

# **Assessing Ride On's Access to Jobs Program**

An Interactive Project  
submitted to the Faculty of  
WORCESTER POLYTECHNIC INSTITUTE  
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Degree of Bachelor of Science  
by

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**Kenneth S. Bravman**

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**Timothy D. Dunn**

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**Corinne S. Linderman**

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Approved:

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**Professor Tahar El-Korchi, Co-Advisor**

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**Professor Brigitte Servatius, Co-Advisor**

## Authorship Page

- Kenneth S. Bravman      Developed survey, conducted bus surveying, entered and tabulated responses  
Major contributions to: Abstract, Executive Summary, Literature Review, Methodology, Results, Recommendations, Survey Development
- Timothy D. Dunn      Developed survey, conducted bus surveying, edited paper and presentation  
Major contributions to: Introduction, Literature Review, Methodology, Recommendations, Test Group
- Corinne S. Linderman      Developed survey, conducted bus surveying, performed analysis of responses  
Major contributions to: Introduction, Literature Review, Methodology, Results, Analysis, Recommendations, Executive Summary

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Nick Garnier

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Tahar El-Korchi

Brigitte Servatius

Kent Rissmiller

David DiBiasio

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## **Abstract**

In 1998, Ride On, Montgomery County, Maryland's bus system, extended the span of service on eight bus routes as part of its Access to Jobs program. Their goal was to link low-income areas with the transit network of the Washington, D.C. metropolitan area. By surveying the riders of these late night and early morning bus trips, we were able to evaluate these extensions to determine how dependent peoples' employment is on Ride On's extended operating hours.



## **Executive Summary**

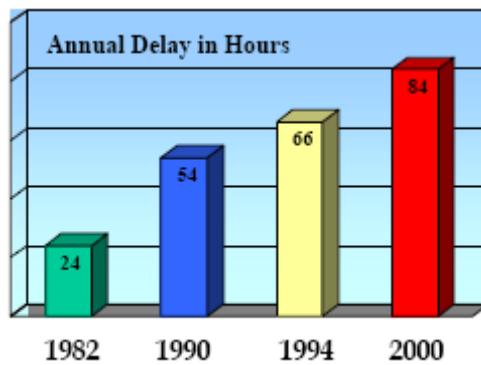
The goal of our project is to assess the 1998 span extensions made to eight Ride On bus routes. This increase in the span of service was part of the county's Access to Jobs program designed to stimulate economic growth in low-income areas of the county. In addition to the eight routes that were extended twenty-two others were considered, however, due to funding limitations, they were not extended. Now, in 2005, the Montgomery County Government is looking to see if the increase in service on these eight routes accomplished its goals of linking Temporary Assistance for Needy Families (TANF) areas to the Washington, D.C. transportation network.

To achieve our project goal, we attempted to survey all of the riders on the first and last trips of seven of the eight routes for two main reasons: it was the method that Ride On suggested, and it would be the easiest way to learn about the riders and their situations. We developed our survey prior to arriving in Washington, D.C. and finalized it with the help of Ride On's marketing department. We then spent eighteen mornings and eighteen nights over the course of three weeks attempting to survey every passenger during these trips. We received completed surveys from 508 of the 1,029 riders who ride these late night and early morning bus trips.

From our results and analysis it can be concluded that we achieved our project goals of determining the ridership of bus trips during the extended hours, the job dependency upon this service, and the ability of riders to get into the transportation network. A vast majority of riders late at night and early in the morning are using the bus to get to or from work. Additionally, a majority are using it to meet up with Metrobus and Metrorail. Riders were also quite dependant upon the buses as just over eighty percent did not have access to a car, and one third of respondents would not have their current job without the service.

## Introduction

The Washington, D.C. Metropolitan Area is home to one of the largest workforces in the country, consisting of more than 675,000 people. The surrounding areas, specifically the District's neighbor to the northwest, Montgomery County, experiences the pressure that these workers place upon the infrastructure in the form of long commute times and heavy traffic congestion. According to a study performed by Texas A&M University, the Washington Metro Area is ranked as the fourth highest congested area nationally<sup>1</sup>. Figure 1: Annual Delay in Hours shows that the Washington, D.C. metropolitan area has witnessed a three-fold increase in delays caused by an increase in volume over the past two decades.



Source: Texas Transportation Institute  
Figure 1<sup>2</sup>: Annual Delay in Hours

Approximately thirteen percent of this workforce utilizes public transportation<sup>3</sup>.

Montgomery County is one of the most affluent counties in the country. According to the National Association of Counties, Montgomery County has the sixth highest average household

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<sup>1</sup> Montgomery County Department of Park & Planning Research and Technology Center. (2005, February). *Montgomery County at a Glance: Current Estimates Population Housing Employment*. Retrieved September 20, 2005 from [http://www.mc-mncppc.org/research/data\\_library/montgomery\\_county\\_glance/ataglance.pdf](http://www.mc-mncppc.org/research/data_library/montgomery_county_glance/ataglance.pdf)

<sup>2</sup> Montgomery County Department

<sup>3</sup> Montgomery County Department

income nationally at \$116,407<sup>4</sup>. Despite this high household wealth, there is a substantial population of low-income families. The national poverty level is defined by the Department of Health and Human Services. Table 1: 2005 HHS Poverty Guidelines shows the department's poverty level guidelines for 2005.

**Table 1<sup>5</sup>: 2005 HHS Poverty Guidelines**

Persons in Family Unit	48 Contiguous States and D.C.
1	\$ 9,570
2	12,830
3	16,090
4	19,350
5	22,610
6	25,870
7	29,130
8	32,390
For each additional person, add	3,260

In 1999 5.4% of the total population of Montgomery County, 873,000 people, was below the poverty line<sup>6</sup>. This equates to over 47,000 people living in poverty in Montgomery County.

There are also self-sufficiency wage standards in Montgomery County. This is the amount of money a family needs to make in order to not need any outside help. Table 2: Self-Sufficiency Wages shows the different incomes needed to be considered self-sufficient in different family situations.

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<sup>4</sup> National Association of Counties (2005). *Average Number of Households and Household Incomes*. Retrieved September 18, 2005, from [http://www.naco.org/Template.cfm?Section=Data\\_and\\_Demographics&Template=/cfiles/counties/income\\_res.cfm](http://www.naco.org/Template.cfm?Section=Data_and_Demographics&Template=/cfiles/counties/income_res.cfm)

<sup>5</sup> Health and Human Services. (2005). *The 2005 HHS Poverty Guidelines*. Retrieved November 29, 2005 from <http://aspe.hhs.gov/poverty/05poverty.shtml>

<sup>6</sup> National

**Table 2<sup>7</sup>: Self-Sufficiency Wages**

Annual Self-Sufficiency Wages for Select Family Types in Montgomery County, MD				
Adult	Adult + Infant	Adult + Infant + Preschooler	Adult + Infant + Preschooler + School age	2 Adults + Infant + Preschooler
\$29,378	\$55,055	\$65,137	\$87,365	\$69,636

Ride On is taking steps to stimulate economic growth in the lower class. Ride On utilizes money from a Federal Transit Administration (FTA) grant to fund its Access to Jobs program. Currently, Ride On does not know how effective their Access to Jobs program is. In 1998, fiscal year '99, Ride On used the original grant to alter eight routes that connect with Metrorail stations such that the Ride On buses would meet the earliest and latest trains to provide a means for late night and early morning commuters to get to and from work. There were approximately thirty original routes that were considered for these time span extensions.

Unfortunately, the county does not know if extending the hours that Ride On operates has enabled people to access more jobs at a broader array of hours. It is the goal of this interactive project to determine whether or not the extended routes are helping citizens with their employment. We will conduct surveys to determine if the Access to Jobs program links Montgomery County citizens to “the transportation network,” the Metro and many other local transportation systems in and around the District of Columbia, and subsequently their jobs in other parts of the county and in Washington, D.C.

In order to facilitate better access to places of employment as well as to aid people in the transition from welfare to work, the county must provide a reliable means of transportation. It is critical that people are able to get to their jobs so that they can support themselves and their

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<sup>7</sup> Pearce, Diana. *The Self-Sufficiency Standard for the Washington, D.C. Metropolitan Area*. Center for Women’s Welfare at the University of Washington

families without governmental or other aid. This is the goal of the Access to Jobs program.

Through Ride On and other transportation services in the area, the entire metropolitan region is accessible to everyone. By helping employees gain access to Metro during all of its operating hours, weekdays from 5am to 12am and weekends from 7am to 3am, the county government has made employment at all hours attainable, specifically for second and third shift workers, those who work during the hours of 6pm to 9am.

Through our project research and results, we will assess how well Ride On's Access to Jobs program is achieving its goals of getting people, specifically second and third shift workers, to their places of employment effectively.

## **Background**

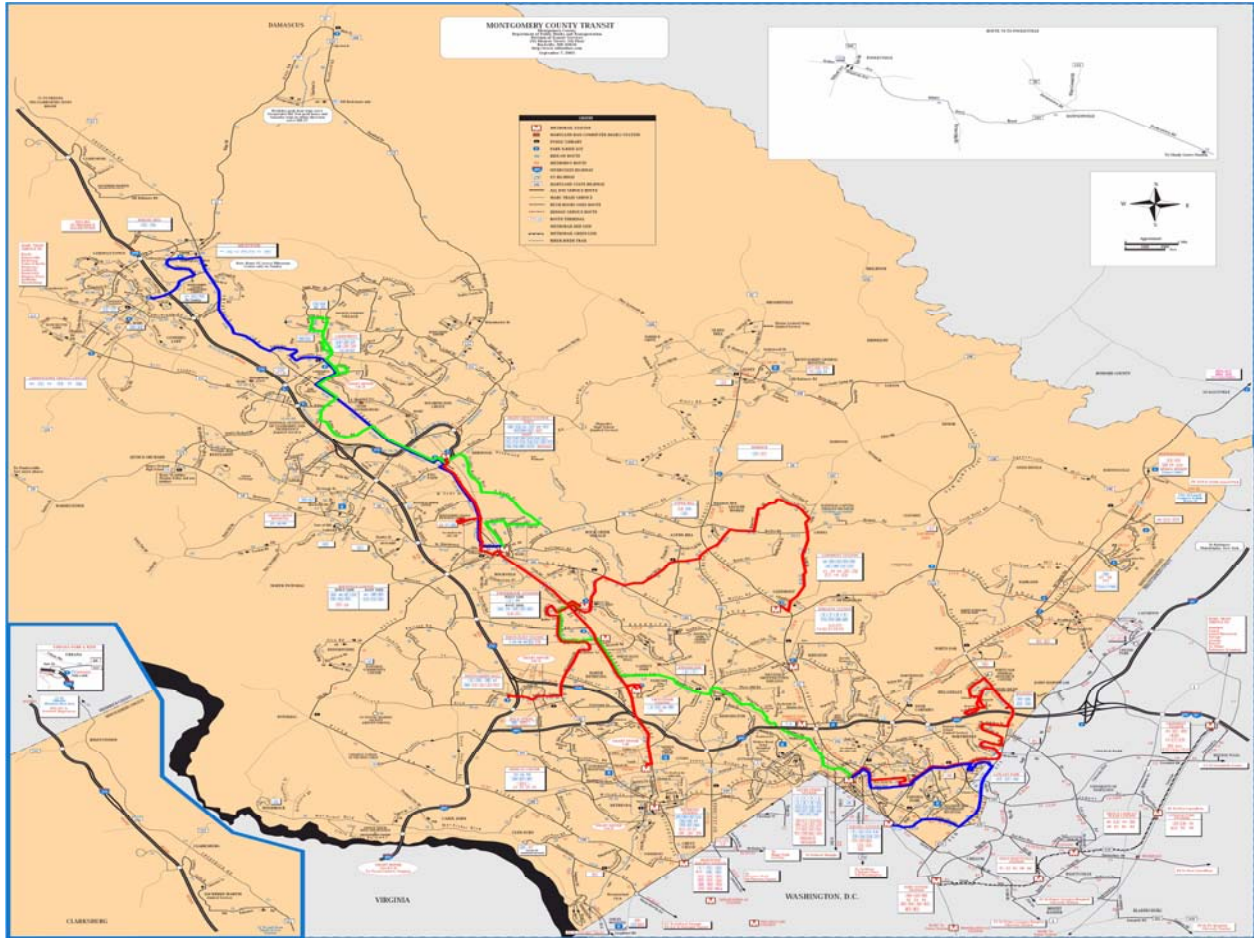
Throughout the world, transportation is critical to people's livelihood. Even in the day and age of computers and the internet, transportation is still the backbone of society. Nevertheless, roads are extremely congested, especially in the Washington, D.C. Metropolitan area, and in some places rush hour may last for more than seven hours. Public transportation systems have not met, and cannot meet, the high demands of society. Many cities and metropolitan areas throughout the country are looking at these problems, and reassessing their transit systems. While they address congestion they also have a chance to help the under privileged in the areas they service. By looking at census data, governments have been doing their best to help citizens commute. Through Access to Jobs programs, local governments are taking an active role in addressing citizens' needs.

### **Montgomery County Transit**

The Washington metropolitan area has an extensive public transit system that connects the District of Columbia, Northern Virginia, and Maryland. Ride On is the bus system in Montgomery County, Maryland. It connects the Metrobus and Metrorail system to the rest of the county. Ride On owns 243 buses and subcontracts another 93 to provide coverage of the county. This system ensures commuters' ability to reach other areas in Montgomery County and the surrounding region. With such expansive service, Ride On is able to boast "over 22 million [one-way] trips per year<sup>8</sup>." Figure 2: Montgomery County Map shows all the routes that Ride On runs and the highlighted routes are the ones we rode and surveyed.

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<sup>8</sup> Montgomery County Government. (2005, August), *Ride On Homepage*. Retrieved September 11, 2005 from <http://www.montgomerycountymd.gov/tsvtmpl.asp?url=/content/dpwt/transit/index.asp>



**Figure 2<sup>9</sup>: Montgomery County Map**

The mission of Ride On is to connect “people, communities, workplaces, educational institutions, recreational opportunities, and many other essential destinations” throughout the county<sup>10</sup>. Moreover, according to the Department of Health and Human Services,

“Transportation is one of the main challenges facing people making the transition from welfare to work<sup>11</sup>.” In 1998, Ride On expanded its coverage by extending its operating hours.

Specifically Montgomery County extended the hours on eight Ride On routes to help people get

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<sup>9</sup> Montgomery County Government. (2005, August)

<sup>10</sup> Montgomery County Government. (2005, October), *Montgomery County, Maryland Government Homepage*. Retrieved September 11, 2005 from <http://montgomerycountymd.gov>

<sup>11</sup> Department of Health and Human Services, Office of Family Assistance. (1998, May). *Temporary Assistance for Needy Families Program: Policy Announcement*. Retrieved September 24, 2005 from <http://www.acf.hhs.gov/programs/ofa/testmny.htm>

to and keep their jobs<sup>12</sup>. It funded the Access to Jobs program from an FTA grant. The funding used for this program was originally and still is a line item in the FTA budget. Ride On annually receives approximately \$604,000. Originally, Ride On matched this money, however currently it is overmatched.

The Ride On routes that we will focus on are the 5, 16, 20, 26, 46, 55, and 59. We will not be riding any route 12 trips due to the amount of time we have in which to complete our project. In addition, route 12 has the same starting and ending points as route 16. For these reasons, we chose not to ride any route 12 trips. Similar to many routes operated by Ride On, all seven of these terminate at a minimum of one Metrorail station. Three of the seven routes we are looking at are based out of the Rockville Metro station, another three are based out of the Silver Spring Metro station, while the seventh is based out of the Glenmont Metro Station. Route 5 runs east-west across the county connecting the Twinbrook and Silver Spring Metro stations. Route 16 follows the east branch of the Metro's Redline and has terminal stops at the Silver Spring and Takoma Metro stations. Connecting the Silver Spring Metro station to the Hillandale Shopping Center, located northeast of the Metro stop, is route 20. Route 26 runs cross-county, connecting Montgomery Mall, located in Bethesda, Maryland, with the last stop on the east branch of the Metro's Red line, Glenmont. Route 46 follows Rockville Pike, a major north-south thoroughfare running the entire span of Montgomery County, ending at Montgomery College and the Medical Center Metro station. Routes 55 and 59 share a terminal station at Rockville, however, route 55 runs to Montgomery Village Center in Gaithersburg, Maryland, while route 59 runs farther northwest to the Germantown Transit Center in Germantown, Maryland.

Originally, there were thirty routes that Ride On was looking to extend but due to the size of the grant they received Ride On was only able to extend the eight routes we are looking at.

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<sup>12</sup> Montgomery County Government. (2005, August)



The original thirty were chosen because they go through Temporary Assistance for Needy Family (TANF) neighborhoods. Of the original thirty routes, eight were chosen because at the time those were the ones that were “most likely to succeed.” Table 3: Suggested Original Routes shows the other twenty-two routes and the change that Ride On wanted to make. “Longer peak hours” refer to rush hour lasting longer. “Reverse Commute” refers to adding bus trips that help commuters that live in the city and work outside of it. “More Midday Service” is adding more trips between rush hours.

**Table 3: Suggested Original Routes**

<b>Other 22</b>	
<b>Route</b>	<b>Change</b>
6	Longer Peak Hours
13	Longer Peak Hours
19	Reverse Commute
22	Longer Peak Hours
24	Reverse Commute
32	Longer Peak Hours
33	Longer Peak Hours
37	Longer Peak Hours
39	Reverse Commute
44	Longer Peak Hours
52	Longer Peak Hours
53	Longer Peak Hours
60	Reverse Commute
65	Reverse Commute
70	Longer Peak Hours
71	Reverse Commute
72	Reverse Commute
73	Longer Peak Hours
74	Longer Peak Hours
75	Longer Peak Hours
77	Longer Peak Hours
90	More Midday Service

Since 1998, Ride On has implemented more early morning and late night service, specifically between the hours of 10 pm and 6 am, in order to better aid the working population in Montgomery County. From Table 4: Weekday Differences,

Table 5: Saturday Differences, and Table 6: Sunday Differences we can see the time extensions that were added to the eight Access to Job routes. The longest of which was a six-hour extension on the Sunday schedule of route 26 from Glenmont to Montgomery Mall. Most of the extensions that were added were to the night and weekend schedules. It can also be noticed that the weekday and weekend schedules more closely resemble each other now than they did before the routes were extended.

