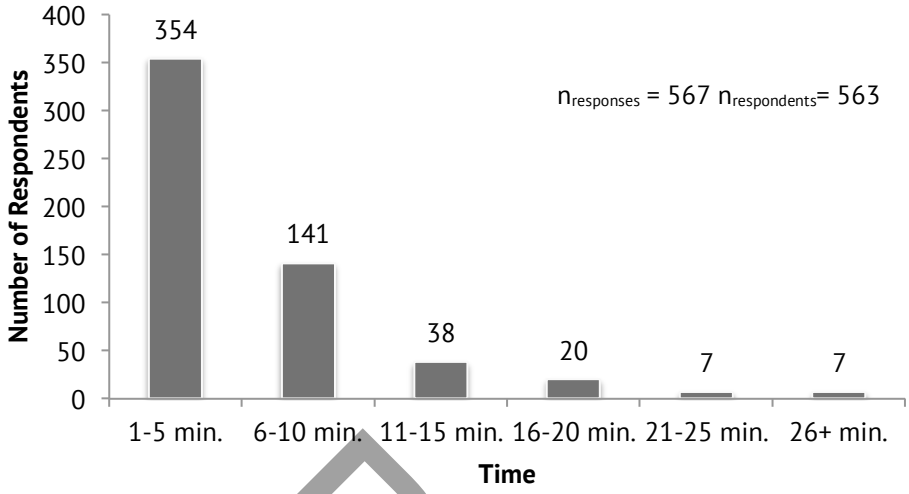
Question 3: How long did it take you to reach the bus stop today?



Percentage of respondents:	**62.4%**	**24.9%**	**6.7%**	**3.5%**	**1.2%**	**1.2%**

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Question 4: Where did you get on the bus?

A qualitative data analysis was performed to determine where riders were boarding the bus. It was an open-ended question. Therefore, the analysis called for a coding scheme that would allow for a good interpretation of the data. Responses were first separated based on the nature of the responses.

Location refers to point of reference along a bus route. Places of business and major areas of attraction (e.g. BC Junction, the mall, etc.) were grouped together to create this category. Whenever possible, items referring to the same location (e.g. "University Union," and "Bing Uni") were re-coded and consolidated for ease of interpretation. The table below (Primary Boarding Location) shows the first few items that had 10 or more responses. The remaining locations, each consisting of less than 10 responses, were lumped together to create the sub-category labeled "Other". As illustrated "Binghamton University" was the most frequent response.

Table – Primary Boarding Location

Location	Number of Responses	Percentage of Responses
Binghamton University	48	28.6%
BC Junction	61	36.3%
University Plaza	13	7.7%
Oakdale Mall	10	6.0%
Other	36	21.4%
Total responses	168	

References to a street or avenue were grouped together to create a second category. Whenever possible, items referring to the same location (e.g. "Main," and "Main Street") were re-coded and consolidated for ease of interpretation. The table (Primary Boarding Street/Avenue) below shows the first few items that had 10 or more responses. The remaining streets/avenues, each consisting of less than 10 responses were lumped together to create the sub-category labeled "Other". As illustrated "Main Street" was the most frequent response.

Table – Primary Boarding Street/Avenue

Street Avenue	Number of Response	Percentage of Responses
Main Street	87	26.0%
Vestal Avenue	28	8.4%
Washington Avenue	21	6.3%
Front Street	17	5.1%
Floral Avenue	16	4.8%
North Street	13	3.9%
Leroy Street	11	3.3%
Other	142	42.4%
Total responses	335	

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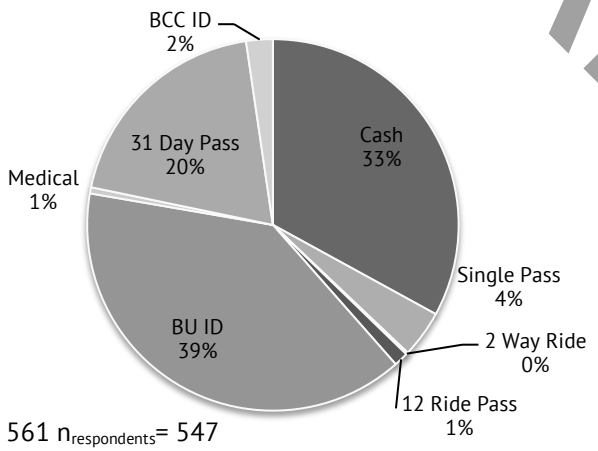
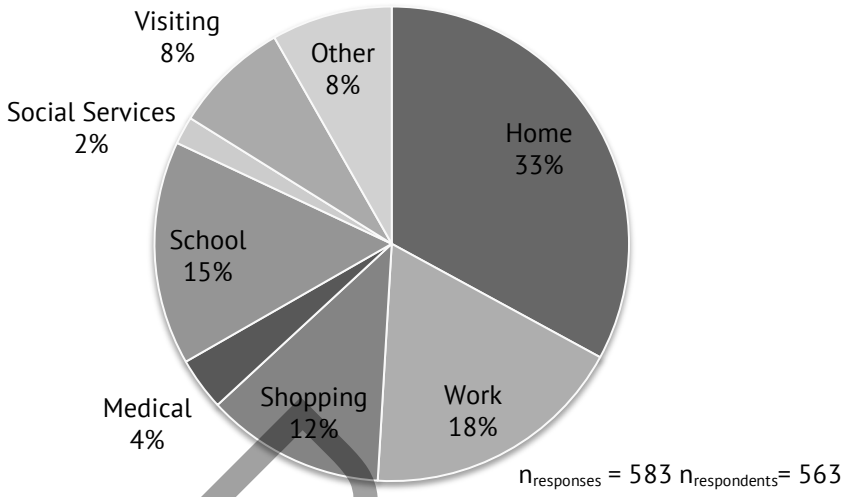
Question 5: How did you pay your fare today?



$n_{responses}$ = 561 $n_{respondents}$= 547

Not surprisingly, almost 40% of riders utilized their Binghamton University ID and another 2.3% used their SUNY Broome ID as a method of payment for the rider fare. (Note that use of a SUNY Broome ID was not one of the choices on the survey instrument and this omission may have resulted in an undercount of these students.) Nearly 33% pay with cash. Interestingly, 19% used the 31-day bus pass as a means of paying for the fare – Broome County Public Transit does have a steady ridership of individuals who are consistent riders.

Question 6: Regarding this bus trip – where are you GOING?



Question 7: Where will you get off of the bus?

A qualitative data analysis was performed to determine where riders were getting off the bus. It was an open-ended question. Therefore, the analysis called for a coding scheme that would allow for a good interpretation of the data. Responses were first separated based on the nature of the responses.

Location refers to point of reference along a bus route. Places of business and major areas of attraction (e.g. BC Junction, the mall, etc.) were grouped together to create this category. Whenever possible, items referring to the same location (e.g. "University Union," and "Bing Uni") were re-coded and consolidated for ease of interpretation. The table below shows the locations items that had 10 or more responses. The remaining, each consisting of less than 10 responses, were lumped together to create the sub-category labeled "Other". As illustrated "Binghamton University" was the most frequent response.

Table – Primary Destination Location

Location	Number of Responses	Percentage of Responses
Binghamton University	78	26.1%
BC Junction	67	22.4%
Mall	33	11.0%
Walmart	16	5.4%
University Plaza	14	4.7%
SUNY Broome	13	4.3%
Parkway Plaza	13	4.3%
Other	65	21.7%
Grand Total	299	

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References to a street or avenue were grouped together to create a second category. Whenever possible, items referring to the same location (e.g. "Main," and "Main Street") were re-coded and consolidated for ease of interpretation. The table below shows the first few items that had 10 or more responses. The remaining streets/avenues, each consisting of less than 10 responses were lumped together to create the sub-category labeled "Other". As illustrated "Main Street" was the most frequent response.

Table – Primary Destination Street/Avenue

Location	Number of Responses	Percentage of Responses
Main Street	61	27.2%
Washington Street	15	6.7%
Vestal Avenue	10	4.5%
Other	138	61.6%
Grand Total	224	

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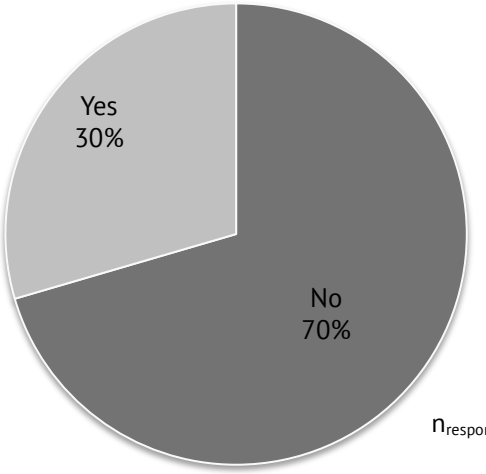
Question 8: Do you need to transfer buses today?



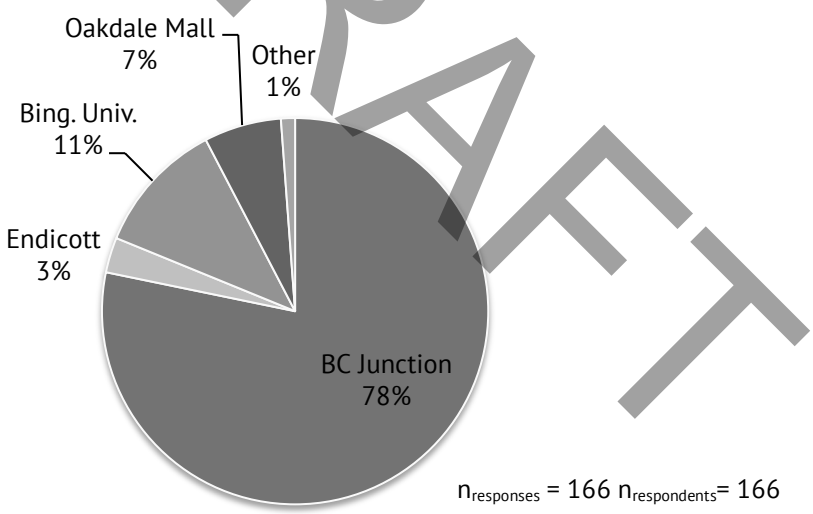
$n_{responses}$ = 556 $n_{respondents}$= 555

Question 8a: If yes, how many times did you/will you transfer?

	Number of Respondents	Percentage of Respondents*
1 transfer	108	75%
2 transfers	28	19%
3 transfers	3	2%
4 transfers	4	3%
More than 4	1	1%

(166 respondents answered yes to question 8, but only 144 answer this question.)

Question 8b: If yes, where did you transfer?



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Question 9: If bus service were not available, how would you make this trip?

	Number of Respondents	Percentage of Respondents*
Drive	25	4%
Ride with Someone	135	21%
Taxi	127	20%
Bicycle	28	4%
Walk	149	23%
Would not make this trip	146	23%
Other	25	4%

** Percentages were rounded to the nearest number.*
(n = 635)

The category for "Other" yielded responses such as: OCCT (n = 12), Don't Know or Unsure (n = 5), and Motorcycle (n = 1).

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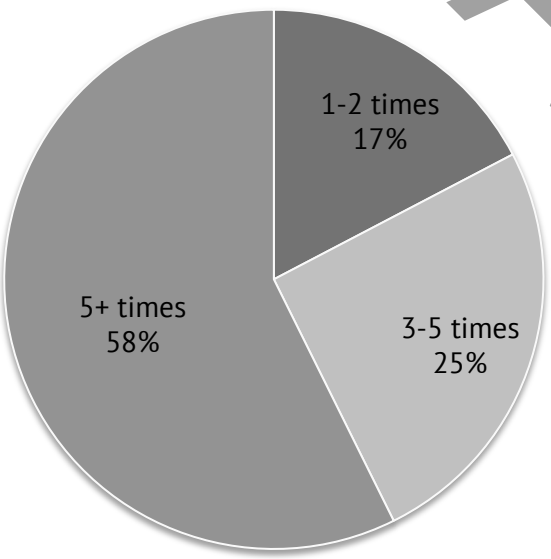
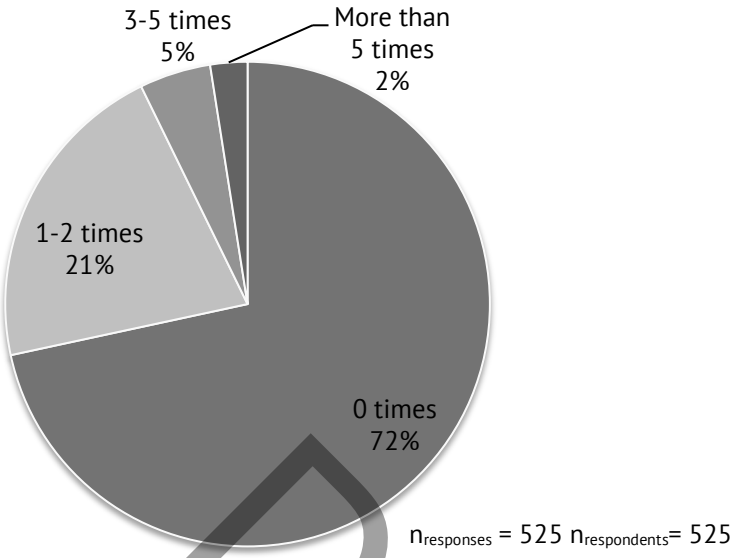
Question 10: How often have you used BC Transit in the past week?



$n_{responses}$ = 530 $n_{respondents}$= 530

Almost 60% of riders reported using the bus service 5 or more times a week. Hence, when considering that more than 70% of riders reported not using cab services (question 11) and about 60% do not have access to a vehicle (question 12), it can be concluded that the majority of people using bus services rides because they *need* the service. This may be a result of the substantially lower than median income of the riders surveyed.

Question 11: How often have you used a taxi in the past week?



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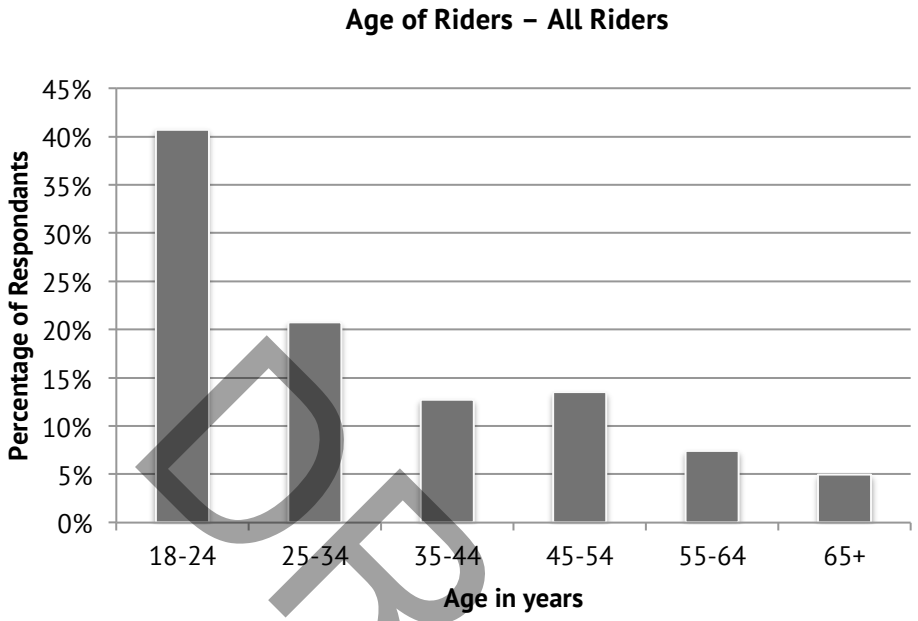
Question 12: What is the most important reason you ride the bus?

	Number of Respondents	Percentage of Respondents*
No car available	374	62%
Bus is more convenient	70	12%
Bus is cheaper	95	16%
No convenient parking	3	1%
Protect the environment	17	3%
I would rather ride the bus than drive a car	33	5%
Other	15	3%

The category for "Other" yielded responses such as: don't/can't drive or no license (n = 3), "It's my only way (whole life) to get anywhere" (n =1), and "I can read on the bus, can't read while driving" (n = 1).

Who's Riding

Question 13: How old are you?