**Table 4: Weekday Differences**

Route		Weekday		
		1997	2005	Difference
5	Start	5:05 AM	5:05 AM	0:00
	End	11:02 PM	12:59 AM	1:57
12	Start	4:41 AM	4:34 AM	0:07
	End	1:00 AM	12:57 AM	0:03
16	Start	4:35 AM	4:27 AM	0:08
	End	11:39 PM	1:09 AM	1:30
20	Start	4:31 AM	4:26 AM	0:05
	End	12:20 AM	12:30 AM	0:10
26	Start	5:43 AM	4:56 AM	0:47
	End	10:21 PM	12:29 PM	2:08
46	Start	5:00 AM	4:53 AM	0:07
	End	11:45 PM	1:48 AM	0:03
55	Start	5:00 AM	4:50 AM	0:10
	End	11:42 PM	1:22 AM	1:40
59	Start	4:55 AM	4:49 AM	0:04
	End	9:59 PM	1:31 AM	3:32

**Table 5: Saturday Differences**

Route		Saturday		
		1997	2005	Difference
5	Start	6:00 AM	5:30 AM	0:30
	End	8:13 PM	12:58 AM	4:45
12	Start	6:14 AM	5:00 AM	1:14
	End	11:37 PM	12:52 AM	1:25
16	Start	6:45 AM	5:01 AM	1:44
	End	10:40 PM	1:12 AM	2:32
20	Start	5:05 AM	5:00 AM	0:05
	End	10:50 PM	12:55 AM	2:05
26	Start	7:15 AM	5:17 AM	1:58
	End	8:27 PM	1:00 AM	4:33
46	Start	5:40 AM	5:09 AM	0:31
	End	12:02 AM	1:07 AM	1:05
55	Start	6:06 AM	5:00 AM	1:06
	End	11:20 PM	12:42 AM	1:22
59	Start	6:14 AM	5:17 AM	0:57
	End	9:04 PM	12:25 AM	3:21

**Table 6: Sunday Differences**

Route		Sunday		
		1997	2005	Difference
5	Start	6:32 AM	5:33 AM	1:01
	End	7:13 PM	12:58 AM	5:45
12	Start	6:25 AM	5:26 AM	0:59
	End	11:17 PM	12:49 AM	1:32
16	Start	7:47 AM	5:17 AM	2:30
	End	9:12 PM	12:53 AM	3:41
20	Start	6:00 AM	5:00 AM	1:00
	End	8:22 PM	12:52 AM	4:30
26	Start	7:43 AM	5:17 AM	2:26
	End	7:01 PM	12:59 AM	5:58
46	Start	5:46 AM	5:05 AM	0:41
	End	11:05 PM	12:41 AM	1:36
55	Start	7:26 AM	5:30 AM	1:56
	End	7:43 PM	12:43 AM	5:00
59	Start	6:07 AM	5:30 AM	0:37
	End	9:02 PM	1:06 AM	4:04

Through the coalition of Ride On, Access to Jobs, and the FTA, Montgomery County is evaluating the needs of its citizens and taking steps to address those needs.

According to the Ride On website, there are more than eighty routes that criss-cross Montgomery County. These buses connect to both the Metrorail and Metrobus systems and the Maryland Area Rail Commuter (MARC) rail stations. When Metrobus is operating in Montgomery County, they defer to the county government. Otherwise, they, along with Metrorail, are under the authority of the Washington Metropolitan Area Transit Authority (WMATA). Through these other commuter options, one can connect with the Virginia Railway Express (VRE) as well as Amtrak.

Washington, D.C. is ranked as one of the ten most congested cities annually. The area as a whole has increased public transportation service by creating new Metrorail stops, increasing bus service and extending coverage to alleviate current traffic delays. New renovations around the area such as the new Woodrow Wilson Bridge, and a redesigned interchange of I-95, I-495, and I-395 are in place to ease motor vehicle flow, but congestion in the area continues to rise<sup>13</sup>.

Due to the congestion problems Montgomery County faces, they developed a plan in 2002 called “Go Montgomery!” This plan illustrates the improvements planned for the next decade. “Go Montgomery!” was also created in response to the fact that in 2003, the average commute for Montgomery County lasted thirty-two minutes, which places Montgomery County tenth highest along with two other cities, in the nation<sup>14</sup>. This is up from 2002, when Montgomery County was sixteenth, with a commute time of approximately thirty-one minutes<sup>15</sup>. The “Go Montgomery!” plan includes projects that will add restricted lanes to heavily congested roads exclusively for buses and high occupancy vehicles (HOV), and to expand current bus services by forty percent in order to alleviate traffic and increase the effectiveness of Ride On.

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<sup>13</sup> Washington Metropolitan Area Transit Authority. (2004). Washington Metropolitan Area Transit Authority Homepage. Retrieved September 12, 2005 from <http://www.wmata.com>

<sup>14</sup> U.S. Census Bureau. (2002). *Average Travel Time to Work of Workers 16 Years and Over Who Did Not Work at Home*. [electronic version]

<sup>15</sup> U.S. Census

## Temporary Assistance for Needy Families (TANF) Program

The Temporary Assistance for Needy Families (TANF) program was created in 1996 as part of the Personal Responsibility and Work Opportunity Reconciliation Act passed by Congress<sup>16</sup>. This replaced the Aid to Families with Dependent Children (AFDC), the Job Opportunities and Basic Skills Training (JOBS), and the Emergency Assistance (EA) programs<sup>17</sup><sup>18</sup>. The AFDC supported low-income families and organizations from 1935 to 1996. TANF is a block grant where states and tribes are allocated federal funds to cover benefits, administrative expenses, and services to needy families<sup>19</sup><sup>20</sup>. A block grant is an amount of money allocated for a social services project. These projects include activities such as helping families, children, and care for the elderly. Each state is allotted a set amount of funding based on a predetermined formula and the specific program in question.

Currently all eight of the Access to Jobs route run through areas where TANF families reside. Figure 3 shows how many TANF cases reside in three areas of Montgomery County.

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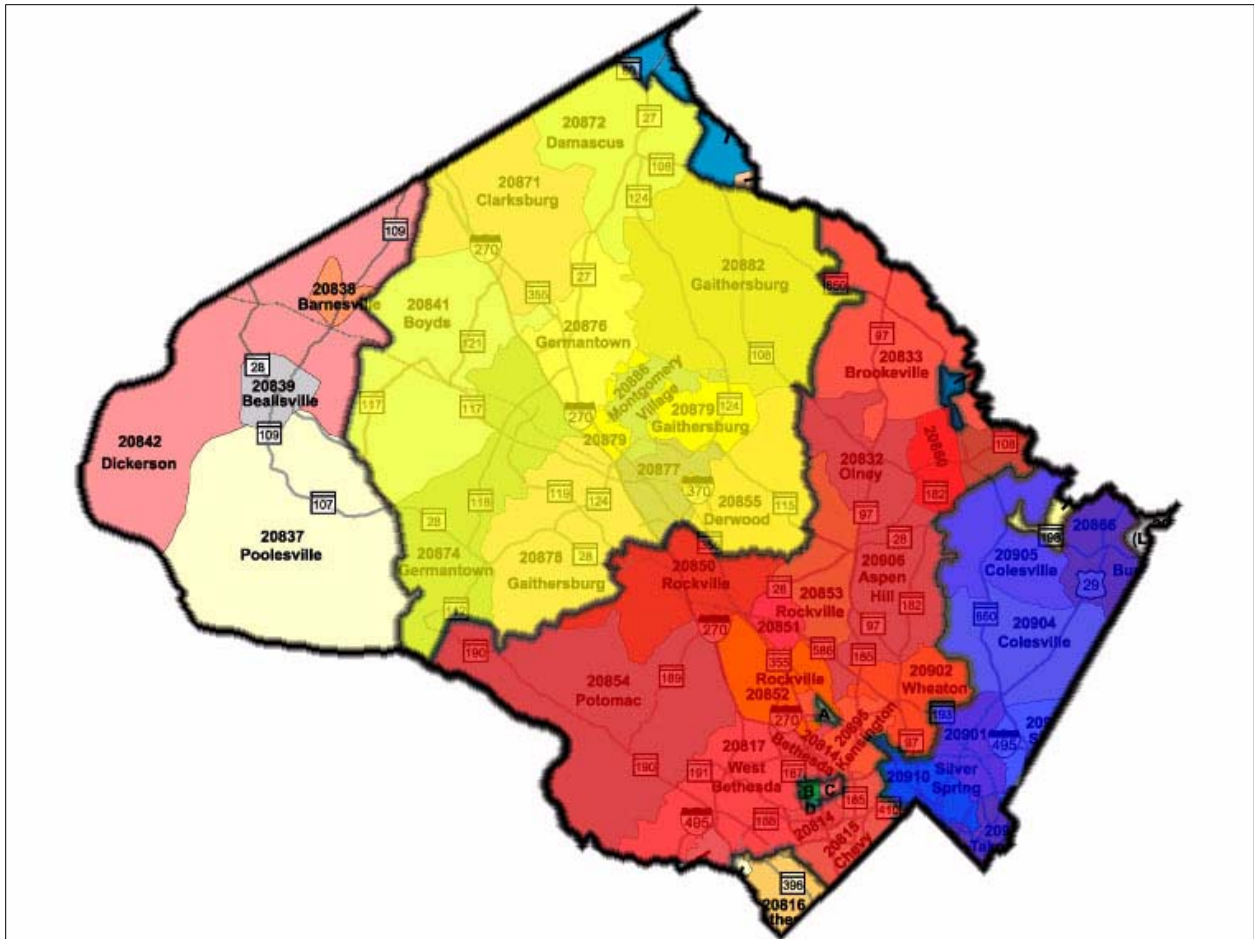
<sup>16</sup> Coven, Martha. (2003, October). *An Introduction To TANF*. Retrieved September 20, 2005 from <http://www.cbpp.org/1-22-02tanf2.htm>

<sup>17</sup> Coven

<sup>18</sup> Department of Health and Human Services. (2005, August). *Office of Family Assistance Homepage*. Retrieved September 24, 2005 from [http://www.acf.hhs.gov/opa/fact\\_sheets/tanf\\_factsheet.html](http://www.acf.hhs.gov/opa/fact_sheets/tanf_factsheet.html)

<sup>19</sup> Department of Health and Human Services. (2005, August)

<sup>20</sup> House Ways and Means. (2000). *Green Book: Social Services Block Grant*. Retrieved October 10, 2005 from [http://www.policyalmanac.org/social\\_welfare/archive/ssbg.shtml](http://www.policyalmanac.org/social_welfare/archive/ssbg.shtml)



**Figure 3: TANF Map**

The yellow area is Germantown, which has 235 TANF cases, red is Rockville which has 215 cases, and the dark blue is the Silver Spring which has 238 cases. Currently in Montgomery County, there are 688 TANF cases.

Any funding distributed through the TANF program must be allocated to fulfill one of four purposes. A portion of the TANF funding must be spent on transportation because one of the purposes is to “end the dependence of needy parents on government benefits by promoting job preparation, work, and marriage<sup>21</sup>.” Although throughout the United States, only two

<sup>21</sup> Coven

percent of the TANF budget is spent on transportation<sup>22</sup>. This is shown in Figure 4: How TANF Dollars Are Spent.

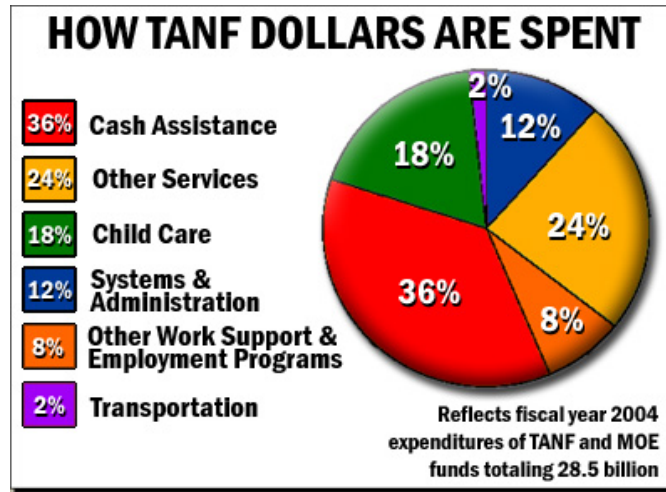


Figure 4<sup>23</sup>: How TANF Dollars Are Spent

If a family or parent fails to achieve an eligibility requirement previously designated by TANF for their situation, such as not fulfilling required work hours or “freeloading,” their TANF allocations can decrease or be halted<sup>24</sup>. Not every family is eligible for benefits, for example, if an adult has received five years of federal assistance, they become ineligible for aid from TANF benefits<sup>25</sup>. It is the main objective of the TANF program and its officials to help families be independent of government aid.

The TANF program’s goals are to help families become financially independent of government welfare programs; eligibility for the TANF program is determined by a set of criteria. Those families with low or very low incomes, residing legally in the United States, and having a child under the age of nineteen are eligible to receive assistance<sup>26</sup>. Maryland had

<sup>22</sup> Coven

<sup>23</sup> Coven

<sup>24</sup> Department of Health and Human Services. (2005, August)

<sup>25</sup> Department of Health and Human Services. (2005, August)

<sup>26</sup> U.S. Government. (n.d.). *Benefits Report*. Retrieved October 6, 2005 from [govebenefits.gov/govbenefits/benefits/report.jhtml?dispatch=federal&bid=613&oid=6](http://govebenefits.gov/govbenefits/benefits/report.jhtml?dispatch=federal&bid=613&oid=6)

59,362 TANF recipients in the 2004 Fiscal Year; the United States had 4,784,042 recipients<sup>27</sup>.

In the 2003 fiscal year, Maryland had fewer than four percent of families receiving funding from TANF for more than five years as compared to less than two percent, which is the national percentage<sup>28</sup>.

## **History of Urban Planning**

Transportation service problems exist in every metropolitan area. There is no way to eliminate these problems, only to lessen their effects. Congestion, a mounting problem, is something must be lived with. There is no way to build enough roads to end congestion. This problem is discussed in John Dickey's book, *Metropolitan Transportation Planning*<sup>29</sup>. Other problems associated with transit systems in large metropolitan areas include inadequate capacity and a high user cost. Along with these potential problems, Dickey suggests a ten step problem-solving process that may be very beneficial to our group during this project. The process begins with identifying the problem as precisely as possible. Next is setting goals and hypothesizing where and why the problem developed. Data collection and the development of a model of the problems follow and evaluation of possible solutions is step six, with one of the possible solutions always being if "no changes are made." Finishing the ten steps are modifying, planning and implementation of the best solution<sup>30</sup>. This process is what we plan on following during the course of our project.

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<sup>27</sup> Department of Health and Human Services. (2005). *Office of Family Assistance: Temporary Assistance to Needy Families; Separate State Program- Maintenance of Effort; Aid to Families with Dependant Children. Caseload Data*. [Electronic Version]

<sup>28</sup> Department of Health and Human Services. (2005, October). *Office of Family Assistance: TANF Federal Five-Year Time Limit; Fiscal Year 2003*. [Electronic Version]

<sup>29</sup> Dickey, John W. *Metropolitan Transportation Planning* (2<sup>nd</sup> ed). New York: Hemisphere, 1983.

<sup>30</sup> Dickey



Sigurd Grava brings up many good points in his text *Urban Transportation Systems*. Here Grava elaborates on not only the effectiveness of buses but on their importance to a multi-model system. He discusses how buses are the backbone of any mass transit system. In Montgomery County, Ride On is the bus system that is the backbone of the public transportation system. Ride On connects with the Washington, D.C. Metro system, the MARC train system, as well as the MTA bus system. Our project is looking specifically at how well the Ride On system moves people into the transportation network. Buses are cost effective and have the potential to open new job opportunities, where they previously would not have existed or been available to everyone, by making these areas more accessible to the population<sup>31</sup>.

Peter Newman and Jeffrey Kenworthy suggest that wealth has a direct correlation to automobile usage in their text *Sustainability and Cities*<sup>32</sup>. This has not been shown to be entirely true but those who are wealthy enough to afford a car will typically use one. By making this assumption we can also form the compliment assumption that those who cannot afford a car will rely heavily on public transportation. We want to know why people are using the bus during these odd hours. Possible reasons include they do not own a car or they do not want to use their car. Most of all we are concerned with getting odd hour workers into the larger transportation network and whether Ride On is taking the riders needs into consideration when proposing new services.

## **Other Metropolitan Area Bus Systems**

The Worcester Regional Transit Authority (WRTA) recently finished a comprehensive redesign study of its bus system. Effective January 2006, bus routes with the least activity will

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<sup>31</sup> Grava, Sigurd. *Urban Transportation Systems: Choices for Communities*. New York: McGraw-Hill, 2003.

<sup>32</sup> Newman, Peter & Jeffrey Kenworthy. *Sustainability and Cities: Overcoming Automobile Dependence*. Washington D.C.: Island Press, 1999.

be changed in order to maximize service to areas that need bus service the most: low-income areas and places of business. This study was used to create a five-year transportation plan for Worcester and its surrounding areas. Surveys were given to citizens who ride the WRTA buses throughout Worcester, with such key questions as “how many transfers does it take to get to your destination?”, “what are your typical destinations?”, and “what is the purpose of your trip?” There is also general information regarding transportation in and around Worcester<sup>33</sup>.