$n_{responses}$ = 526 $n_{respondents}$= 526

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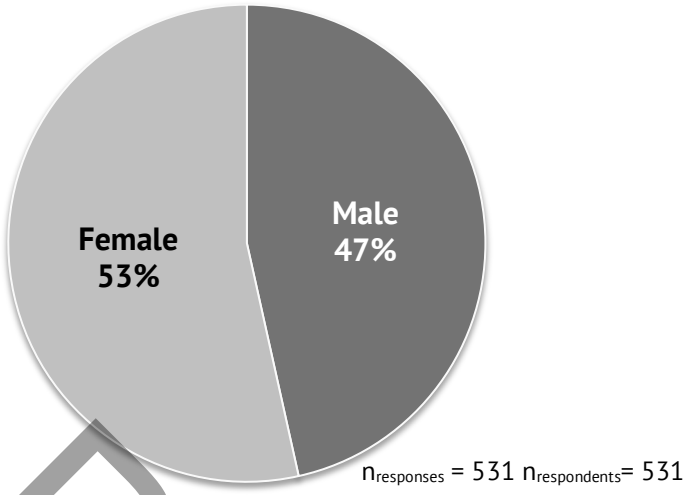
Below we include the age distribution of riders not paying with a BU ID in order to compare the results to the county as a whole. This creates a potential for error with Broome County residents who attend and work at Binghamton University, but may allows us to understand non-Bu affiliated ridership.

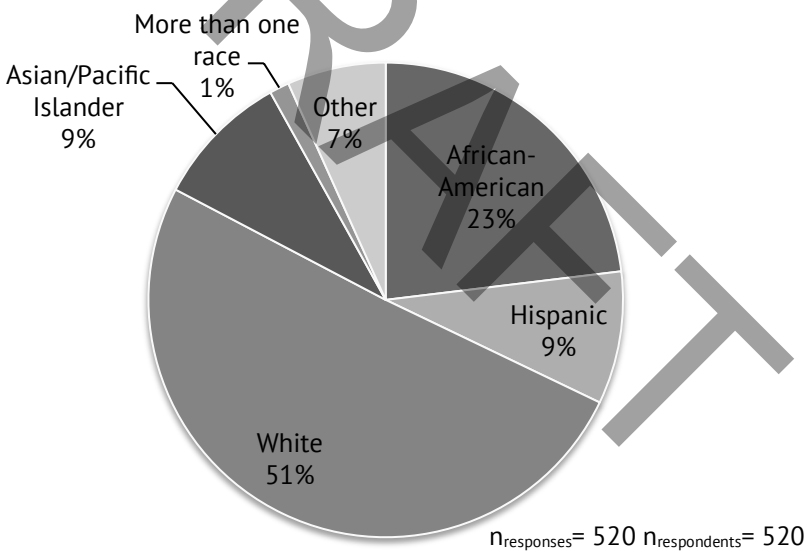
Age range	All riders	Riders not paying with a BU ID	Broome County residents (US Census 2010)
18 to 24	41%	22%	9%
25 to 34	21%	22%	11%
35 to 44	13%	18%	15%
45 to 54	14%	19%	25%
55 to 64	7%	11%	20%
65 to 74	7%	7%	13%
75 to 84	1%	1%	7%

A chi-square test on the age responses from riders not paying with a BU ID versus the age demographics reported by the U.S. Census in 2010 shows a statistically significant difference in the age of bus riders from the community (*p=2.7E-44*). Ridership in the range of 18-44 years old was much higher than expected based on the ages of the community, while the riders in the ranges of 55+ was lower.

Question 14: Gender of Bus Riders



Question 15: Race / Ethnicity of Bus Riders



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Again, we filtered out the responses of bus riders who did not use a BU ID to pay and compared that number to the county as a whole as shown the table below. Once again, we found that the there was a statistically significant difference between transit riders and Broome County residents. (*p<0.05, =8.7E-120*). The largest difference was seen in African American respondents with over 25% of the survey respondents reporting being African American and less than 5% the of community. The Census also reports the Hispanic portion of the community at less than 4% and rider responses were almost 8%. Please note that Asian category was left off of the bus survey and so those totals might be under reported.

Race / Ethnicity	All riders	Riders no BU ID	Broome County residents (2010 US Census)
White	51%	56%	88%
African-Am	23%	25%	5%
Hispanic	9%	8%	3%
Asian	9%	1%	4%
Other	7%	10%	0%

(Percentages are rounded to nearest whole number.)

Question 16: Do you own a smart phone?

	Smartphone*					
	Number of Students	Percentage of Respondents	Number of Community Members	Percentage of Respondents	Overall	Percentage of Respondents
No	46	23%	151	47%	371	29%
Yes	155	77%	168	53%	155	71%
Did not respond	18 (8%)		28 (8%)		40 (7%)	

** Percentages were rounded to the nearest whole number*
(Students, n = 201; Community Members, n = 319; Overall, n = 520)

Question 16a: Do you have Internet access at home?

	Internet					
	Number of Students	Percentage of Respondents	Number of Community Members	Percentage of Respondents	Overall	Percentage of Respondents
No	16	11%	83	33%	99	25%
Yes	131	89%	170	67%	301	75%
Did not respond	72 (33%)		94 (27%)		166 (29%)	

Most respondents reported having internet access either at home or via smartphone. Almost 32% of respondents did not answer the question on home internet. This may have been due to the placement of the question in the survey instrument, and not due to people choosing not to respond. This does significantly reduce the reliability of the home internet response. Even if all the surveys that did not respond to home internet question do not have internet at home, we know that almost half of the riders have home internet.

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Question 17: Is there a car in your household?

	Car					
	Number of Students	Percentage of Respondents	Number of Community Members	Percentage of Respondents	Overall	Percentage of Respondents
No	119	59%	252	78%	371	71%
Yes	84	41%	71	22%	155	29%
No Response	16 (7%)		24 (7%)		40 (7%)	

(Students, n = 203; Community Members, n = 323; Overall, n = 526)

The majority of bus riders (70%) reported not having a car. Student riders reported at a lower percentage of 58% while non-student riders reported not having a car at 77%. This is in line with responses to the main reason for riding the bus with 61.6% reporting their main reason for riding was not having a car and only 4% reported that if bus services were not available they would drive.

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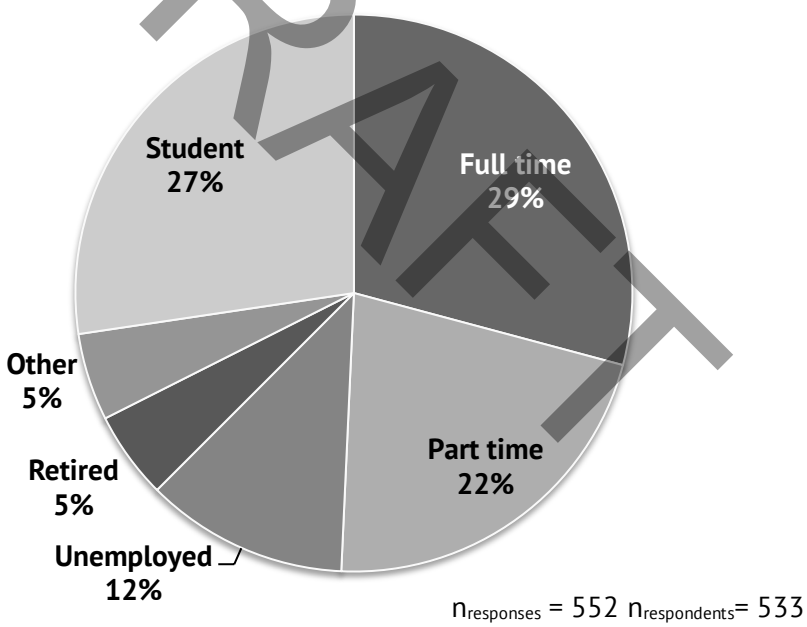
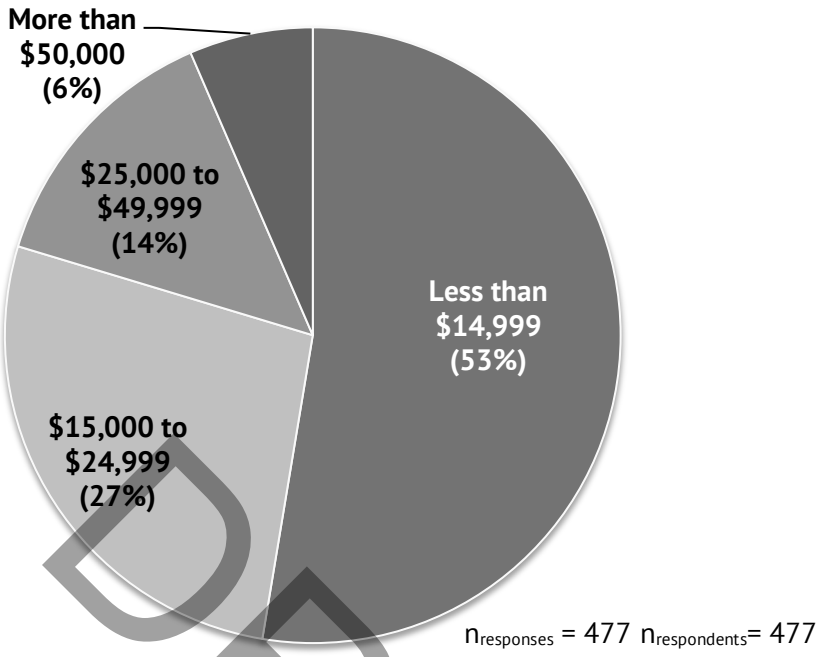
Question 18: What is your employment status?



The category for "Other" included responses such as: disabled (n = 12), homemaker (n = 1), self- employed (n = 1), and volunteer (n = 2).

Question 19: What is the annual income of your household?



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Comparing the Income Distribution of Riders to Broome County Residents

Comparing income level to reason for riding, the relationship is shown to be statistically significant at the .05 level. This may be relevant when designing marketing for BC Transit, as those with different income levels are likely to respond to different kinds of campaigns because of their different motivations for riding.

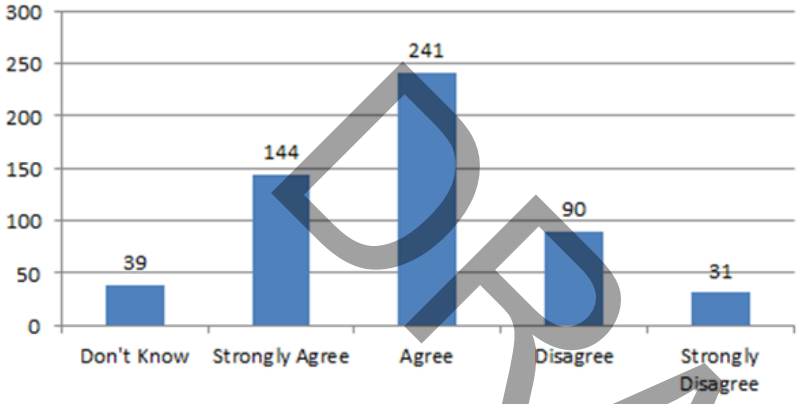
Group	**Income**			
	Less than $14,999	*$15,000 to $24,999*	*$25,000 to $49,999*	*More than $50,000*
BC Transit Riders	53%	27%	14%	6%
Broome County residents	15%	14%	25%	46%

Evaluation of Today's Ride

For questions 20 through 31 of the survey, respondents were asked to evaluate their satisfaction or dissatisfaction with BC Transit's services. The respondents indicated their satisfaction level on a Likert scale "Strongly Agree," "Agree," "Disagree," "Strongly Disagree," or "Don't Know." This differs from the 2011 BC Transit bus survey, as we chose to eliminate the option of "Neutral," and to include the "Don't Know."

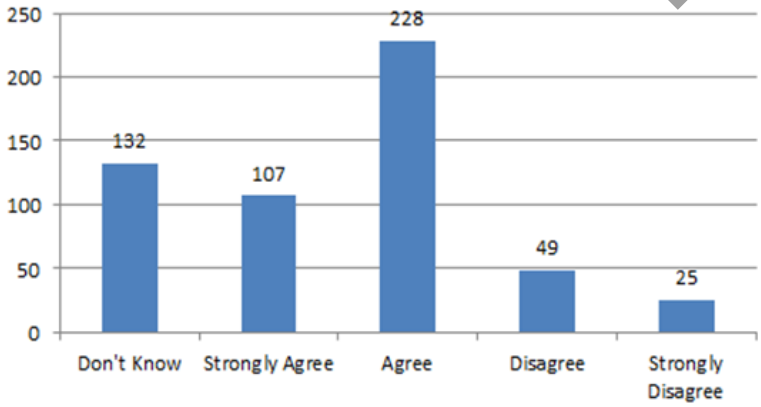
Note: In all of the tables below, the 2011 percentages do not add up to 100% because we have omitted the Neutral response.

Question 20: The Bus Fare is Reasonable



Bus Fare Is Reasonable		
	2014	2011
Strongly Agree	26%	25%
Agree	44%	24%
Disagree	17%	10%
Strongly Disagree	6%	10%
Don't Know	7%	12%

Question 21: It is Easy to Purchase Swipe Cards



It Is Easy to Purchase Swipe Cards		
	2014	2011
Strongly Agree	20%	22%
Agree	42%	16%
Disagree	9%	6%
Strongly Disagree	5%	11%
Don't Know	24%	31%

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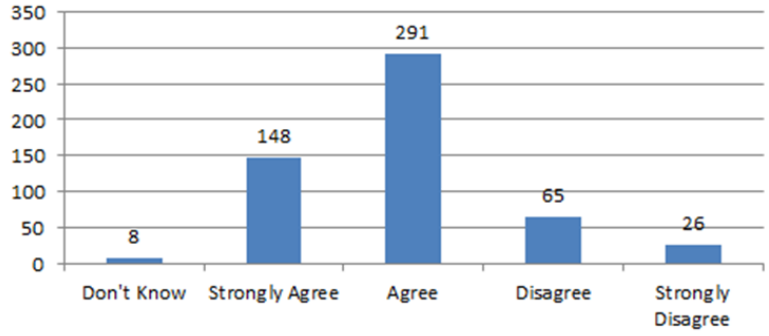
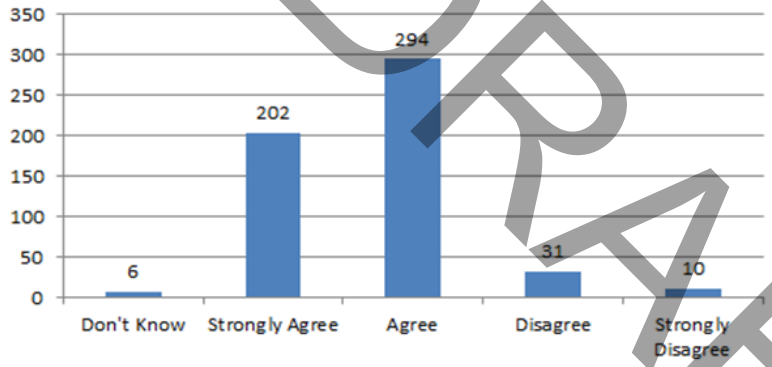
Question 22: The Schedule is Easy to Understand



The Schedule is Easy to Understand		
	2014	2011
Strongly Agree	28%	27%
Agree	54%	28%
Disagree	12%	11%
Strongly Disagree	5%	13%
Don't Know	1%	1%

Question 23: The Schedule is Easy to Obtain



The Schedule is Easy to Obtain		
	2014	2011
Strongly Agree	37%	41%
Agree	54%	23%
Disagree	6%	8%
Strongly Disagree	2%	12%
Don't Know	1%	1%