Los Angeles currently has short and long-range plans for its transportation system that address their average commute time of 28.5 minutes<sup>34 35</sup>. Currently their buses service over 1,400 square miles daily, and assist 1.4 million riders in getting to and from work daily<sup>36</sup>. Plans are in place to improve the reliability and to expand the current service<sup>37</sup>. Los Angeles is hoping that this, in collaboration with extending their rail lines, improving highways, introducing more High Occupancy Vehicle (HOV) lanes and other improvements will decrease congestion, and help their citizens get to and from work<sup>38</sup>.

## **Transportation Assessment Companies**

Urbitran is a company that offers planning services. They evaluate transportation systems such as bus and multi-modal systems, and perform traffic engineering, transportation modeling, and planning projects. Urbitran conducted the study for the Worcester Regional Transit Authority’s bus system refurbishment. They have conducted similar studies in other

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<sup>33</sup> Worcester Regional Transit Authority. (2005, March). *Worcester Regional Transit Authority*. Retrieved September 13, 2005 from <http://therta.com>

<sup>34</sup> Los Angeles County Metropolitan Transportation Authority. (2005). *Transit Services and Information for Los Angeles County*. Retrieved September 25, 2005 from <http://www.mta.net/default.asp>

<sup>35</sup> U.S. Census Bureau. (2002). *Average Travel Time to Work of Workers 16 Years and Over Who Did Not Work at Home*. [electronic version]

<sup>36</sup> Los Angeles

<sup>37</sup> Los Angeles

<sup>38</sup> Los Angeles

metropolitan areas such as New York City, Nashville, and for the Maryland Mass Transit Administration<sup>39</sup>.

One of Urbitran's clients was the New York City Department of Transportation (NYC DOT). Urbitran performed a study of bus operators, and "...is providing [the] New York City Department of Transportation with a comprehensive review and analysis of its local and express network<sup>40</sup>." Urbitran conducted these studies by sampling riders on all of the buses in which NYC DOT was concerned. They use this data in collaboration with background research to give recommendations about routes and to improve service to the riders.

Urbitran has also consulted for New Jersey Transit. The studies were conducted for multiple counties concerned with the Work First New Jersey program. Work First New Jersey is New Jersey's version of the Access to Jobs program, and is funded by the TANF program. Urbitran helped New Jersey Transit assess where bus routes should be to aid welfare families in their everyday lives.

Currently, major cities across the nation have been focusing on improving their transportation systems throughout their communities. Suburbs such as Montgomery County are expanding and with this comes an increasing demand for public transportation. Some cities and suburbs have chosen to focus on expanding old and building new roads, while others have chosen to re-examine and reroute their mass transit systems. Montgomery County is doing both. Much of what has been done was initiated because of the growing needs of low-income families, specifically their transportation needs. Government agencies are trying to not only help the average citizen, but also those most in need and get this section of the population where they

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<sup>39</sup> Los Angeles

<sup>40</sup> Urbitran. (2003). Urbitran Homepage. Retrieved September 13, 2005 from <http://63.240.68.126/~urbitran.com/index.cfm>

need to be effectively and efficiently. Improving the effectiveness of bus and transit systems allows people mobility and with that, new and better opportunities.

## **Development of Procedures**

In order to evaluate whether people's jobs are dependent upon the Ride On extensions we will utilize a survey to collect the information we are interested in. By surveying the riders, we will be able to determine whether Ride On is successful in getting people to and from work. The focus of our study will be seven of the original eight routes that were extended in 1998. Route 12 was omitted because it was only extended on the weekends, and due to time constraints, we were unable to survey this route. Maps of these routes are located in Appendix A: Ride On Routes. In addition, much of our project deals with personal situations and Ride On's level of effectiveness for individual citizens. Therefore, it will be to our advantage to survey riders on these bus routes as their personal narratives and opinions will matter greatly to our study.

### **The Survey**

We will use past surveys in collaboration with background research, to determine what types of questions to ask and the most appropriate wording of these questions to obtain the information we wish to gather. Inoffensive questions need to be developed in order to obtain the best results. Additionally, to ensure consistency between our survey and Ride On's past surveys, we will look over and utilize some of their past questions on our survey. This will enable Ride On to possibly use this data in conjunction with future surveys to examine trends.

After looking at previous studies of transit systems, we have found a collection of potential questions for our survey. The main hurdle is diction; we need to word our questions in such a way as to obtain meaningful responses while not offending people due to the particularity of the questions. The hardest questions to word will be those dealing with the respondent's household income or job specifications. Personal income is a private matter that may cause our

response rate to decrease. To obtain a maximum number of useable responses, we will ask potentially offensive questions towards the end of the survey to gather as much data as we can.

Figure 5: Survey Questions from the WRTA Survey shows a selection of survey questions developed for the Worcester Regional Transit Authority, which will help serve as a guide for our study:

1. In a typical week on how many days do you use WRTA?	7	6	5	4	3	2	1	less than 1					
2. How many times do you have to transfer to get to where you are going on this trip? (counting ones you already made)	0	1											
3. What is the zip code at your home?	_____												
4. What is your total household income?	less than \$10,000		\$10,000 – \$14,999			\$15,000 – \$19,999							
	\$20,000 – \$24,999		\$25,000 – \$34,999			\$35,000 – \$49,000							
	\$50,000 – \$74,000		\$75,000 – \$100,000			more than \$100,000							
5. Which of the following applies to you?	employed for pay outside your home (if so, answer questions a-j below)												
	employed for pay inside your home student												
	homemaker				not employed because of disability								
	retired				unemployed								
5a. How many days do you work at this job?	1	2	3	4	5	6	7						
5b. Do you work on Saturday?	yes		no										
5c. Do you work on Sunday?					yes		no						
5d. How many days a week do you take the bus to work?	0	1	2	3	4	5	6	7					
5e. What is the zip code of your place of work?	_____												
5f. Most days, what time does your job start?	_____ AM or PM?												
5g. Most days, what time do you leave work?	_____ AM or PM?												
5h. Which is the closest to the amount you earn per hour before taxes are taken out?	\$6	\$7	\$10	\$12	\$15	\$20	more than \$20						
5h. Which is the closest to the number of hours per week you work at this job?	less than 10		10	20	30	40	more than 40						
5j. In the past year, about how many months have you been employed?	12	11	10	9	8	7	6	5	4	3	2	1	0

Figure 5<sup>41</sup>: Survey Questions from the WRTA Survey

Surveying will be most beneficial to our project because we are focusing around the following research problem: are the extensions of the Ride On lines succeeding in helping late night and early morning workers get to and from work?

<sup>41</sup> Worcester

## Potential Issues

Possible validity concerns will arise from the surveys for two main reasons. First, because the majority of our project will be dealing with our survey and its resulting data, the majority of our validity concerns will arise from our surveying and data entry techniques. Human error could potentially become a problem specifically in the data entry phase of our project. Second, biases may also play a part in the validity of our project. Possible biases on our side, and similarly on the respondent's side include:

1. Stereotyping:

Assumptions about those who use the bus based upon outward appearance or assumptions about us by the riders.

2. Language barriers:

Ineffective communication resulting from speaking different languages than the respondents can result in a misunderstanding of their intended responses and an overall misuse of their data.

3. Cultural differences:

Inadvertently offending people by speech patterns and/or gestures that are interpreted incorrectly.

Other validity issues will arise from how we survey. Our main concern is the number of incomplete surveys we will receive and how these will affect our final results. We will be using every survey we collect and if there is a high incomplete rate, our data may be skewed. Our data may be skewed because of the people who chose to answer the question. For example, if only people with a high income chose to answer that question then our data will be skewed toward a

higher average household income. Similarly, we will not have a one hundred percent response rate and our data may be skewed for this reason.

To alleviate the impact of offensive questions and other validity issues, we will try out our survey on a test group. This test group will provide us a way to gauge the response rate and show us how we need to tailor the survey and our behavior in order to obtain the most responses.

## **Survey Analysis**

Once we have collected the data, we need to analyze it so that we can fulfill our project objectives. We will assign numerical values for each response of each question. By coding the data in this way, we can present tallied responses to questions to preserve the context from which we gathered data. We will also be able to use Microsoft Access to associate the responses we get back. This will allow us to look at the survey as a whole rather than at the individual responses.

The results of the surveys will allow us to determine whether bus routes are succeeding in transporting people to their places of employment. The surveys will focus on whether people would still have their jobs if the bus system were not readily available to them. It will also cover whether Montgomery County citizens would have access to better jobs or working hours if the routes went to other places or were at different times.

While there are potential problems in our project, it is our goal, by using a survey to obtain data in evaluating Ride On's overall effectiveness as it relates to the Access to Jobs extensions to minimize their effects. Effectiveness will be determined by many different variables such as purpose of trip, number of transfers, and the necessity of the service. We plan to address validity concerns early in our project, though we understand that they cannot be removed entirely. Throughout our project, we will remain conscientious of validity issues and take actions to minimize their impact upon the project as a whole.



## Survey Development

We developed this survey, however, it was inspired by questions appearing on a recent Worcester Regional Transit Administration bus survey as seen in Figure 5: Survey Questions from the WRTA Survey. Upon arriving in Montgomery County, a meeting was arranged to go over the questions on our survey. Ride On wanted to ensure that our survey would yield responses that would aid in determining the success of their Access to Jobs program. Representatives from the marketing department, who were familiar with past Ride On surveys and surveying in general, as well as employees of the Division of Transit Services were present to lend their expertise. Wording was the main topic in the meeting because Ride On wanted a survey that would not only assess their Access to Jobs program, but would also generate responses that would be comparable to surveys done in the past. Each proposed question was scrutinized and the resulting survey was viewed as complete.

During the meeting, Ride On requested that our survey would incorporate certain aspects of past surveys to ensure riders' familiarity with the forms. The majority of questions that dealt with work or with numbers of transfers or trips mimicked past Ride On surveys. Specifically income brackets and alternate modes of transportation were copied from previous Ride On surveys. The Ride On surveys that we used to format our questions were the 2004 customer satisfaction survey and a previous Access to Jobs survey. Both of these past Ride On surveys are available in Appendix B: Past Ride On Surveys.

Once the changes to our original survey were finalized, the next step was to determine what physical form the survey should take. It was determined that the main limiting factor of our survey would be time. In order for riders to be able to complete the entire survey, we limited the survey to one side of standard eight and a half by eleven-inch sheet of paper. In order to do this

and still fit all the necessary questions, we manipulated the text size of the questions and responses. We printed the questions in a larger, bolder font than the responses to make them easier to read on the dimly lit buses. Also by limiting the survey to one side allowed for a Spanish copy of the survey to be printed on the reverse side. By printing the survey in both English and Spanish, we hoped to give the majority of riders a copy of the survey in a language they understood and could read. According to a past Ride On customer satisfaction survey, the majority of riders speak English, while the second most populous language represented is Spanish, which represents 20.8% of riders<sup>42</sup>. The lack of hard surfaces to write on also came into play when deciding how to print up our survey. For this reason we had the survey printed on thick paper so it would be easier to fill out on the bus. A copy of both our English and Spanish survey is in Appendix C: Our Survey.

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<sup>42</sup> National

## Test Group

In order to get a feel for the way we would survey these buses we decided it would be best to utilize a test group. A test group is a group, in this case of riders on certain bus trips, whose results are not added to the final data. These are extra trips for our benefit only. We decided to ride a bus on two of the seven routes we are studying, one evening trip and one morning trip. We decided upon a route 26 bus for our night trip and a route 47 bus for our morning trip because of when these buses started. The times were within the window we were studying, after 10 pm and before 6 am. Since route 26 does not travel by our office in Rockville, Maryland, we rode route 47 from Rockville to Montgomery Mall Transit Center where route 26 would begin its trip.

We surveyed the route 47 trip to practice asking riders to take our survey before we rode the route 26 and 55 buses. On the route 47 bus, there were four riders, all of which were willing to take the survey. Upon arriving at the Montgomery Mall Transit Center, we saw a number of people waiting for the bus and thought that it would be beneficial to begin surveying before the bus arrived. Once we got on the bus, we realized that this was to our disadvantage, as we would not remember whom we had previously asked. On the route 26 bus trip, there were fifty-three riders, twenty-five of which were willing to take our survey. The following morning, we surveyed a route 55 bus trip that originated in Rockville and went to the Germantown Transit Center. There were forty-seven riders and twenty-two filled out surveys on this bus trip.

We encountered some problems during the execution of our test group. One problem was that riders had to stand because seats were unavailable. Another problem was that we could not approach people when they were on cell phone.

Our test group greatly helped us form the method in which we would conduct this survey. We found that it would be most beneficial to designate one person to the front and one to the back of the bus. These surveyors would ask riders to participate and they would hand out the surveys along with golf pencils. From our test group we found that asking people individually once they sat down rather than as they stepped onto the bus would help increase our response rate because it would be more personal. Also by dividing the bus between surveyors, it helped us from asking people to take the survey more than once. The third person would sit in the middle of the bus and collect the surveys in an envelope specifically for that day, route, and trip. This third person would also keep track of the total number of people on the bus for that trip.

We knew before we started surveying that a number of Ride On passengers would not speak English. After passing out surveys, we realized that we would need to communicate with people who spoke Spanish. By stating, “yo no hablo español,” I do not speak Spanish, and “Gracias,” thank you, people who speak Spanish would be less suspicious of us, and generally more at ease and open to taking and filling out a survey.

After surveying three separate trips we felt more confident with the routine, especially how to approach riders and ask them to fill out a survey. We identified two questions that needed to be reworded and learned a few Spanish phrases. Also from the number of responses that we collected our response rate was close to fifty percent. We felt confident that this response rate would remain constant throughout the duration of our survey because the trips we chose were close in time to the ones we would be surveying to gather data. From the experience and what we learned, the test group was viewed as a success.

## Results

After riding Ride On buses for eighteen nights and eighteen mornings, we have collected 508 surveys. Table 7: Trips Surveyed shows the routes and times of the bus trips we surveyed.

**Table 7: Trips Surveyed**

<b>Route 5</b>	<b>Weekdays</b>	<b>Weekends</b>
Mornings	5:05, 5:26, 5:40	5:33, 6:14 (Sunday)
Evenings	11:03, 11:48, 11:43, 12:28	11:33, 12:27 (Saturday)
<b>Route 16</b>		
Mornings	4:27, 5:40	5:01, 5:46 (Saturday)
Evening	12:00, 12:40	11:36, 12:42 (Saturday)
<b>Route 20</b>		
Mornings	4:26, 5:33	5:00, 6:33 (Sunday)
Evenings	12:02, 12:30, 11:32, 12:00	12:01, 12:30 (Sunday)
<b>Route 26</b>		
Mornings	4:56, 5:02, 5:26	5:17, 6:16 (Sunday)
Evenings	11:17, 12:19	11:17, 12:16 (Sunday)
<b>Route 46</b>		
Mornings	4:53, 5:41, 6:04 (Veterans Day)	
Evenings	12:30, 1:10, 11:45, 12:31 (Veterans Day)	
<b>Route 55</b>		
Mornings	4:50, 5:04	5:30, 6:11 (Sunday)
Evenings	11:30, 12:35, 11:58	11:30, 12:11 (Sunday)
<b>Route 59</b>		
Mornings	5:20, 4:49	5:17, 6:10 (Saturday)
Evenings	10:20, 11:29, 12:05, 12:50	11:30, 12:25 (Saturday)

We chose these trips to survey because we wanted to make sure we surveyed the first and last trips in both directions on the seven routes in both the morning and the evening. Once we determined when these trips ran we were then able to add extra trips to our schedule making sure none overlapped. This way we would avoid being stranded.

## **Overall**

Over the three weeks, we asked 1,029 riders to participate in our survey. We collected 508 surveys. Our overall response rate for our survey was 49.4%. Based on the findings of our test group this is the percentage we anticipated.

## **Mornings**

During the eighteen mornings we asked 665 people, 309 filled out a survey. This gave us a response rate of 46.4%.

## **Nights**

During the eighteen nights, 364 people rode on these bus trips and 199 filled out at least part of the survey before getting off the bus, yielding a response rate of 54.7 percent.

## **Spanish**

Of our 508 total completed surveys, 130 of them were filled out in Spanish. This means that the percentage of Spanish surveys is 25.6%. Of the morning responses, 31.1% were in Spanish. In addition, in the night 17.1% of the responses were in Spanish.

## **Survey Questions**

The survey consists of fifteen questions and a comments section. People were asked to circle as many responses that pertained to them. In addition, some were to be answered only if they chose work as the answer to the main purpose of their trip. Questions three through six on our survey were asked to be filled out only if the rider's current trip is related to work. The

survey in both English and Spanish is available in Appendix C: Our Survey. The following results were obtained from all of our collected surveys.