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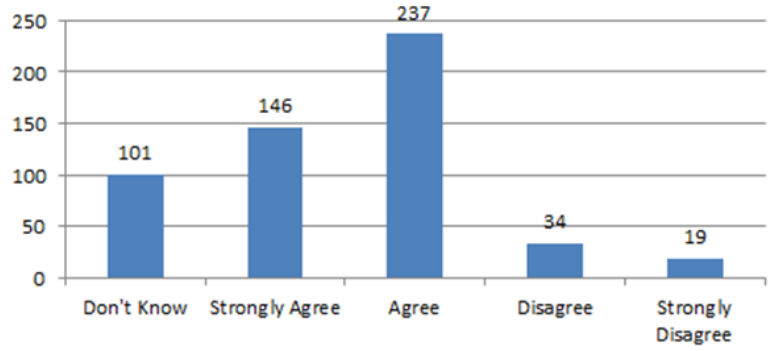
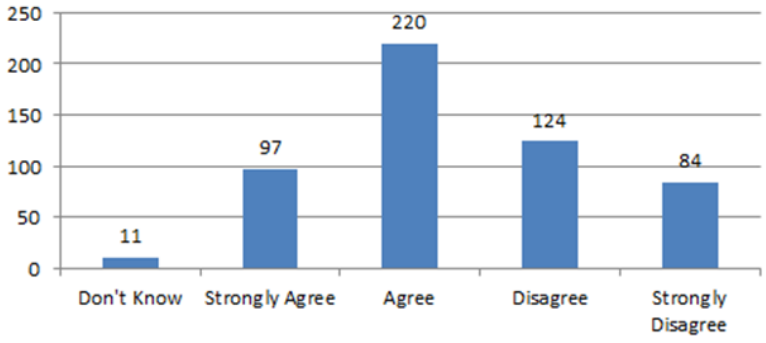
Question 24: The Website is Easy to Understand



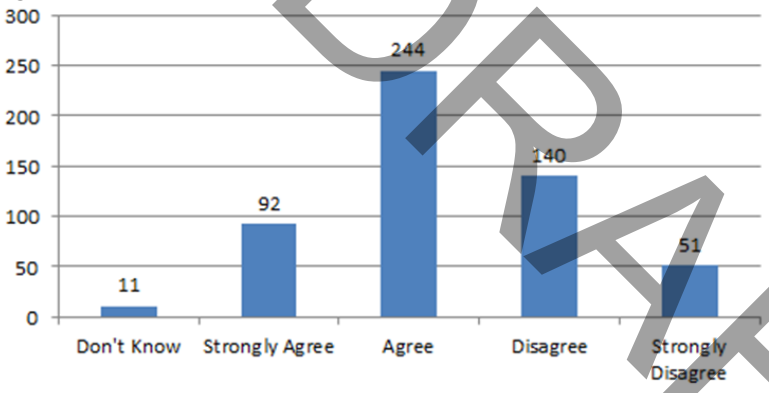
Website Easy to Understand		
	2014	2011
Strongly Agree	27%	21%
Agree	44%	24%
Disagree	6%	9%
Strongly Disagree	3.5%	10%
Don't Know	19%	27%

Question 25: Buses are Frequent Enough to Meet My Needs



Buses Frequent Enough		
	2014	2011
Strongly Agree	18%	15%
Agree	41%	24%
Disagree	23%	19%
Strongly Disagree	16%	16%
Don't Know	2%	1%

Question 26: Buses are On-Time



Buses Are On Time		
	2014	2011
Strongly Agree	17%	14%
Agree	45%	25%
Disagree	26%	24%
Strongly Disagree	9%	12%
Don't Know	2%	1%

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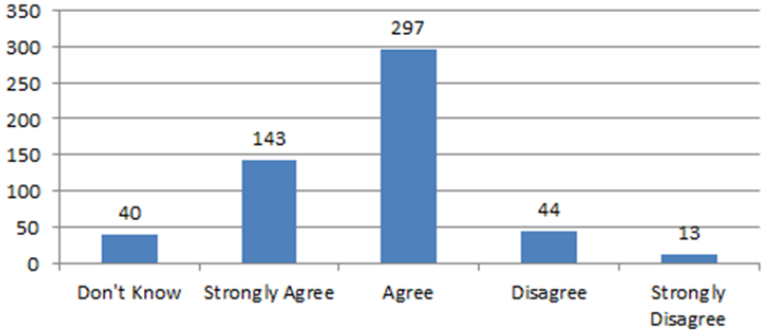
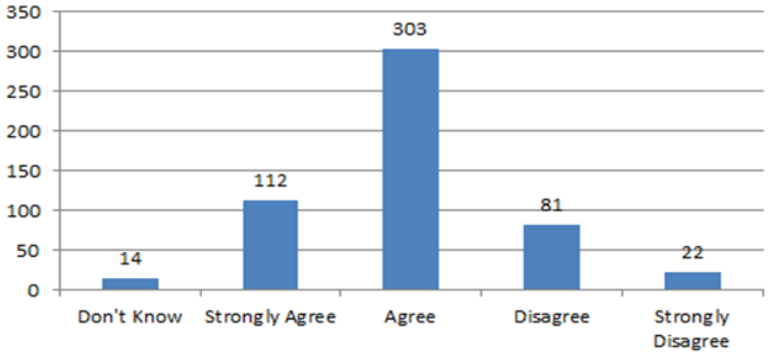
Question 27: Bus Drivers are Knowledgeable About Services



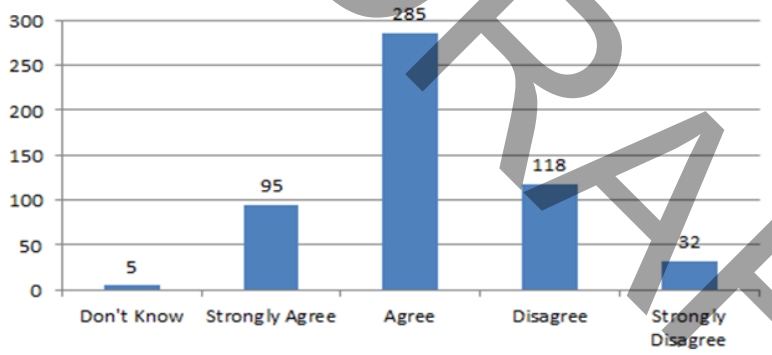
Drivers Are Knowledgeable		
	2014	2011
Strongly Agree	27%	23%
Agree	55%	29%
Disagree	8%	13%
Strongly Disagree	2%	10%
Don't Know	7%	8%

Question 28: Bus Drivers are Courteous



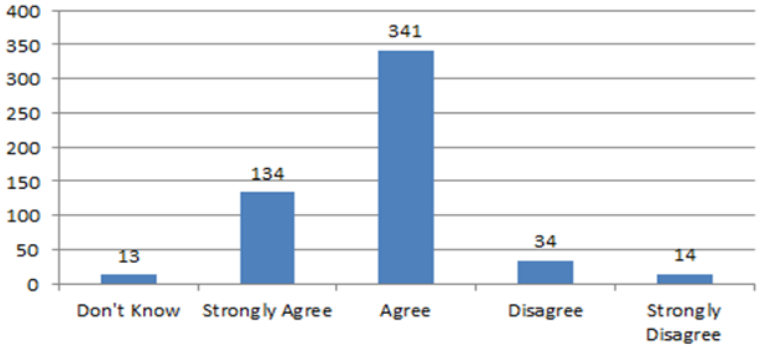
Drivers Are Courteous		
	2014	2011
Strongly Agree	21%	23%
Agree	57%	20%
Disagree	15%	15%
Strongly Disagree	4%	11%
Don't Know	3%	3%

Question 29: Buses are Clean



Buses Are Clean		
	2014	2011
Strongly Agree	18%	19%
Agree	53%	27%
Disagree	22%	16%
Strongly Disagree	6%	11%
Don't Know	1%	1%

Question 30: I Feel Safe on the Bus



I Feel Safe on the Bus		
	2014	2011
Strongly Agree	25%	28%
Agree	64%	33%
Disagree	6%	10%
Strongly Disagree	3%	10%
Don't Know	2%	1%

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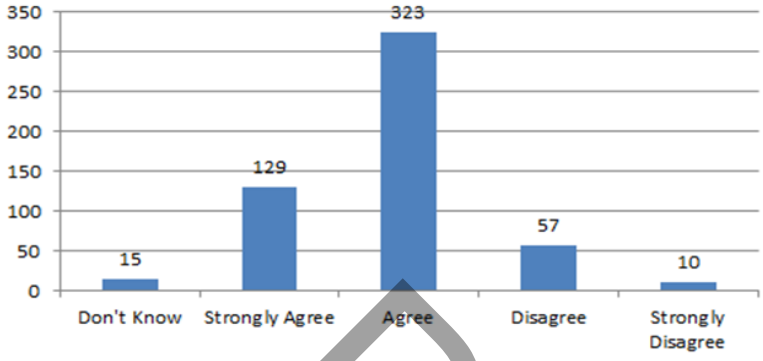
Question 31: I Feel Safe at the Bus Stop



I Feel Safe at the Bus Stop		
	2014	2011
Strongly Agree	24%	25%
Agree	60%	32%
Disagree	11%	12%
Strongly Disagree	2%	10%
Don't Know	3%	0%

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Cross Tabulations and Other Comparisons

Employment status by car ownership of bus riders

The level of this dependence on bus riding becomes clear when we look at the number of riders who do not have a car. 71% of survey respondents reported that they do not have a car in their household, with only 29% reporting they do have a car. Because of the high level of people who use the bus to go to work and school, and the high number of riders without cars, it may be inferred that BC Transit is very important for these riders. Statistically, this is shown, as the relationship between employment status and car ownership is statistically significant at the .05 level and moderately strong. This helps to further illustrate the reliance of bus riders on the bus.