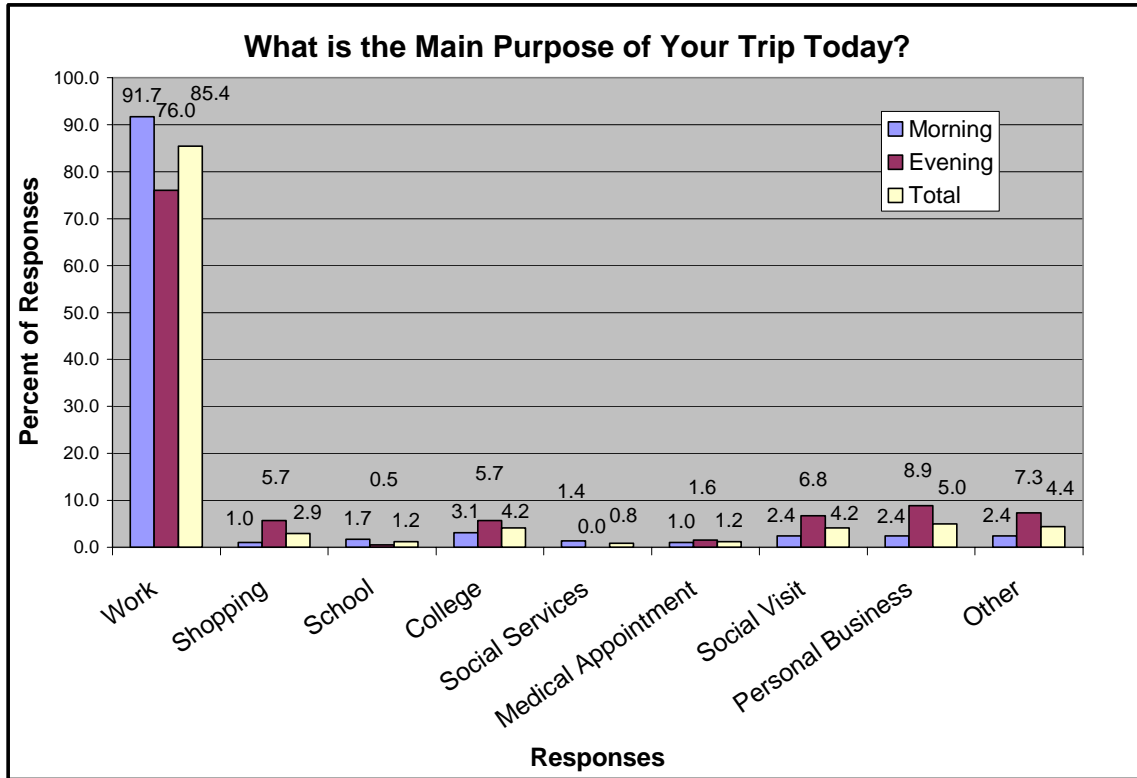
**Question One: “What is the main purpose of your trip today?”**

Table 8: Responses to Question One shows the total responses for question one.

**Table 8: Responses to Question One**

<b>What is the <u>main</u> purpose of your trip today?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Work	265	146	411
Shopping	3	11	14
School	5	1	6
College	9	11	20
Social Services	4	0	4
Medical Appointment	3	3	6
Social Visit	7	13	20
Personal Business	7	17	24
Other	7	14	21
Total Responses	310	216	526
Total Respondents to this Question	288	192	474

Figure 6: Response Percentage of Question One shows the percentage of responses for question one.



**Figure 6: Response Percentage of Question One**

Nineteen people answered work and circled one of the other answers, eight riders circled work and two other answers. One person circled work and three answers, while one rider circled work and four other answers. Three circled two answers on their surveys of which work was neither. Thirty-one total people who circled more than one answer for question one.

**Question Two: “Are you going to or coming from your answer to question one?”**

Table 9: Responses to Question Two shows the total responses for question two.

**Table 9: Responses to Question Two**

<b>Are You Going To or Coming From Your Destination?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Going To	246	56	302
Coming From	36	123	159
Total Responses	282	179	461
Total Respondents to this Question Responses	265	171	436



Figure 7: Response Percentage of Question Two shows the percentage of responses for question two.

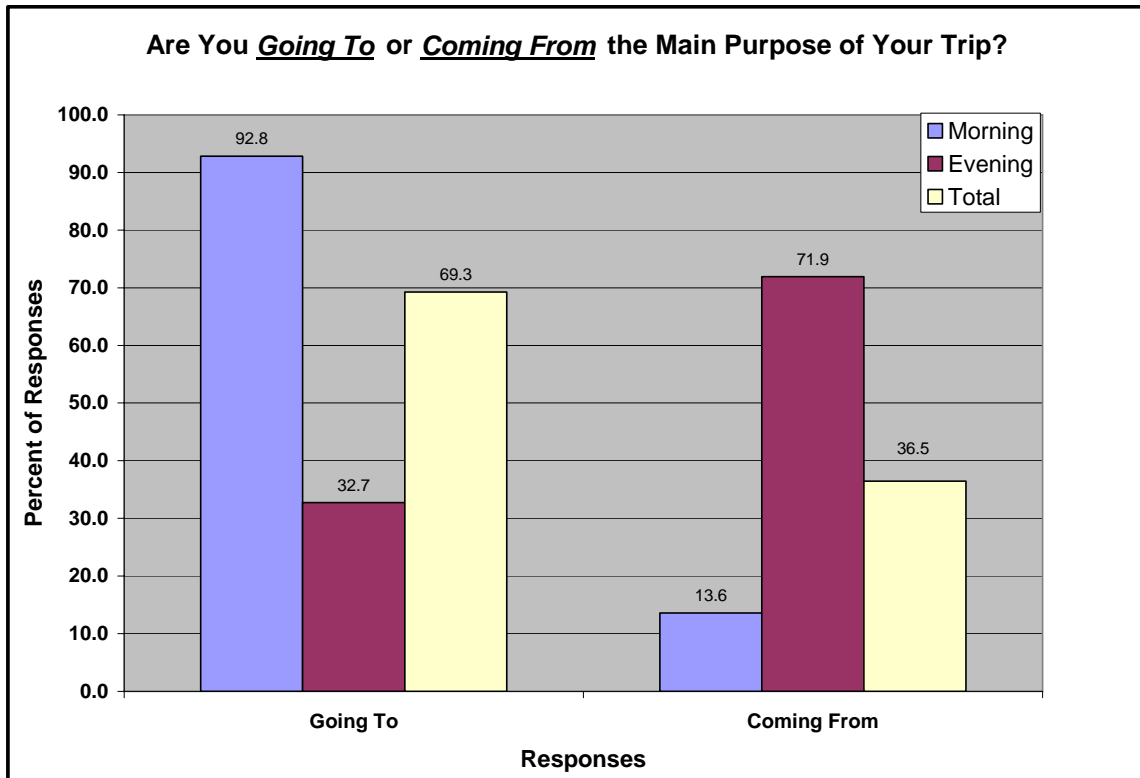


Figure 7: Response Percentage of Question Two

Twenty-three people answered that they were both going to and coming from their answer to number one.

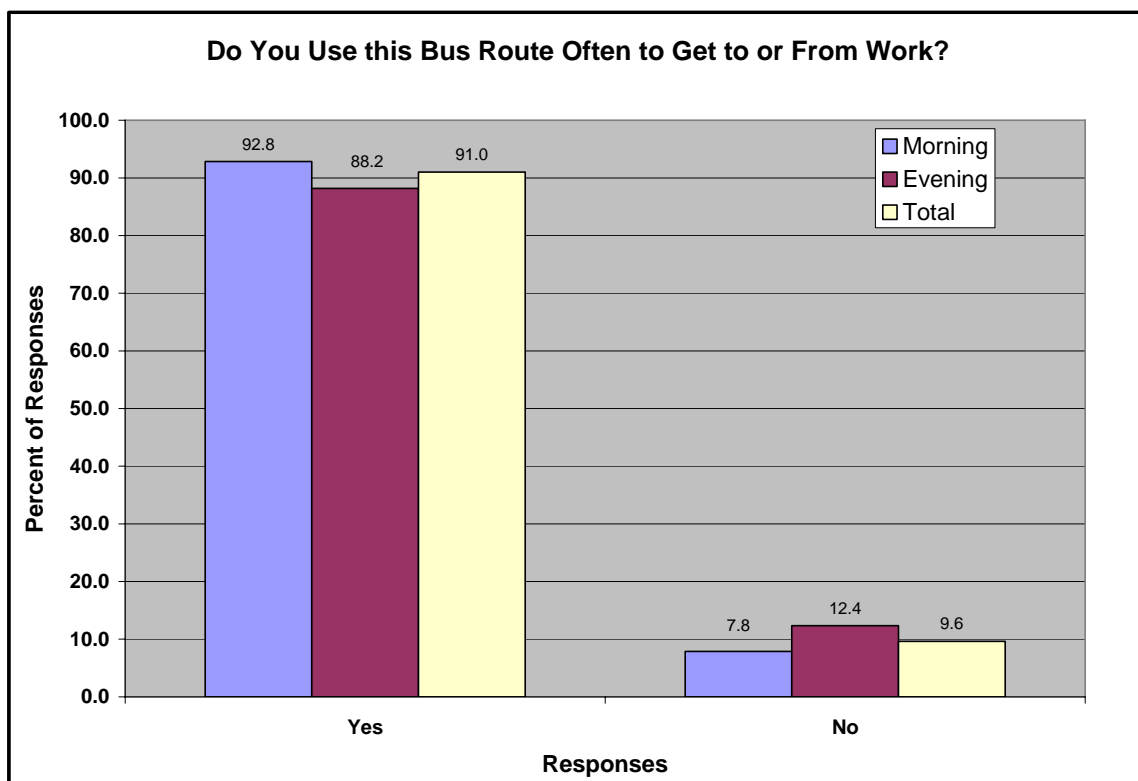
**Question Three: “Do you use this bus route often to get to or from work?”**

Table 10: Responses to Question Three shows the total responses for question three.

**Table 10: Responses to Question Three**

<b>Do You Use this Bus Route Often to get to or from Work?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Yes	272	164	436
No	23	23	46
Total Responses	295	187	482
Total Respondents to this Question	293	186	479

Figure 8: Response Percentage of Question Three shows the percentage of responses for question three.



**Figure 8: Response Percentage of Question Three**

Three people circled both “Yes” and “No.”

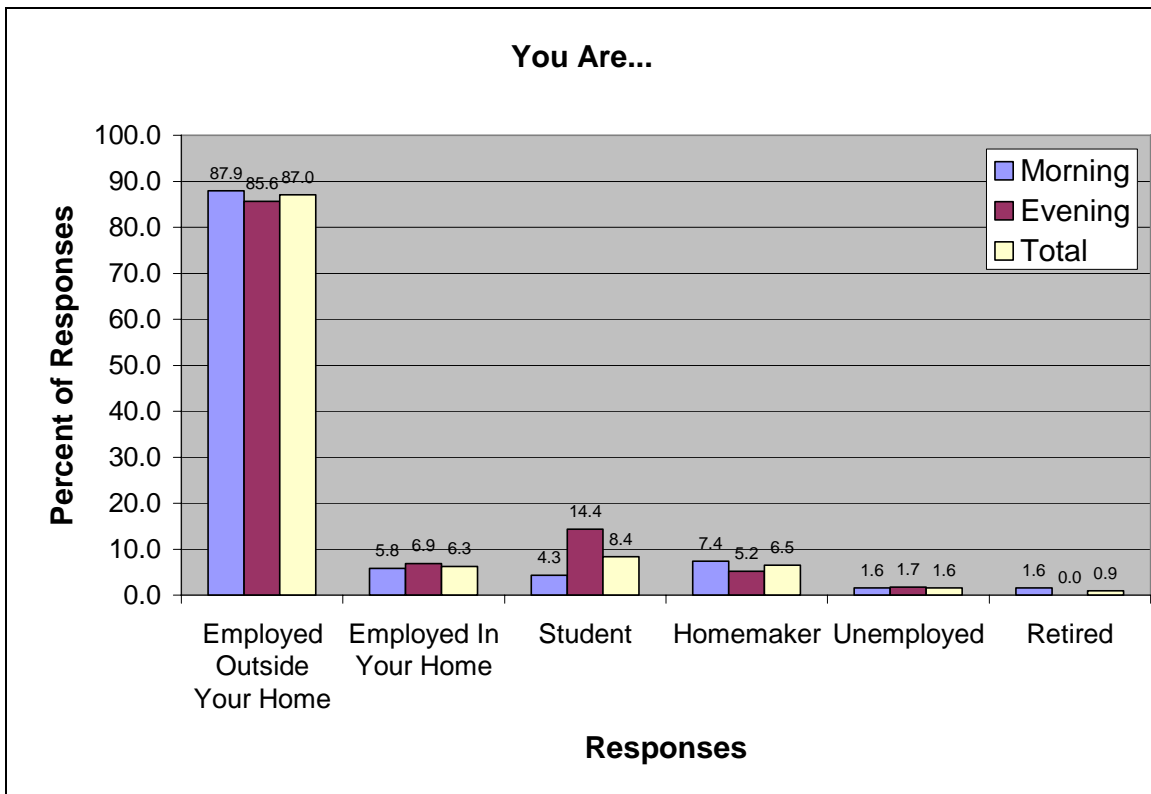
**Question Four: “You are:”**

Table 11: Responses to Question Four shows the total responses for question four:

**Table 11: Responses to Question Four**

<b>You Are...</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Employed <u>Outside Your Home</u>	226	149	375
Employed In Your Home	15	12	27
Student	11	25	36
Homemaker	19	9	28
Unemployed	4	3	7
Retired	4	0	4
Total Responses	279	198	477
Total Respondents to this Question	257	174	431

Figure 9: Response Percentage of Question Four shows the percentage of responses for question four.



**Figure 9: Response Percentage of Question Four**

Forty-two people circled two answers, and two people circled three answers on question four.

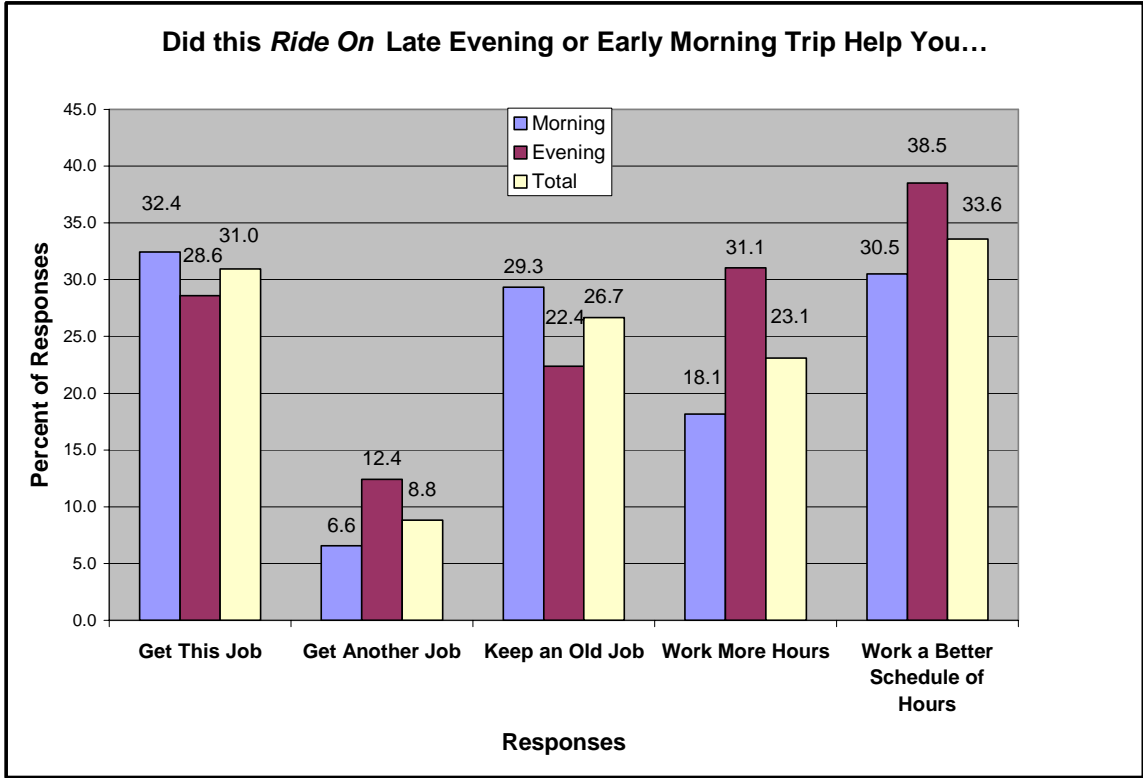
**Question Five: “Did this Ride On late evening or early morning bus trip help you...”**

Table 12: Responses to Question Five shows the total responses for question five.

**Table 12: Responses to Question Five**

<b>Did this Ride On Late Evening or Early Morning Bus Trip Help You...</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Get This Job	84	46	130
Get Another Job	17	20	37
Keep an Old Job	76	36	112
Work More Hours	47	50	97
Work a Better Schedule of Hours	79	62	141
<b>Total Responses</b>	<b>303</b>	<b>214</b>	<b>517</b>
<b>Total Respondents to this Question</b>	<b>259</b>	<b>161</b>	<b>420</b>

Figure 10: Response Percentage of Question Five shows the percentage of responses for question five.



**Figure 10: Response Percentage of Question Five**

Fifty-three people circled two answers on their surveys. Five people circled three answers, six people circled four answers, and five people circled all possible answers.

**Question Six: “If you were not taking this Ride On late evening or early morning bus trip to get to work, how would you get to this job?”**

Table 13: Responses to Question Six shows the total responses for question six.

Table 13: Responses to Question Six

If You Were Not Taking this Ride On Late Evening or Early Morning Bus Trip to Get to Work, How Would You Get to this Job?			
Responses	Morning	Evening	Total
Wouldn't Have this Job	87	62	149
Take a Taxi	42	34	76
Get a Ride with Someone	44	20	64
Ride in a Carpool/Vanpool	13	8	21
Walk or Run	21	21	42
Ride a Bicycle	10	8	18
Ride a Different Bus Route	60	32	92
Drive Alone	20	23	43
Other	15	9	24
Total Responses	312	217	529
Total Respondents to this Question	275	173	448

Figure 11: Response Percentage of Question Six shows the percentage of responses for question six.

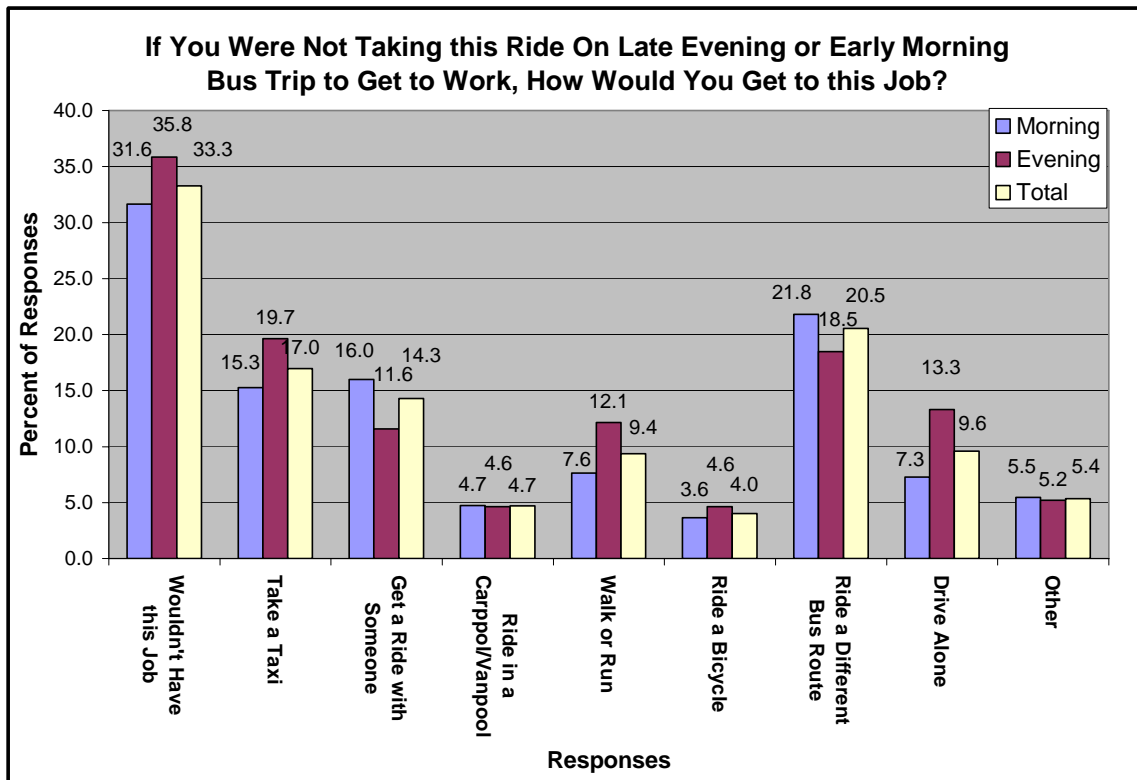


Figure 11: Response Percentage of Question Six

Forty people circled two answers for question six. Seventeen people circled three answers, and two people circled five answers.

**Question Seven: “What time do you typically utilize the bus?”**

Table 14: Responses to Question Seven shows the total responses for question seven.

**Table 14: Responses to Question Seven**

<b>What Time Do You Typically Utilize the Bus?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Before 6am	228	26	254
6am - 10am	49	46	95
10am - 2pm	9	34	43
2pm - 6pm	27	34	61
6pm - 10pm	13	21	34
10pm - 2am	11	100	111
Total Responses	337	261	598
Total Respondents to this Question	286	175	461

Figure 12: Response Percentage of Question Seven shows the percentage of responses for question seven.

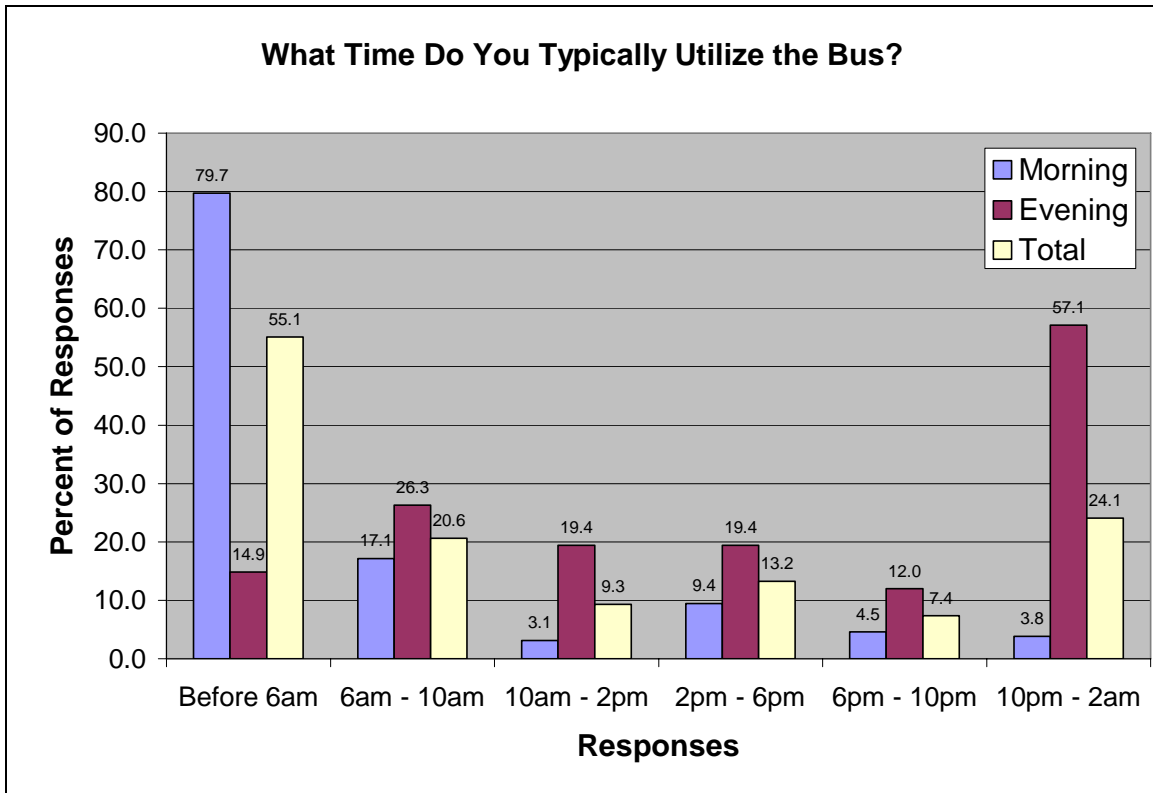


Figure 12: Response Percentage of Question Seven

Eighty people circled two answers for question seven. Eight people also circled three answers, five people circled four answers, one circled five answers, and three people circled all six.

**Question Eight: “During your normal week, how many total *trips* do you take on Ride On?”**

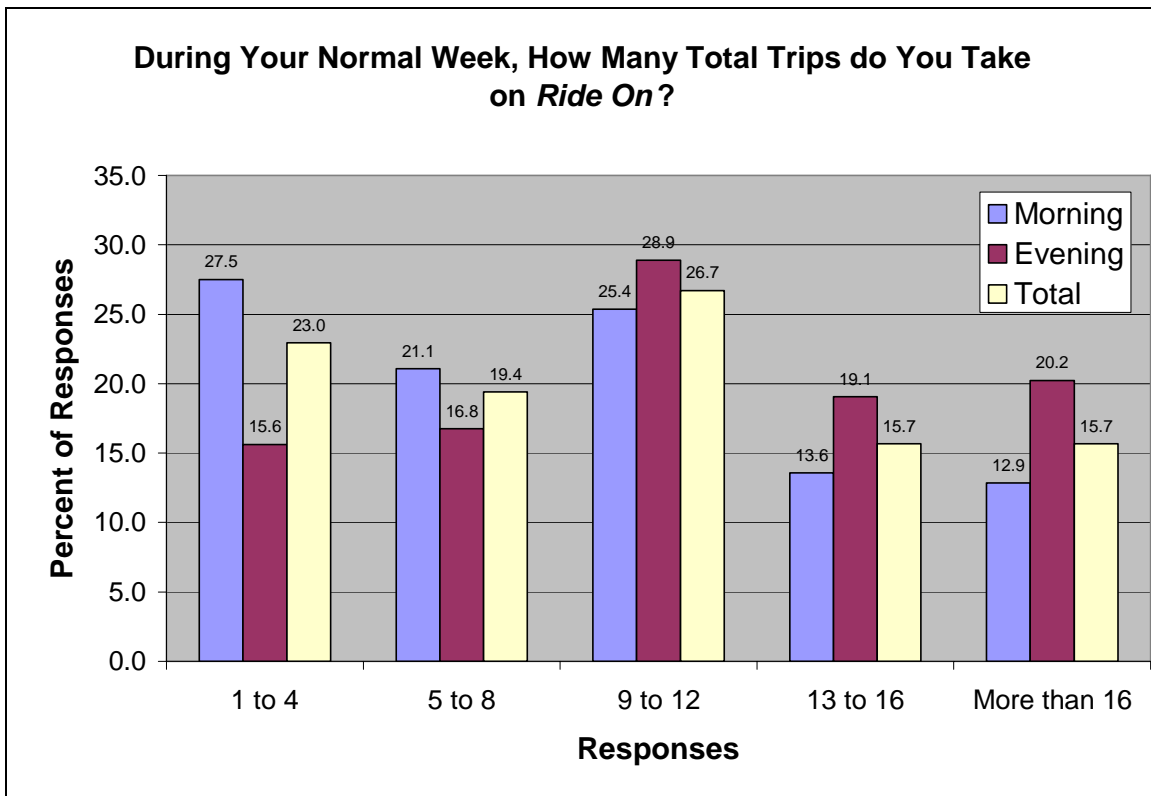
Table 15: Responses to Question Eight shows the total responses for question eight.



**Table 15: Responses to Question Eight**

<b>During Your Normal Week, How Many Total Trips do You Take on Ride on?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
1 to 4	77	27	104
5 to 8	59	29	88
9 to 12	71	50	121
13 to 16	38	33	71
More than 16	36	35	71
<b>Total Responses</b>	<b>281</b>	<b>174</b>	<b>455</b>
<b>Total Respondents of this Question</b>	<b>280</b>	<b>173</b>	<b>453</b>

Figure 13: Response Percentage of Question Eight shows the percentage of responses for question eight.



**Figure 13: Response Percentage of Question Eight**

Two people circled two answers for question eight.

**Question Nine: “How many bus transfers will you make to get to your destination?”**

Table 16: Responses to Question Nine shows the total responses for question nine.

**Table 16: Responses to Question Nine**

<b>How Many Transfers will You Make to Get to Your Destination?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
0	43	23	66
1	75	51	126
2	105	73	178
3	39	18	57
More than 3	15	9	24
Total Responses	277	174	451
Total Respondents of this Question	277	173	450

Figure 14: Response Percentage of Question Nine shows the percentage of responses for question nine.

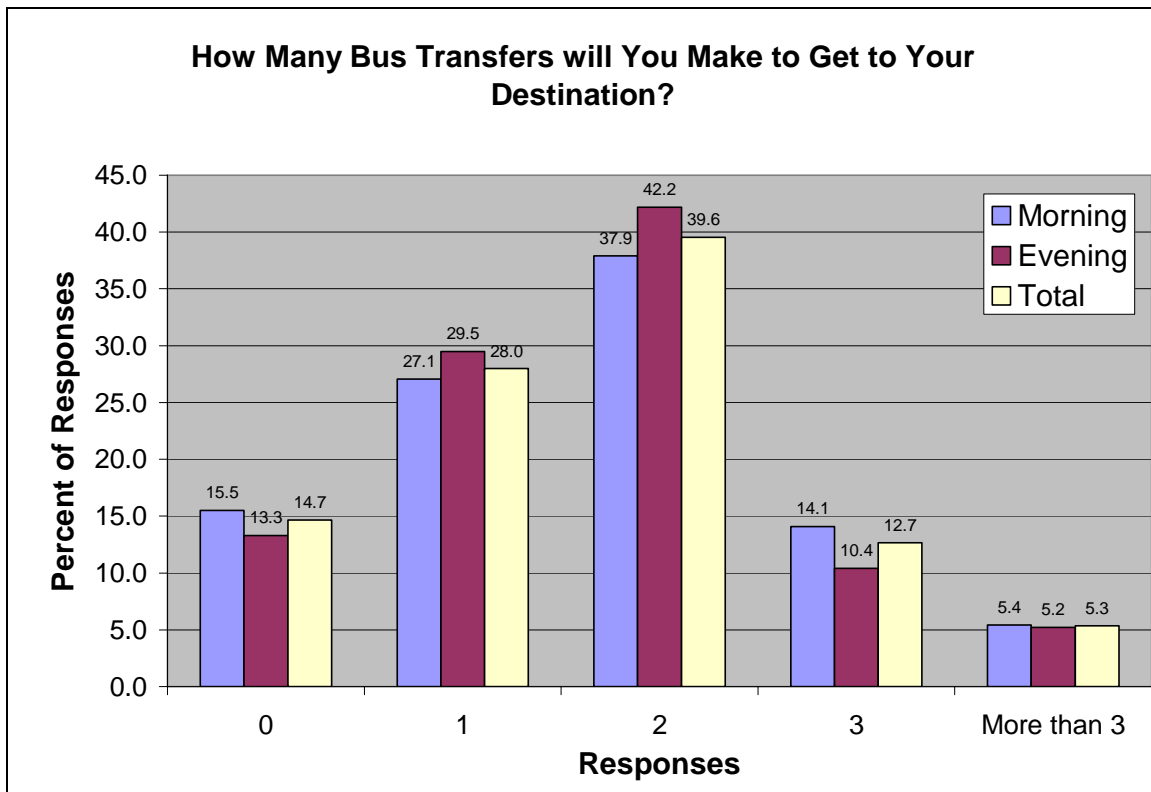


Figure 14: Response Percentage of Question Nine

Two people circled two answers for question nine.

**Question Ten: “What forms of transportation will you use during your trip other than Ride On?”**

Table 17: Responses to Question Ten shows the total responses for question ten.

**Table 17: Responses to Question Ten**

<b>What Forms of Transportation Will You Use During Your Trip Other Than Ride On?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Metrobus	161	86	247
Metrorail	94	92	186
MARC Train	5	4	9
MTA Bus	7	6	13
Taxi	27	22	49
Carpool/Vanpool	2	5	7
Personal Car	18	8	26
Bicycle	9	4	13
Total Responses	323	227	550
Total Respondents of this Question	256	169	425

Figure 15: Response Percentage of Question Ten shows the percentage of responses for question ten.

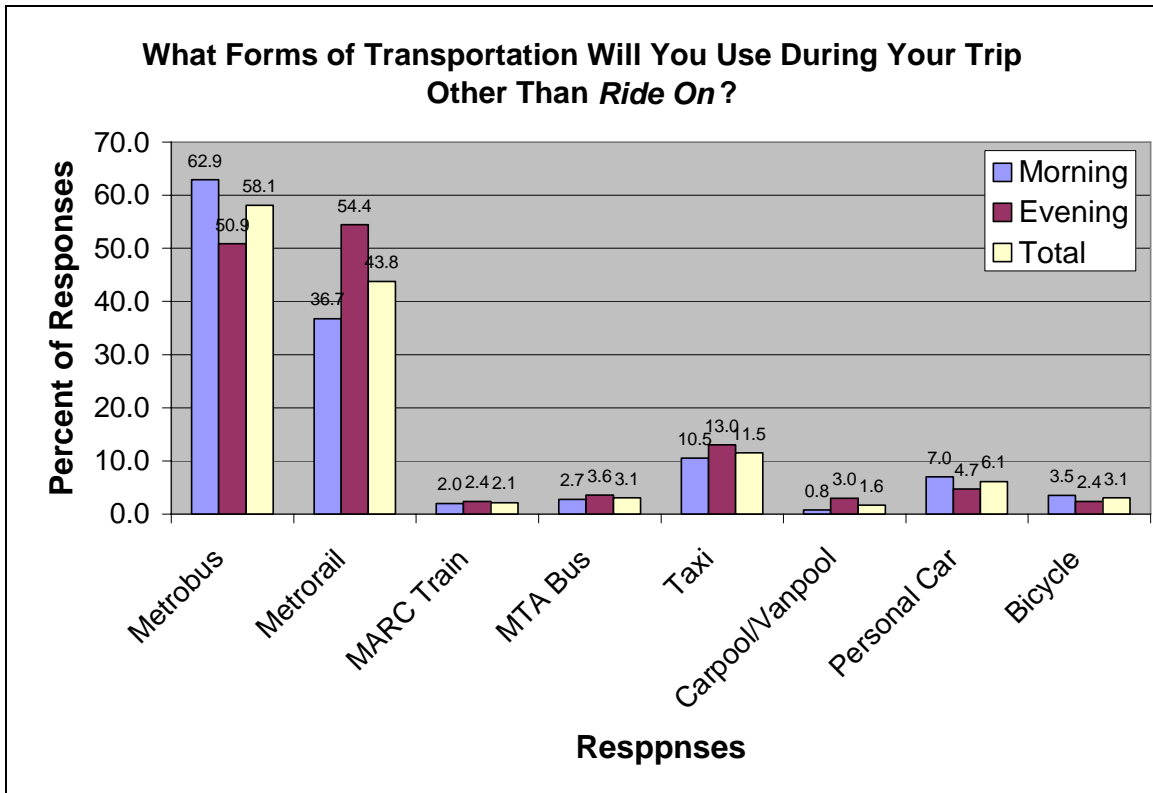


Figure 15: Response Percentage of Question Ten

Eighty-six people circled two answers for question ten. Thirteen circled three answers, and four people circled four answers.