	Employment Status				
Car	*Full time*	*Part time*	*Unemployed*	*Student*	*Retired*
Yes	29%	31%	16%	43%	7%
No	71%	69%	84%	57%	93%

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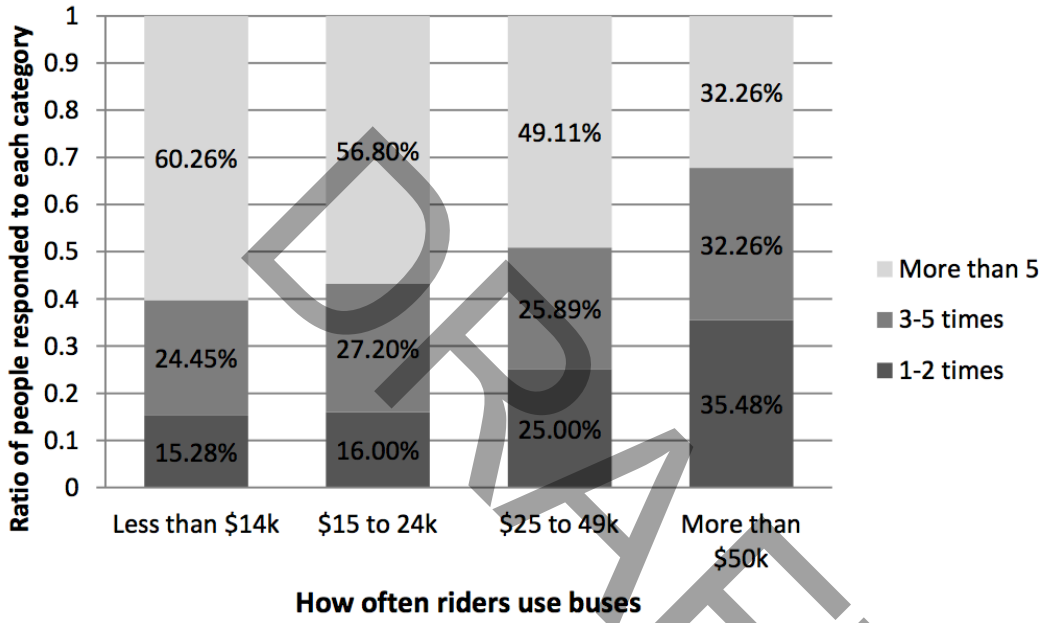
Income by car reason for riding

Comparing income level to reason for riding, the relationship is shown to be statistically significant at the .05 level. This indicates that, at different income levels, people's motivations for riding the bus may be different.

	Income			
Reason for Riding	*Less than $14k*	*$15 to 24k*	*$25 to 49k*	*More than $50k*
No Car	74%	73%	58%	68%
More Convenient	8%	9%	21%	11%
Cheaper	14%	9%	11%	11%
No Parking	0%	0%	0%	4%
Protect Environment	2%	1%	0%	4%
Rather Ride	2%	8%	9%	4%

Income of rider by how often they use the bus

Not surprisingly, people with lower incomes use public buses more frequently. Nearly six in 10 riders with incomes less than $14,000 use the bus more than five times per week while less than one-third of upper income riders show the same frequency of riding. A chi-square test resulted in a p-value of 0.0025 and this is less than the critical value (0.05) indicating that the relationship between income and frequency of riding is significant.



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2011 to 2014 Change in Reason for Riding BC Transit (question9)

There is no significant change the reasons that people chose to ride BC Transit.

Year of Survey	Drive	Ride	Taxi	Bike	Walk	Not make trip	Other
2014	4%	21%	20%	4%	23%	23%	4
2011	5%	20%	20%	3%	25%	25%	25%
Percent Change	1%	-1%	0%	-1%	2%	2%	21%

Method of payment by income

There is a relationship between the way people pay their fare on BC Transit buses and their income levels. BU ID are most prevalent amount individuals with more than $50,000 in income while this group used cash less frequently. Use of the 31-day pass was most common among those who reported that they earned less than $15,000 per year. (Two-way ride option was removed as no one indicated using that method.)

	Less than $15k	$15 to 24k	$25 to 49k	More than $50k
Cash	32	43	45	29
Single pass	5	3	5	0
12 Ride Pass	2	1	2	3
BU ID	38	30	44	68
Medical	0	1	0	0
31 Day Pass	23	22	5	0

All figures in percentages

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Feeling safe on the bus by gender

We chose to test this relationship, comparing questions 14 and 30, because we thought it would be interesting to see if a rider's gender affects how safe s/he feels on the bus. We thought that women would indicate that they feel less safe, but the relationship turned out to be insignificant (p-value above the .05 level.)

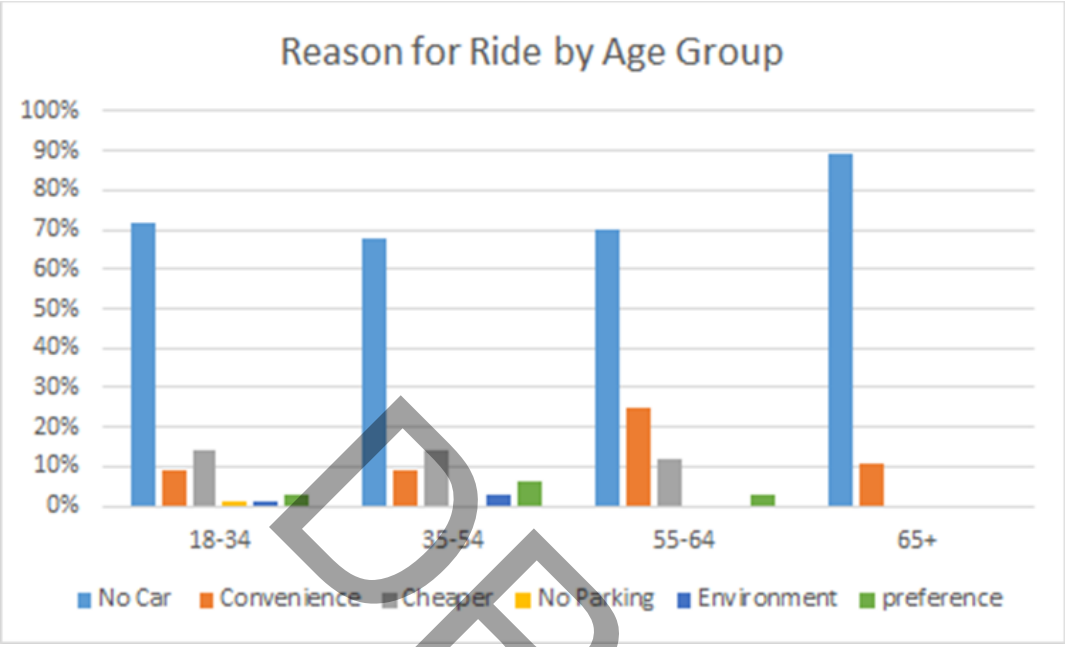
	Male	Female
Don't Know (0)	2	2
Str. Agree (1)	26	24
Agree (2)	62	65
Disagree (3)	6	7
Str. Disagree (4)	3	2