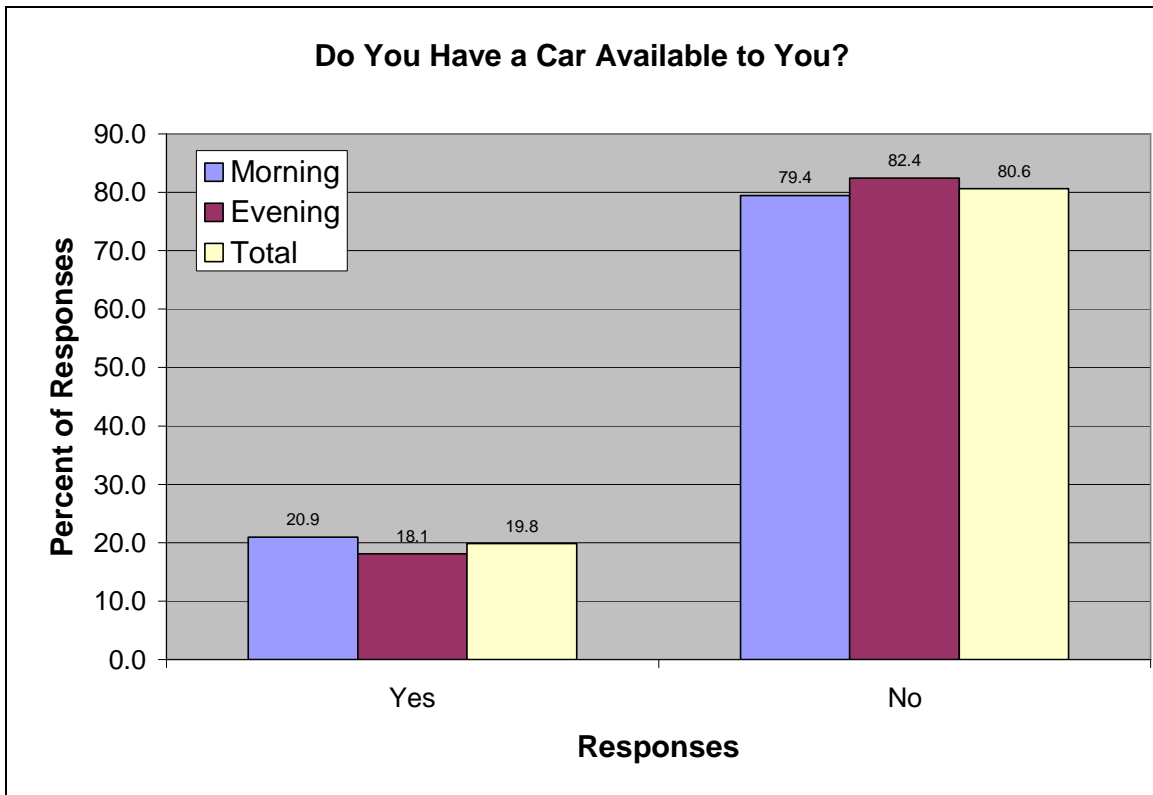
**Question Eleven: “Do you have a car available to you?”**

Table 18: Responses to Question Eleven shows the total responses for question eleven.

**Table 18: Responses to Question Eleven**

<b>Do You Have a Car Available to You?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Yes	59	33	92
No	224	150	374
Total Responses	283	183	466
Total Respondents of this Question	282	182	464

Figure 16: Response Percentage of Question Eleven shows the percentage of responses for question eleven.



**Figure 16: Response Percentage of Question Eleven**

Two people circled both answers for question eleven.

**Question Twelve: “How many jobs do you currently hold?”**

Table 19: Responses to Question Twelve shows the total responses for question twelve.

**Table 19: Responses to Question Twelve**

<b>How Many Jobs Do You Currently Hold?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
0	4	5	9
1	222	115	337
2	46	56	102
3	2	2	4
More than 3	2	1	3
Total Responses	276	179	455
Total Respondents of this Question	276	178	454

Figure 17: Response Percentage of Question Twelve shows the percentage of responses for question twelve.

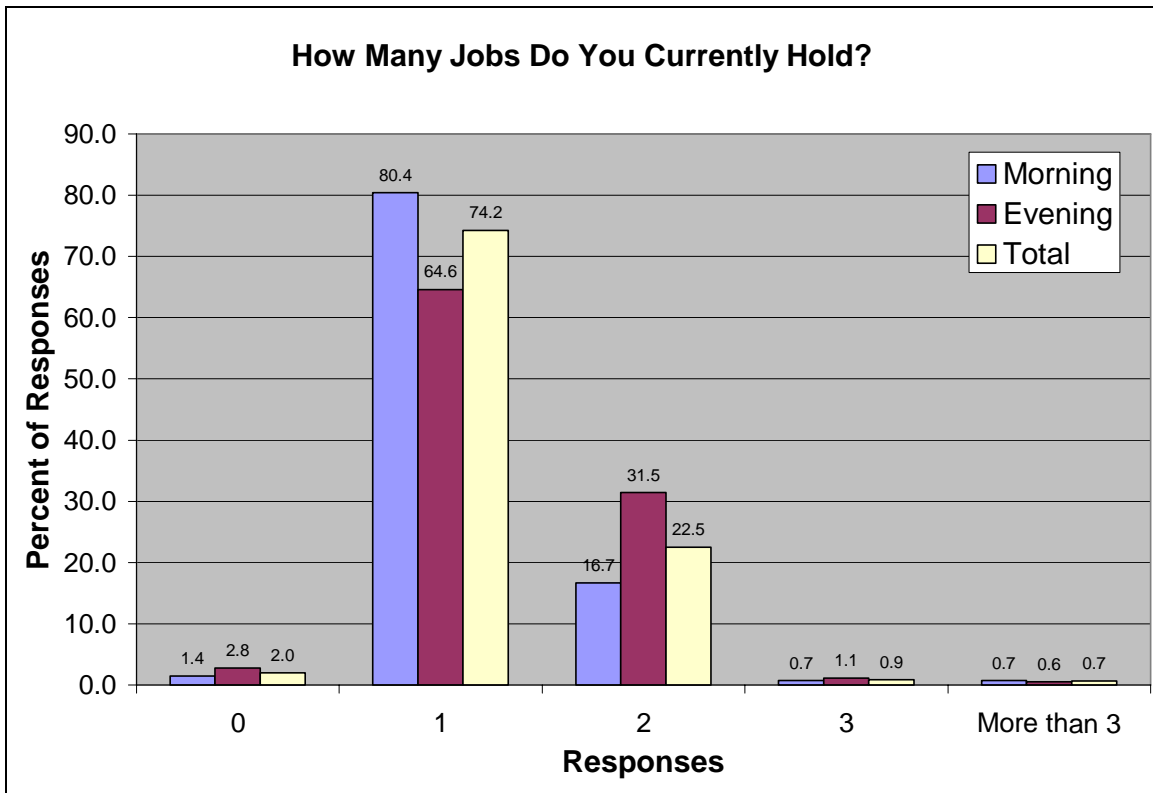


Figure 17: Response Percentage of Question Twelve

One person circled two answers for question twelve.

**Question Thirteen: “How many hours a week do you work?”**

Table 20: Responses to Question Thirteen shows the total responses for question thirteen.

**Table 20: Responses to Question Thirteen**

<b>How Many Hours a Week Do You Work?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Less Than 20	11	9	20
20 to 30	33	25	58
31 to 40	126	72	198
41 to 48	59	31	90
More Than 48	49	40	89
Total Responses	278	177	455
Total Respondents of this Question	277	176	453

Figure 18: Response Percentage of Question Thirteen shows the percentage of responses for question thirteen.

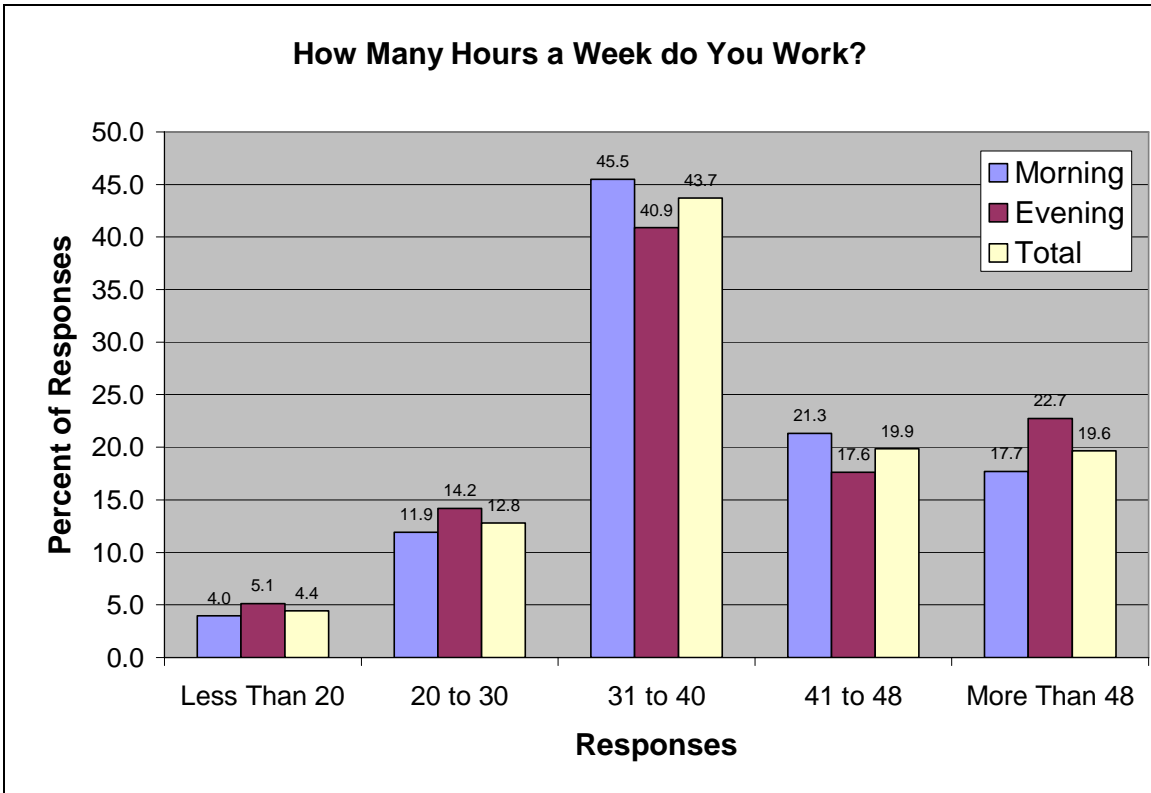


Figure 18: Response Percentage of Question Thirteen

Four people circled two answers for question thirteen.

**Question Fourteen: “How many days per week do you work?”**

Table 21: Responses to Question Fourteen shows the total responses for question fourteen.

**Table 21: Responses to Question Fourteen**

<b>How Many Days per Week Do You Work?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Less than One	2	4	6
1	0	1	1
2	1	1	2
3	5	7	12
4	10	14	24
5	158	80	238
6	68	45	113
7	26	27	53
Total Responses	270	179	449
Total Respondents of this Question	267	177	444

Figure 19: Response Percentage of Question Fourteen shows the percentage of responses for question fourteen.

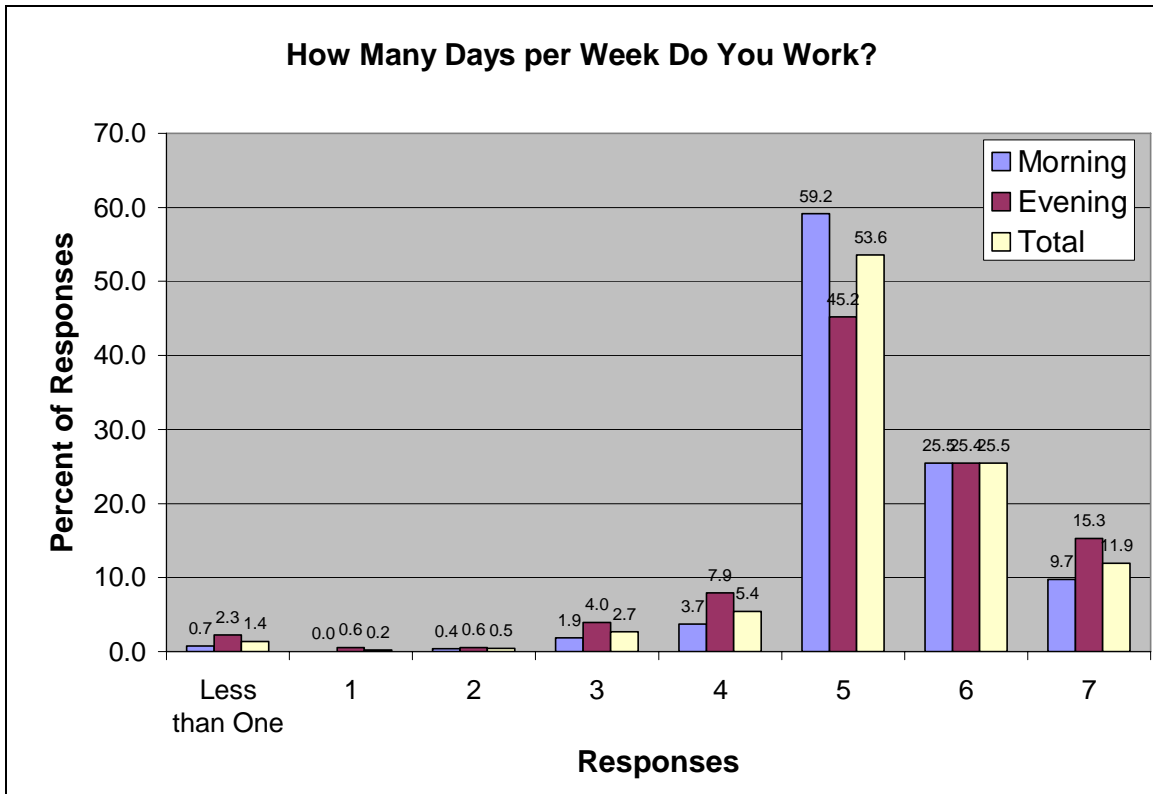


Figure 19: Response Percentage of Question Fourteen

Five people circled two answers for question fourteen.

**Question Fifteen: “What is your total annual household income?”**

Table 22: Responses to Question Fifteen shows the total responses for question fifteen.

**Table 22: Responses to Question Fifteen**

<b>What is Your Total Annual Household Income?</b>			
<b>Responses</b>	<b>Morning</b>	<b>Evening</b>	<b>Total</b>
Less than \$20,000	97	75	172
\$20,000 to \$34,999	75	43	118
\$35,000 to \$44,999	25	20	45
\$45,000 to \$59,999	14	10	24
\$60,000 to \$74,999	9	2	11
\$75,000 to \$99,999	8	1	9
\$100,000 to \$199,999	4	2	6
\$200,000 or More	2	0	2
<b>Total Responses</b>	<b>234</b>	<b>153</b>	<b>387</b>
<b>Total Surveys</b>	<b>234</b>	<b>152</b>	<b>386</b>



Figure 20: Response Percentage of Question Fifteen shows the percentage of responses for question fifteen.

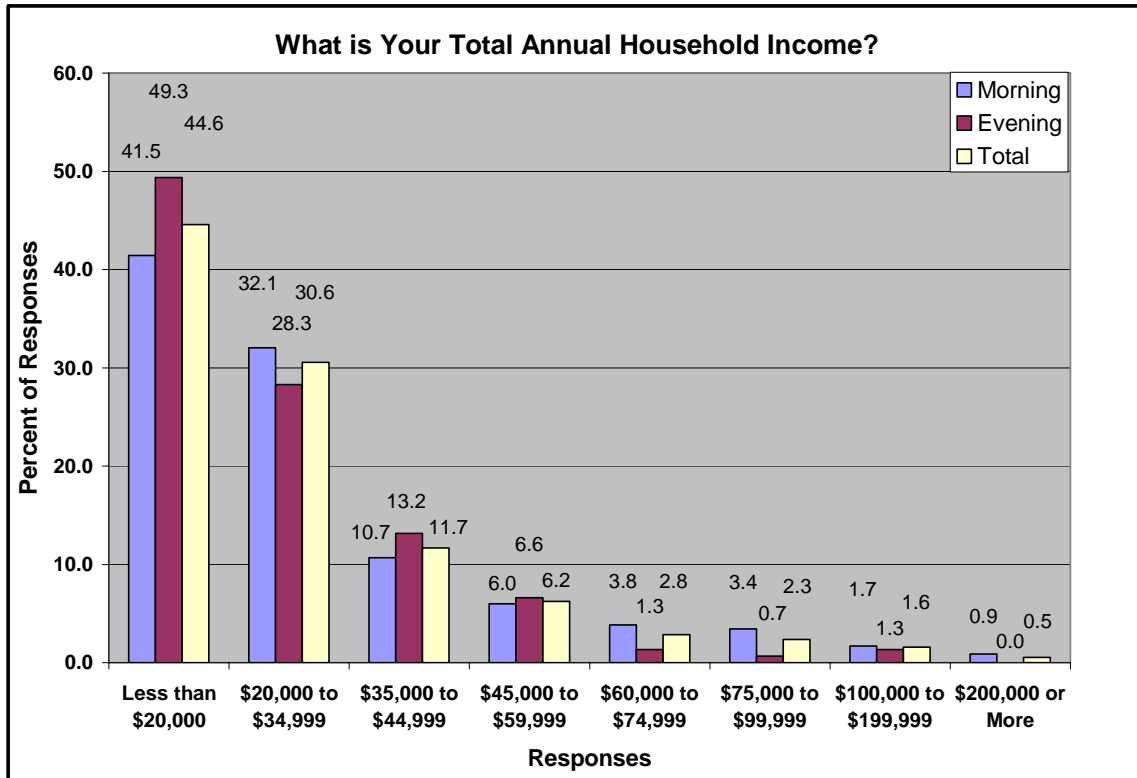


Figure 20: Response Percentage of Question Fifteen

One person circled two answers for question fifteen.

## Associations

Of the fifteen questions, we focused on four. We felt four questions would help most when evaluating the social implications of Ride On’s Access to Jobs program.

1. *Survey Question 1:* What is the main purpose of your trip today?

*Answers:* Work; Shopping; Elementary, Middle, or High School; College or Vocational School; Social Services; Doctor or Medical Visit; Social or Recreational Visit; Personal Business; Other.

2. *Survey Question 5:* Did this Ride On late evening or early morning bus trip help you...

*Answers:* Get this job; get another job; keep an old job; work more hours; work a better schedule of hours.

3. *Survey Question 6:* If you were not taking this Ride On late evening or early morning bus trip to get to work, how would you get to this job?

*Answers:* Wouldn't have this job; Take a taxi; Get a ride with someone; Ride in a Carpool/Vanpool; Walk or run; Ride a bicycle; Ride a different bus route; Drive alone; Other.

4. *Survey Question 15:* What is your total annual household income?

*Answers:* Less than \$20,000; \$20,000 to \$34,999; \$35,000 to \$44,999; \$45,000 to \$59,999; \$60,000 to \$74,999; \$75,000 to \$99,999; \$100,000 to \$199,999; \$200,000 or more.

Utilizing Microsoft Access, we were able to link the different data sets and thus find how many people answered the same way for a set of questions. Table 23: Question One, Five, and Fifteen shows the number of people who answered “work” for question one, anything for question five: “Did this Ride On late evening or early morning bus trip help you...” and also answered that their income was either under \$20,000 or between \$20,000 and \$35,000 for question 15.

**Table 23: Question One, Five, and Fifteen**

	<b>Of Those Who Work:</b>					
	<b>Get this job</b>		<b>Get another job</b>		<b>Keep an old job</b>	
	<b>under 20k</b>	<b>20k - 35k</b>	<b>under 20k</b>	<b>20k - 35k</b>	<b>under 20k</b>	<b>20k - 35k</b>
<b>Percent of Responses</b>	20.3%	12.2%	1.8%	3.2%	14.4%	9.9%
<b>Number of Responses</b>	45	27	4	7	32	22

	<b>Of Those Who Work:</b>			
	<b>Work more hours</b>		<b>Work better hours</b>	
	<b>under 20k</b>	<b>20k - 35k</b>	<b>under 20k</b>	<b>20k - 35k</b>
<b>Percent of Responses</b>	8.1%	4.5%	13.1%	12.6%
<b>Number of Responses</b>	18	10	29	28

Two hundred twenty-two people answered all three questions in one of these ten ways, which is 43.7 percent of the 508 people who filled out the survey.

Table 24: Question One, Six, and Fifteen looks at those who answered work for question one, would not get this job for question six and what they marked for question fifteen.

**Table 24: Question One, Six, and Fifteen**

<b>Those who answered work for question one</b>					
<b>And wouldn't have this job for question six</b>					
	<b><i>Under 20k</i></b>	<b><i>20k - 35k</i></b>	<b><i>35k - 45k</i></b>	<b><i>45k - 60k</i></b>	<b><i>60k - 75k</i></b>
<b>Percentage of Responses</b>	39.5%	25.6%	13.2%	3.9%	0.8%
<b>Number of responses</b>	51	33	17	5	1

<b>Those who answered work for question one</b>				
<b>And wouldn't have this job for question six</b>				
	<b><i>75k - 100k</i></b>	<b><i>100k - 200k</i></b>	<b><i>200k or More</i></b>	<b><i>Omitted</i></b>
<b>Percentage of Responses</b>	0.0%	0.8%	0.0%	16.3%
<b>Number of Responses</b>	0	1	0	21

One hundred twenty-nine people fell in these categories, which is 25.4 percent of the total number of people who filled out the survey.

We also look at hours worked per week, question thirteen, and household income: question fifteen. These results are viewable in Table 25: Questions Thirteen and Fifteen.

**Table 25: Questions Thirteen and Fifteen**

<b>Questions Thirteen and Fifteen</b>						
<b>Weekly Hours</b>	<b>Less than 20</b>		<b>20 to 30</b>		<b>31 to 40</b>	
<b>Household Income</b>	<b>Under 20k</b>	<b>20k-35k</b>	<b>Under 20k</b>	<b>20k-35k</b>	<b>Under 20k</b>	<b>20k-35k</b>
<b>Percent of Responses</b>	3.1%	2.1%	10.8%	2.8%	27.6%	18.2%
<b>Number of Responses</b>	9	6	31	8	79	52

<b>Weekly Hours</b>	<b>41 to 28</b>		<b>More than 48</b>	
<b>Household Income</b>	<b>Under 20k</b>	<b>20k-35k</b>	<b>Under 20k</b>	<b>20k-35k</b>
<b>Percent of Responses</b>	9.4%	8.0%	8.4%	9.4%
<b>Number of Responses</b>	27	23	24	27

<b>Total Responses</b>	286
<b>Percent of total collected surveys</b>	56.3

It also helped us to look at the number of jobs a person held, question twelve, and household income: question fifteen. These results are viewable in Table 26: Questions Twelve and Fifteen.

**Table 26: Questions Twelve and Fifteen**

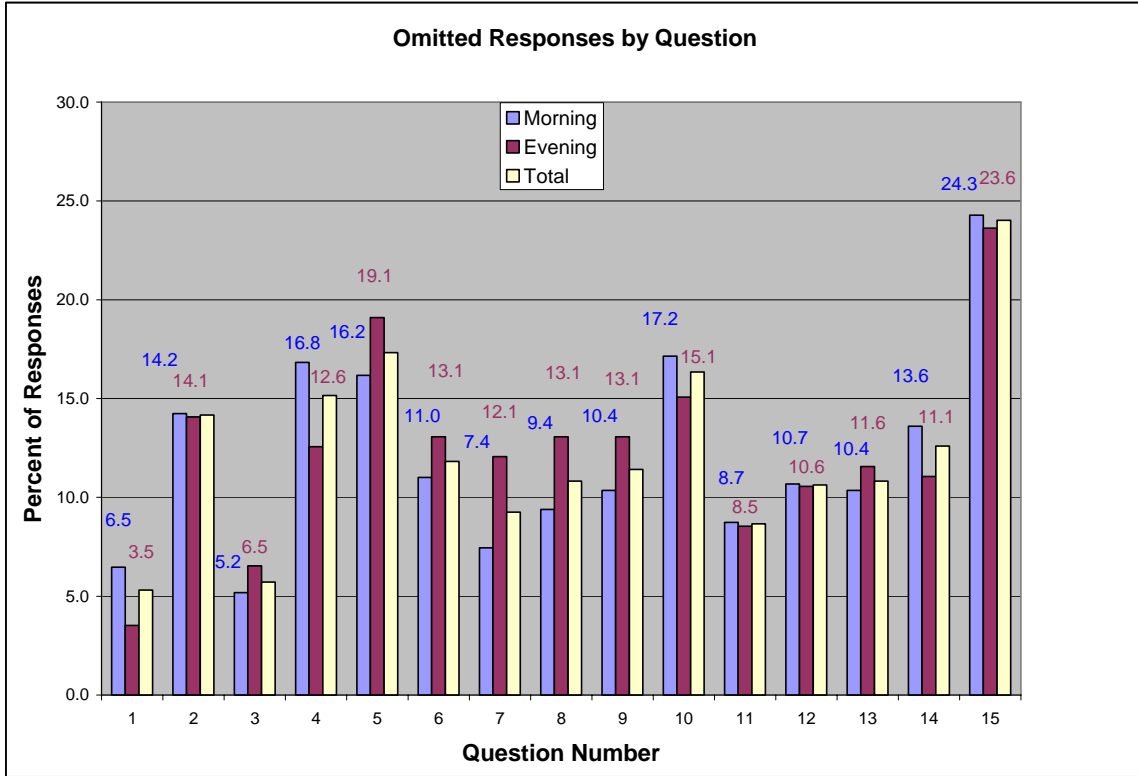
<b>Questions Twelve and Fifteen</b>						
<b>Number of Jobs</b>	<b>0</b>		<b>1</b>		<b>2</b>	
<b>Household Income</b>	<b>Under 20k</b>	<b>20k-35k</b>	<b>Under 20k</b>	<b>20k-35k</b>	<b>Under 20k</b>	<b>20k-35k</b>
<b>Percent of Responses</b>	1.4%	0.0%	45.0%	31.1%	12.5%	9.3%
<b>Number of Responses</b>	4	0	126	87	35	26

<b>Number of Jobs</b>	<b>3</b>		<b>More than 3</b>	
<b>Household Income</b>	<b>Under 20k</b>	<b>20k-35k</b>	<b>Under 20k</b>	<b>20k-35k</b>
<b>Percent of Responses</b>	0.0%	0.0%	0.4%	0.4%
<b>Number of Responses</b>	0	0	1	1

<b>Total Responses</b>	<b>280</b>
<b>Percent of Total Responses</b>	<b>55.1%</b>

### **Omitted Questions**

We collected 508 surveys, with 309 being collected in the morning and the remaining 199 in the evening. In Figure 21: Omitted Responses by Question we have the percentage of omitted response sorted by question. These percentages were taken from the total number of surveys collected in the morning, evening and overall.



**Figure 21: Omitted Responses by Question**

Route 46 travels along the Rockville pike, which the west side of the Red line also follows. We rode this bus route on two different Friday nights, and one Friday and one Monday morning. There were forty-seven riders in the morning and twenty-three at night. With only eight surveys being collected in the evening, we have a response rate of 34.8 percent. However because we rode on Friday nights, Metrorail is open until 3am, and thus a person could just as easily ride on the Metrorail versus route 46. In addition, after speaking with the bus driver, he stated that this route typically gets homeless and drunk people, which was evident when one night, one patron stayed on the bus in both directions. One of the Friday nights, it was also raining, and this might also have made people not want to stand outside and wait for a bus and found some other way home instead.

In Appendix D: Graphical Results, all of our data can be seen in graphical form for each of the fifteen survey questions broken down by route. Morning and evening responses are

displayed on the same graph for each question, as well as the combined total. These graphs are in percentages of responses.



## **Analysis**

We will be analyzing the data collected from our survey focusing on the four questions we feel most address our project goals. We will be looking at associations between different questions to be able to draw stronger conclusions and recommendations. As there was no significant difference in ridership between weekends and weekdays, the data was combined into nights and mornings.

### **Question One: “What is the main purpose of your trip today?”**

As seen in Figure 6: Response Percentage of Question One approximately seventy-six percent of surveys collected in the evenings and approximately ninety percent of those collected in the mornings ‘work’ for question one which leads us to believe that Ride On is achieving its goal of helping citizens get to and from work. Furthermore, when the funding was allocated in 1998 it was used to extend the routes’ span of service into the morning and night, and it was meant to help second and third shift workers work better hours, and not be stranded. Thus with 411 out of 481 people indicating work as their main purpose for their trip, we can conclude that Ride On is achieving its goals of getting people into the transportation network, and to their jobs, and other opportunities. By looking exclusively at question one, we know that Ride On is instrumental in getting people to work, because people are using the bus during the early morning and late evening hours for this purpose.

**Question Five: “Did this Ride On Late Evening or Early Morning Bus Trip Help You...”**

Having forty-six riders in the evenings, and eighty-four people in the morning respond that they were able to get their current job because of the bus service, we can deduce that extending the span of service was a success. In addition to more jobs, people also answered they were able to work more and better hours.

Unfortunately, we do not know how long the people using the bus were at their current job, and thus cannot determine if the early morning or late evening hours are the only reason they were able to keep their jobs.

**Question Six: “If You Were Not Taking this Ride On Late Evening or Early Morning Bus Trip to Get to Work, How Would You Get to this Job?”**

Of the total evening responses to this question, approximately thirty-five percent answered that they would not have their job without the addition of late night trips. With over thirty percent unable to hold their current job, it is clear that Ride On is important to many people.

Of those that would still be able to get to work, 20.5 percent had the option of riding a different bus route, and seventeen percent in the morning would take a taxi. However, a taxi can get extremely expensive. As one person whom we surveyed shared with us that if he missed the bus (which was the last trip of the night), he would have to pay eighteen dollars for a taxi ride home. If the service were not there at all, that would amount to ninety dollars per week.

One third of responses in both the evening and the morning were that the rider would not have their job. Without their job, they might not have been able to afford to live where they do, and therefore have to spend more money on housing so that they were somewhere where public transportation, such as the Ride On or Metrobus, was available.

Therefore, we can conclude that the late evening and early morning service is necessary, if for the sole purpose of economic betterment. Paying \$1.25, the one-way bus trip fare, versus \$18 for a taxi to get home saves a family a substantial amount of money. The household then has more money to spend on other necessities such as food, clothing, and shelter.

### **Question Fifteen: “What is Your Total Annual Household Income?”**

While living on less than \$20,000 a year is difficult anywhere, it is especially difficult in an affluent suburb of a major metropolitan area, such as Montgomery County, where the minimum annual self-sufficiency wages for a household consisting of a single adult is approximately thirty thousand dollars<sup>43</sup>.

However, we do not know how many people live in each person’s household. If they were making less than \$20,000 and had two people in the family working, with two dependents, then they would be having a hard time getting by, as the self-sufficiency for this family would be approximately seventy thousand dollars. Thus with 290 riders (Table 22: Responses to Question Fifteen) with a household income under \$35,000 annually, and not knowing how many people there are in each family, working or dependant, it is shown that more than seventy-five people are dependant upon the extended span of service of Ride On.

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<sup>43</sup> Pearce

## **Associations**

When looking at Table 23: Question One, Five, and Fifteen, of those who answered work, what the bus helped them to do (answer to question five), and whether their income fell into the '\$20,000 to \$35,000' or 'under \$20,000' income bracket, almost thirty percent were able to get their job because of the bus service. Slightly less than twenty percent were able to work more hours, and approximately twenty-five percent were able to work better hours.

Table 24: Question One, Six, and Fifteen links those who answered that they were using the bus for work, answered would not have this job for question six, and what their respective incomes are. Over sixty-five percent of responses were with an income of under \$35,000.

## **Analysis of Hours Worked vs. Household Income**

As seen in Table 25: Questions Thirteen and Fifteen the 27.6% of people whose household income was under \$20,000, were working forty hours a week, were not making enough money annually to be considered self-sufficient, according to the Self Sufficiency Standards for the Washington, D.C. Metropolitan Area<sup>44</sup>. The 18.2% making under \$35,000 were only considered self sufficient if they were the only one in their household. If they had a spouse or child, they would not be making enough money to be considered self-sufficient in Montgomery County.

## **Analysis of number of Jobs vs. Income**

As seen in Table 26: Questions Twelve and Fifteen about thirteen percent of respondents hold two jobs, and still make an annual household income of less than \$20,000. This is under the self-sufficiency standards for a single adult. An additional nine percent work two jobs, and earn

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<sup>44</sup> Pearce

between \$20,000 and \$35,000. This classifies as meeting self-sufficient standards for a household with one adult, but not for one with an adult and a child, or two adults.

These associations show that the late night and early morning time expansions are crucial in helping people enter into the transportation network and through the network, connect to their jobs. If they are not making enough money to be considered self sufficient, they certainly are not going to be able to afford a car. The alternative is utilizing the public transportation network, especially the Ride On system, which is clearly being used. One dollar twenty-five cents for a bus trip plus unlimited transfers for up to two hours is much more economical for someone who is not earning what they need to be considered self-sufficient.

## **Response Rates**

With an overall response rate of 49.4%, we received as many completed surveys as we expected based on our test group and past Ride On surveys. However, with many of the people on the bus speaking Spanish, or a language other than English as their primary language, we were unable to communicate effectively with everyone. Both having our survey printed in Spanish and English, and showing people who said “Si” when asked if they spoke Spanish that the survey was also printed in Spanish, helped to increase our chances of soliciting a response. However, we did not have the survey available in every language we encountered so we were unable to communicate with everyone.

Our initial problem was a lack of hard surfaces. We were unable to provide clipboards to participants, and initially started out with the surveys printed on a sheet of standard letter-sized paper. We upgraded later in the week to thicker paper.

There was also a problem with literacy, which made our response rate decline. There were a number of riders do not read very well, or at all, and because of this, it took them a long

time to fill out the survey compared to other respondents. Many times this led to not having adequate time to complete the entire survey before getting off the bus. However, our most important questions were in the front of our survey and typically were answered.

Other people declined to take it on principle. Many people stated that they never took surveys and were not going to take this one either. We thanked them for their time and went on to the next person. In the mornings, a fair number of people would not take it because they were too tired, and it was too early.

We also had a problem with the lighting on the bus. The bus driver typically had the light in the very front of the bus off, so he would be able to see well. When we asked some people sitting in the front of the bus, they said they could not see the survey, and more times than not, there was no other place to sit. Others needed their glasses to fill out the survey, and did not have their glasses with them. Still others wished to take it home with them and send it back to us. This was not feasible for our survey due to time constraints.

There was also a noticeable difference in who actually surveyed the respective bus riders. As Tim was asked once if he was a police officer, it was quite apparent that the riders were a bit more suspicious of Tim and Kenny as opposed to Corinne. In addition to this, it was noticed that people in the front of the bus were more receptive to being surveyed as opposed to those back of the bus.

With all of these factors, it can be concluded that if one of us had spoken Spanish, we would have collected more surveys. In addition, if we had at least one more person on our team, we could have read the surveys to people who were unable to read, had problems with the light, or forgot their glasses if they were willing to participate. Also by having a fourth person in the

group we could have rode more buses. Despite all these challenges, we still had a respectable response rate of 49.4%.

We were unable to count how many people were speaking Spanish or another language on the respective bus trips. However, according to the customer satisfaction survey conducted by Ride On in December of 2004, twenty-four percent of all riders were Hispanic. A quarter of the surveys we received were in Spanish. However, this number seems low based on whom we noticed on the buses. We are sure that if one of us had spoken Spanish that these people would have been less suspicious of us, and thus been more inclined to fill out the survey. Some were also bilingual and might have filled it out in English as opposed to Spanish. In addition, when we passed out the survey, we did not always have the Spanish side showing. Thus, they might have thought it was only in English and declined to take it.

## **Overall Data**

As seen in Figure 16: Response Percentage of Question Eleven almost seventy-five percent of responders do not have a car available to them. This means that these riders rely heavily on public transportation. Thus, we see how important Ride On is for people who are trying to get into the transportation network.