All figures in percentages

Reason for Riding by Age Group

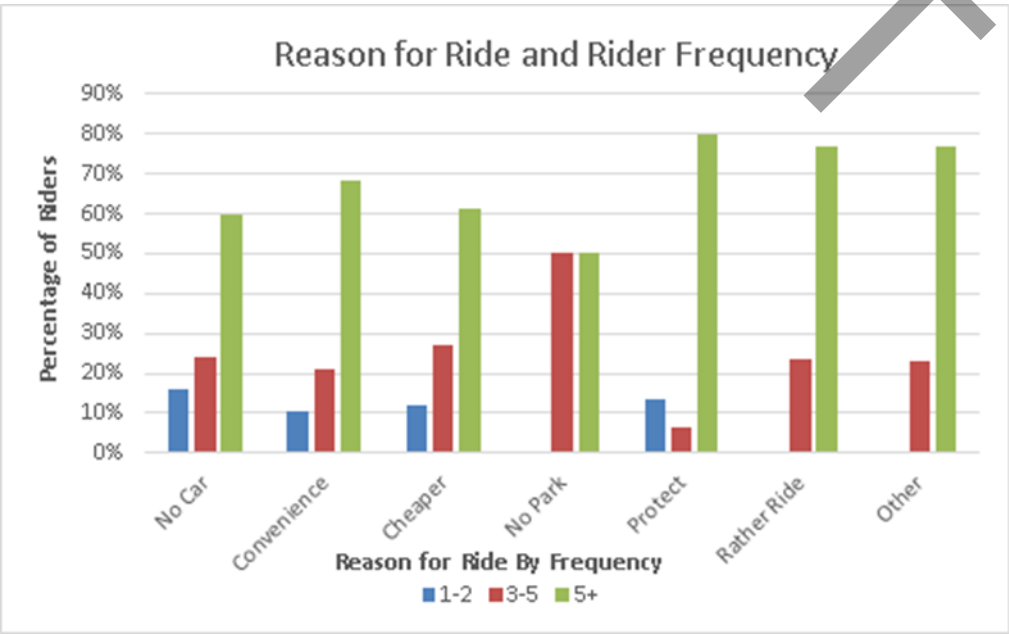
There is no significant relationship between the age of the rider and the reason they use BC Transit buses. After using the Chi-Squared formula to test whether the relationship between the age group of BC transit riders and the most important reason they ride the bus the results found that Chi Square is 0.81575 much greater than the 0.05 level of significance, making this relationship insignificant. As you can see depicted in the chart the most important reason why riders for all age groups ride BC transit is because they do not have a car. Please note that all

respondents who replied with more than one answer were eliminated from the data as well as those respondents that did not include an answer of their age.



Reason for Riding by Destination

There is also no significant relationship between the reason a rider uses BC Transit and their destination. Using a chi-square test to analyze the relationship a p-value of .65 was derived. The high p-value of .65 is well above the .05 significance level.



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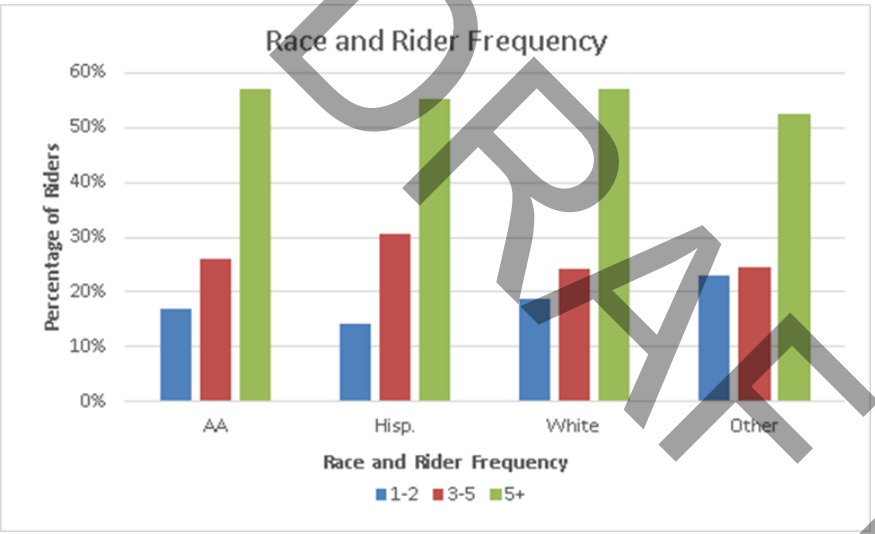
Race / ethnicity by frequency of riding on bus

There is no relationship between the race/ethnicity of the rider and the frequency of the rider's trips. The graph below shows the breakdown of riders by race (African-American, Hispanic, White, and Other) and the frequency each group uses BC Transit. As shown, 50-58% of riders from each category use bus service at least five or more times a week. Generally, the distribution of riders within each race category is fairly equal in terms of the frequency to which each race uses bus services. A chi-square test was used to measure the significance between race and rider frequency resulted in a p-value of .87, well above the .05 significance level indicating that the relationship between race and the number of times a week each race utilizes bus services is insignificant and could largely be due to chance.



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Appendix A. Methodology

Methodology

The survey instrument was designed by Gregory Kilmer, Commissioner of B.C. Transit; Jennifer Yonkoski, Senior Transportation Planner at the Binghamton Metropolitan Transportation Study; George Homsy, professor at Binghamton University; and the PAFF 510 Research Methods class. There are substantial changes to the survey from the 2009 and 2011 versions.

The survey contained mostly close-ended questions with multiple-choice answers. However, for the questions designed to gauge rider satisfaction (questions 20-31) a Likert Scale was used which contained five choices: "strongly agree", "agree", "disagree", "strongly disagree", and "don't know." The Likert Scale enables respondents to quickly answer questions in a time-sensitive and sometimes-uncomfortable setting (i.e. a bus) while also providing more depth of detail than might be found with multiple choice.

Bus route and times for the survey were chosen randomly after being weighted for ridership levels. BC Transit provided raw ridership levels for each route by time. These were totaled across Monday-Friday and separately for Saturday-Sunday. We used these totals to increase or decrease the chance of each route/time being selected for participation in the study. The day that each route/time in the sample would be surveyed was assigned randomly, and 68 bus routes were included in our sample.

The surveys were conducted from October 26 to November 8, and 568 surveys were collected. These surveys had various levels of completion. Students were instructed to approach every bus rider they encountered in order to ask him or her to take the survey. This protocol was not followed in cases where it was unsafe to do so, such as when the bus was overcrowded or when a passenger was standing.

Students were also instructed not to interview anyone under the age of 18. Seven people under the age of 18 were accidentally surveyed, and their data was not included in any data analysis.

Ethical Guidelines

Prior to the survey process, students underwent an online training program via the CITI (Collaborative Institutional Training Initiative) website regarding 'Ethics in Research'. Students were expected to pass a series of online exams in order to attain IRB certification. The certification granted students the legal right to conduct the survey process (distribution and collection of surveys via BC transit riders). It is important to note that this process involved the use of human subjects but did not require IRB approval because it was the type of research that posed *no more than minimal risk* to its survey participants (Exempt Approval, Category Five).

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The following list provides the details of the survey distribution and collection process:

- Survey participants needed to appear to be 18 years or older
- Participation was voluntary
- Prospects were left alone if participation was declined
- Participants could decline filling out any portion of the survey
- Participants did not need to finish the survey
- Participants were given information disclosing surveyors affiliation to Binghamton University and reasoning for conducting the survey (to analyze ridership trends)

Our survey was completed with 22 MPA students acting as surveyors on 15 diversified Broome County Public Transport bus lines and individual 80 bus runs. In order to ensure our sample mirrors the population riding the bus, we surveyed different routes multiple times during many different times of the day. The following is a table documenting how many times each bus route was ridden by a surveyor:

Route	Times Surveyed
3	2
5	8
7	4
8	4
12	8
15	11
17	1
23	2

Route	Times Surveyed
28	1
35	25
40	3
47	7
51	1
53	1
57	2

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Description of Survey Instrument

The survey was divided into three sections: *Today's ride, Who is riding, and Evaluation of the ride*. The first section (Today's Ride) addressed questions regarding where riders were coming from and their destination (including starting and ending bus stop points), how fare was paid, and the frequency of which both BC transit and taxi services were used in the past week. The second section (Who is Riding) addressed questions regarding rider demographics (age, gender, race, employment status, vehicle status, smartphone status, annual income) and the most important reason riders used bus services. The third section (Evaluation of the Ride) addressed rider opinion on the actual bus services. The survey questions were designed at a third grade reading level and intended to be both clear and comprehensive. The 2014 survey was a simple listing of questions on one piece of paper (questions front to back) instead of the 2011 brochure format. The ordering of sections for the 2014 survey began with the *Today's Ride* section to the *Who is Riding* section and

ended with the *Evaluation of the Ride* section in contrast with the 2011 survey which ordered the sections as *Today's Trip, Assessment of Services*, and *Background Information*. In this case, attaining rider demographics (background information) was more optimal information than was the assessment of bus services.

The first section of the 2014 survey (Today's Ride) added questions inquiring about starting and ending bus stop points, where riders were coming from and where they were going, and whether or not riders utilized transfer services. These questions were added to obtain information about the most frequently and infrequently ridden routes. The second section of the 2014 survey (Who is Riding) added questions regarding whether or not riders owned a smartphone, owned a car, or had internet access at home. The smartphone and internet access questions were added to assess whether or not riders utilized the BC Transit website and the car ownership question was added to assess how much of an effect access to a vehicle had on utilization of bus services. The third section of the 2014 survey (Evaluation of the Ride) omitted the following 2011 survey statements:

- The bus stops are easy for me to get to The bus routes meet my needs In general, bus drivers are professional The bus seating is comfortable
- The bus temperature is comfortable In general, bus service is reliable

The first two were unnecessary because the following existing statement, Bus service is frequent enough to meet my needs, essentially covered the information sought from those omitted statements. The omitted stated, In general, bus drivers are professional, was also unnecessary because the existing statements (Bus drivers are knowledgeable about services and Bus drivers are courteous) was the only information of interest. The omitted statements (The bus seating is comfortable and The bus temperature is comfortable) were not practical inquiries because changing those measures would not have been feasible (regardless of rider sentiment). Finally, the omitted statement, In general, bus service is reliable, was deemed repetitive because of the already existing statement, The buses are consistently on time. To note, in the final Evaluation of the Ride section, the "Neutral" option was deemed as undefinable (meaning the answer served no purpose for analysis) and was replaced by a "Don't Know" option.

Limitations

All surveys were distributed and collected at the completion of each assigned survey route. The ordering of the survey questions was intentional; beginning with questions deemed most important (Today's Ride Information) and ending with the Evaluation of the Ride (assessment of bus services) statements. Survey questions and assessment statements were compiled to be short and to-the-point to strengthen the likelihood of full survey completion. It is important to note that data from incomplete surveys was included in this analysis. It is also important to note that data

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from cases where respondents checked more than answer was included in this analysis as well. Overall, 575 riders participated in this analysis (including partially completed surveys) which is 115 more respondents than noted in the 2011 bus survey report.

Although student surveyors were instructed to allow only riders 18 years of age or older to participate, there were a few cases in which participants under the age of 18 were found. These cases were omitted from any data analysis.

Questions 17 and 19: Is there a car in your household? and What is the annual income of your household? may have resulted in skewed data due to the large amount of student respondents. In this case, students may have misunderstood whether to answer these questions on an individual or familial level. Thus, some students may have reported the car ownership or income level of their parents rather than themselves.

Question 15 did not have Asian as a category. A large number of students wrote it in the Other column. We tallied Asian separately based on this, but the number is likely underrepresented as many probably checked other and entered nothing.

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Appendix B. Survey Instrument

The survey instrument can be found on the following two pages.

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Thank you for your time! Your input will help improve B.C. Transit Services!

- Please take a few minutes to complete this survey. Ask us for help if you need it.
- The survey is anonymous. Nothing can identify you. You do not have to answer all questions and may stop at any time.
- Before you leave the bus, please return the survey to the person who gave it to you.
- For more information, contact the Binghamton Metropolitan Transportation Study at: BMTS@co.broome.ny.us

1. **Regarding this bus trip – where are you COMING FROM?**
   ☐ Home ☐ Work ☐ Shopping ☐ Medical appointment ☐ School / College
   ☐ Social services appointment ☐ Visiting friends/relatives ☐ Other_____

2. **How did you get to the bus stop today?**
   ☐ Walked ☐Bicycle ☐ Got a ride in a car ☐ Used a wheelchair ☐ Other_____

3. **How long did it take you to reach the bus stop today?**
   ☐ 1 - 5 minutes ☐ 6 - 10 minutes ☐11 - 15 minutes ☐16 - 20 minutes ☐21 - 25 minutes ☐26 min. or more

4. **Where did you get on the bus**? (e.g. street name, intersection, store name)_____

5. **How did you pay your fare today?** ☐ Cash ☐ Single ride pass ☐ 2-way ride pass
   ☐ 12-ride pass ☐ BU ID ☐ Medical voucher ☐31-day bus pass

6. **Regarding this bus trip – where are you GOING?**
   ☐ Home ☐ Work ☐ Shopping ☐ Medical appointment ☐ School / College
   ☐ Social services appointment ☐ Visiting friends/relatives ☐ Other_____

7. **Where will you get off of the bus?** (e.g. street name, intersection, store name) _____

8. **Do you need to transfer buses today?** ☐ Yes ☐ No
   If yes, how many times did you/will you transfer? _____
   If yes, where? ☐ BC Junction/Downtown Binghamton ☐ Binghamton University
   ☐ Endicott/Washington Ave ☐ Oakdale Mall

9. **If bus service were not available, how would you make this trip?** ☐ Drive ☐ Ride with someone
   ☐ Taxi ☐ Bicycle ☐ Walk ☐ Would not make this trip ☐ Other _____

10. **How often have you used BC Transit in the past week?** ☐ 1 – 2 times ☐ 3 – 5 times ☐ More than 5 times

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PLEASE TURN OVER

11. **How often have you used a taxi in the past week?** ☐ 0 times ☐ 1 - 2 times ☐ 3 - 5 times ☐ More than 5 times

12. **What is the most important reason you ride the bus?**
☐ No car available ☐ Bus is more convenient ☐ Bus is cheaper ☐ No convenient parking
☐ Protect the environment ☐ I would rather ride the bus then drive a car. ☐ Other_____

13. **How old are you?** _____ (Enter age in years.)

14. **Are you…** ☐male ☐ female ?

15. **Race / ethnicity?** ☐African-American ☐Hispanic/Latino ☐ White ☐Other_____

16. **Do you own a smart phone?** ☐ Yes ☐ No 16A. **Do you have Internet access at home?** ☐ Yes ☐ No

17. **Is there a car in your household?** ☐ Yes ☐ No

18. **What is your employment status?**
☐ Employed full time ☐ Employed part time ☐ Unemployed ☐ Student ☐ Retired ☐ Other_____

19. **What is the annual income of your household?**
☐ Less than $14,999 ☐ $15,000 to $24,999 ☐ $25,000 to $49,999 ☐ More than $50,000

How strongly do you agree or disagree with each statement?	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
20. The bus fare is reasonable.	☐	☐	☐	☐	☐
21. It is easy to purchase swipe cards.	☐	☐	☐	☐	☐
22. The bus schedule is easy to understand.	☐	☐	☐	☐	☐
23. The bus schedule is easy to obtain.	☐	☐	☐	☐	☐
24. The BC Transit website is easy to use.	☐	☐	☐	☐	☐
25. Bus service is frequent enough to meet my needs.	☐	☐	☐	☐	☐
26. The buses are consistently on time.	☐	☐	☐	☐	☐
27. Bus drivers are knowledgeable about services.	☐	☐	☐	☐	☐
28. Bus drivers are courteous.	☐	☐	☐	☐	☐
29. Buses are clean inside.	☐	☐	☐	☐	☐
30. I feel safe on the bus.	☐	☐	☐	☐	☐
31. I feel safe at the bus stop.	☐	☐	☐	☐	☐

32. Where would you like to go that currently does not have bus service? Write other comments you have about BC Transit?

Surveyor use only Route: Date: Start time:

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