Looking at Figure 21: Omitted Responses by Question we see that there were a large percentage of omitted responses for every question. However, questions three through six were only to be answered by those whose current bus trip was related to work. Out of 508 collected surveys, question three had twenty-nine omits, question four had seventy-seven, question five had eighty-eight, and question six had sixty. If the data set was perfect, and everyone who was using the bus for work filled out every question, the omitted answers for questions three through six would be the same. However, they are not. There are a few reasons that may explain these

discrepancies lie. As people willingly filled out the survey, they may have chosen to leave certain questions blank because they might have thought it was too intrusive, or for personal reasons. They also may have assumed which questions were the most important to us, and just skipped certain questions because it was thought to be irrelevant. Some may also have started to fill out the survey and then realized that they had to get off the bus quicker than they thought. This would account for why questions four, five, and six had more omits than question three. However, they are also more intrusive questions, which lead to people being less willing to answer them.

The latter questions on the survey may also have a greater amount of omits due to being placed later on the survey. People that got off the bus early would not answer them, and the most intrusive question was last. Thus for the most part, the number of omits gradually increased over the survey questions.

Question ten also had many omitted responses. This question asked what other forms of transportation were used during ones trip other than Ride On. There was not a place to circle that they only used Ride On, and thus if they only used Ride On, then they left it blank.

Question fifteen had the greatest percentage of omits at about twenty-four percent. A few reasons that this occurred include that it was the last question on the survey, and is the most intrusive. Many people do not wish to share their income levels, even on an anonymous survey.

## **Comments**

Our survey contained a place for riders to voice any additional comments not covered by a previous question. Some of the riders that refused to fill out surveys volunteered comments, which were written down. Some of the responses were "keep up the good work" and "be on time." Comments on the survey were left in both English and Spanish, and the most numerous



comment was "be on time." Many riders expressed an interest in having higher capacity buses during rush hour, and/or having buses come more frequently. Both of these are solutions to ease crowding. Additionally, many riders requested an express bus connecting the Lakeforest Transit Center and the Shady Grove Metro Station, two of the busiest stops on a route, where a majority of people boarded or disembarked the bus. Another frequent comment was to have the busses' schedules coordinate better so that connections were not as tight with Metrorail, Metrobus, and other Ride On routes.

There were many comments expressing a desire for further expansion of the span of service. Three people wanted twenty-four hour service, but the majority wanted certain routes to run later or earlier. Due to the fact that Metro has expanded its operating hours since these extension went into effect, these buses no longer meet the first or last trains, and should therefore be rescheduled so that they do. This can be seen in the comments that suggest "start[ing] at 4 am everyday" or "earlier service." If a bus route took approximately forty-five minutes to complete, and began at 4:00 am, the bus would meet with the first train of the day at 5:00 am.

Aside from the routes that we specifically rode, passengers expressed only one route that corresponded with any of the original routes targeted in 1998 to have their times extended. This was route 75, which in 1999 serviced the Urbana Park and Ride lot and the Shady Grove Metro Station. The route has since changed to service the Urbana Park and Ride and the Germantown Transit Center (GTC).

It is interesting and important to note the extensive growth that Germantown has experienced in recent years. There are currently eight bus routes that service the GTC. The GTC is the central place where the Germantown routes come to, to then move people into the transportation network. This is accomplished through either route 100, which is an express bus

from the GTC to the Shady Grove Metro Station or by a normal route, which transports passengers south towards the District. There are also 232 TANF cases in Germantown at this time according to the Health and Human Services of Montgomery County<sup>45</sup>. This is seventeen more than Rockville, which has been a developed area much longer.

The route 75 bus, which someone expressed an interest in increasing its span of service, travels north, past Germantown. In general, the farther one lives from the District of Columbia, the cheaper housing becomes. With this in mind, it can be seen why people would live so far from Washington, D.C., yet still commute to the city via Ride On.

The other routes with time extensions requests were routes 10, 48, 49, 54, 57, 58, and 64. These routes service some of the same areas that the eight studied routes did. Interestingly, four of these routes have unique starting and ending points. The other four are not unique and start and end at the same place as other routes currently in the program. Two of the 'unique' routes mentioned both had the same starting and ending points, while no other Ride On route did. These routes begin and end at places already serviced by other buses with extended hours; however, they travel into different areas than these buses. One of the zip codes was 20886, which according to Health and Human services had thirty-one TANF cases alone. Bus routes 57 or 58 service areas within the 20879 zip code where there are twenty-eight TANF cases. With this additional information, we can see why these riders would want to extend the time span on these bus routes.

With Montgomery County ever changing, the TANF areas originally outlined may not hold true today. This is a good indicator to why only one of the original routes other than the ones already with time extensions was mentioned with requests for later or earlier service. In addition, with three of the original routes no longer in service, and eight others with changes to

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<sup>45</sup> Pearce

the routes, they are no longer going to the same places they were in 1998 when they were originally targeted.

All of the routes we rode traveled through TANF neighborhoods. Our data of where TANF cases were is by zip code, and thus we cannot pinpoint exactly where the TANF cases are with respect to the bus routes. However, with these routes originally chosen as the most likely to succeed, based on our results and analysis of income and all the other factors we see that Ride On was correct in this assumption. All comments can be found in Appendix E: Comments.

## **Verification**

There were 508 total surveys returned, 309 of which were in the morning, and 199 in the evening. When looking at the data in these respective groups from a statistical point, we have enough data for this to be considered a valid representation of the late evening and early morning ridership population as a whole.

We manually imputed all of our data, and thus human error is a potential source of error. However, we realized that it would be better to have multiple sets of eyes look over the imputed data and check for mistakes. One of us imputed the data while another looked over the data once it was inputted to make sure there were no discrepancies.

## **Trips We Rode**

With the Ride On master book of routes, we were able to determine the percent of times we rode each bus route in the morning before 6 am, and the ones in the evening based on the original times given to us. Approximately forty percent of the overall routes in the morning were ridden and surveyed. With there being forty-one possible trips before 6 am, we feel that having ridden sixteen of them was a good representation of the whole. A lot of the trips lasted so long,

that riding them on the way back to our original point would have been during rush hour, and thus out of the times we were supposed to be surveying. Also with fifteen weekday mornings, the fact that we surveyed sixteen shows that we surveyed one route every morning, and two on one morning.

In the evenings, we ended up riding over forty-five percent of the routes. It was slightly harder to determine the number of potential routes to ride, as the info sheet on the extended hour routes had some as early as 8:00pm, where others were not until 11:00 pm. It was determined that there were a total of forty-five routes we could have ridden, and we rode twenty-one of these.

The weekends were harder to schedule, as we only had six mornings and six evenings of possible surveying. Since Saturdays and Sundays follow different schedules, we really only had three Sunday mornings and evenings and three Saturday mornings and evenings. This in turn meant that one route would not be covered on the weekends. This route ended up being the 46. In addition, because the routes are not always the same bus going there and back, it was much harder to cover all the routes. However, Saturday morning we covered 54.5 percent of the routes outline for the 16, 20 and 59. Saturday night we rode routes 5, 16, and 59, where we covered 18.2 percent. Sunday morning, we covered about thirty-eight percent of the routes.

With the low percentages of coverage on weekends, we would not have enough data for it to be considered statistically valid. With additional time to carry out the surveys, we would then have sufficient data, but it can be assumed that if Ride On extended the time span on these routes, that they are being used for work, and to get into the transportation network. When looking at just weekdays however, we wish we could have collected more data.

When looking at all of the factors, such as income, whether ride on helped riders to get their job, if riders have access to a car or not, we know that Ride On is helping people get into the transportation network for work during the late evening and early morning hours. When taking in to account the self sufficiency standards, and seventy-five percent having an income of less than \$35,000, we know that their livelihood is dependant upon public transportation as only a single adult can be considered self sufficient when making almost \$30,000 in Montgomery County. Without Ride On's early morning and late evening service, people would have to spend more money on transportation and may no longer be able to afford other necessities.

## Recommendations

Based on the results and analysis of survey responses and comments written on the surveys we are making the following recommendations to Ride On:

- Re-examine where current TANF areas are in the county.
- Evaluate the feasibility of increasing the span of service on the seven routes we rode as well as on other routes that go through the updated TANF area: Specifically the thirty routes originally looked at for this service, and the additional eight routes mentioned by riders.
- Make the first trips of the current eight routes earlier allowing these buses to meet the first Metrorail trains of the day.
- Increase the size of the buses, especially during rush hour, and investigate the possibility of using articulating buses.
- Increase the frequency of buses during the morning rush hour on the seven routes we rode, especially routes 55 and 59.
- Add an express route from the Lakeforest Transit Center to Shady Grove Metro Station.

Additionally, we recommend that the wording of some questions from past Ride On surveys be altered. For example, question five from our survey Appendix C: Our Survey was taken from a previous Ride On Access to Jobs program survey. The response “get another job” can be interpreted different ways: that this service helped them get a second or third job, or it can be interpreted as this service helped them get a completely new job.

If certain questions are only to be answered by those who answered a previous question, the dependent questions should be visually designated as such. For example, indenting this section, or putting these questions in a box would accomplish this.

Question ten, which asked riders what other forms of transportation were used in their typical trips, the response ‘only Ride On’ should be added as a response. This would help clarify responses instead of assuming that everyone who omitted the question uses Ride On exclusively during their commutes.

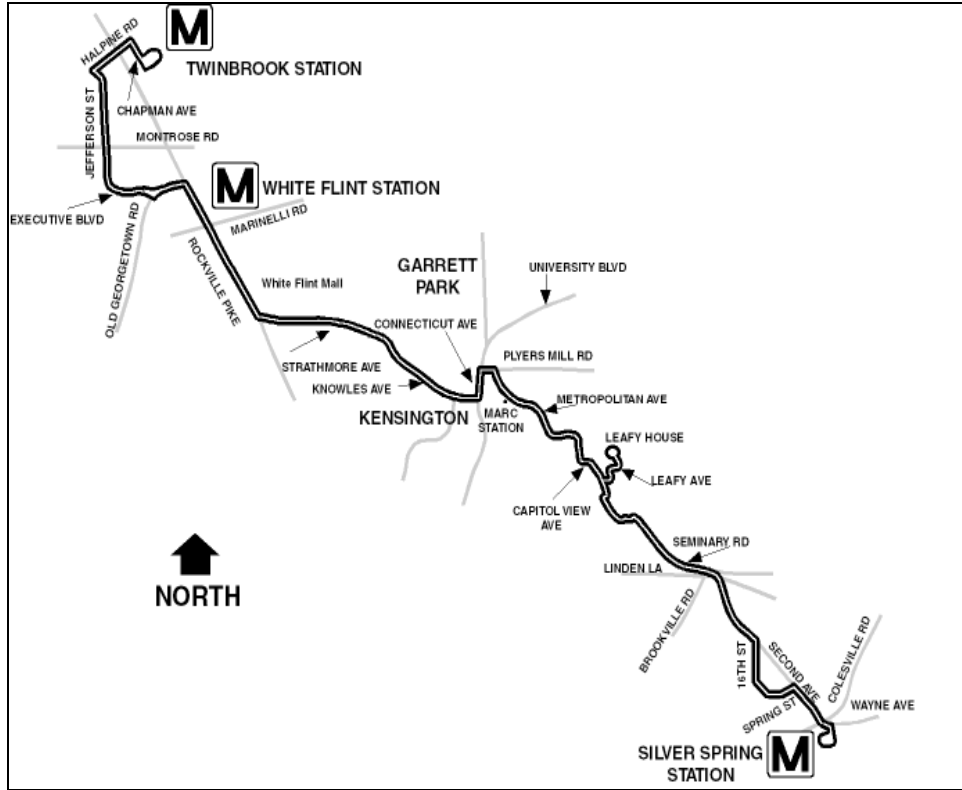
We recommend the addition of two responses to clarify the responses to question fifteen. One response would ask riders how many people are in their household, and the other would ask how many of those people are employed. These two questions would allow us to determine how much income the household would need in order to be considered self-sufficient according to Health and Human Services.

For future collaborations between Ride On and WPI that incorporate surveying, the university and liaisons should attempt to have at least one member of the group be fluent in Spanish. This would allow the team to communicate with a greater percentage of riders. Moreover, if the IQP team was composed of four members instead of three, they could split up into pairs and covered twice as many bus trips, thus increasing the sampling size of the study making the results even more representative of the population. These suggestions would enable the IQP team to communicate with a greater percentage of the riders and perform a more complete survey.

We believe that by following the preceding recommendations, Ride On will be able to serve Montgomery County’s population as a whole, better.

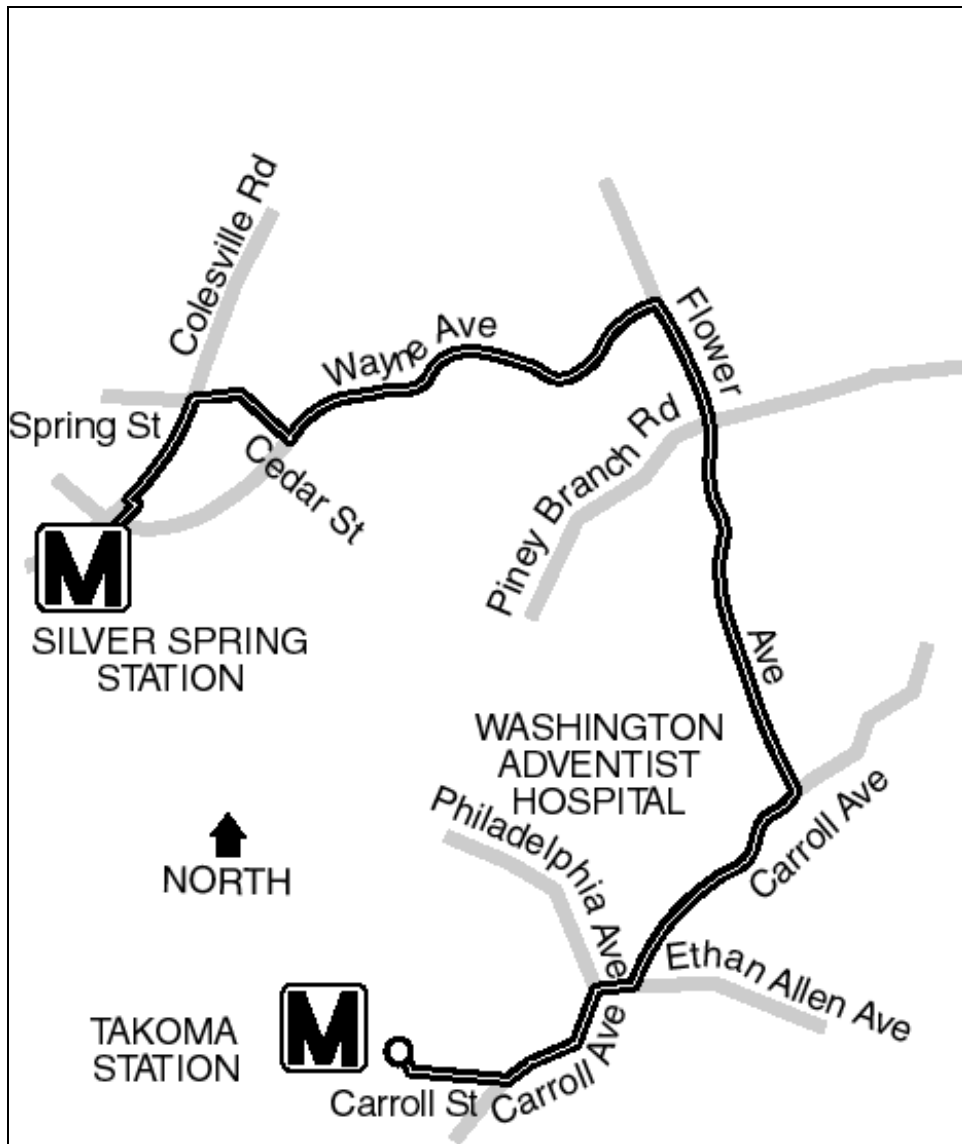
# Appendix A: Ride On Routes

## Route 5

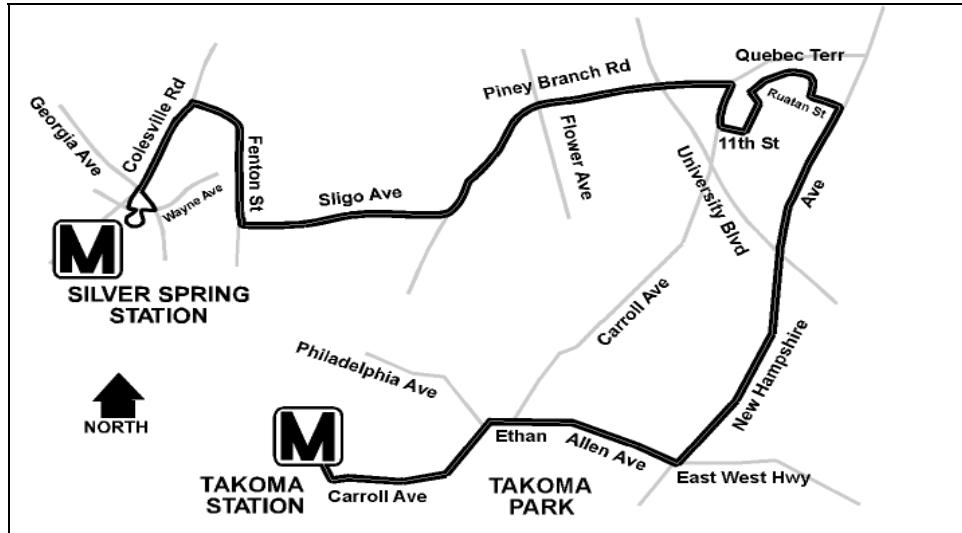




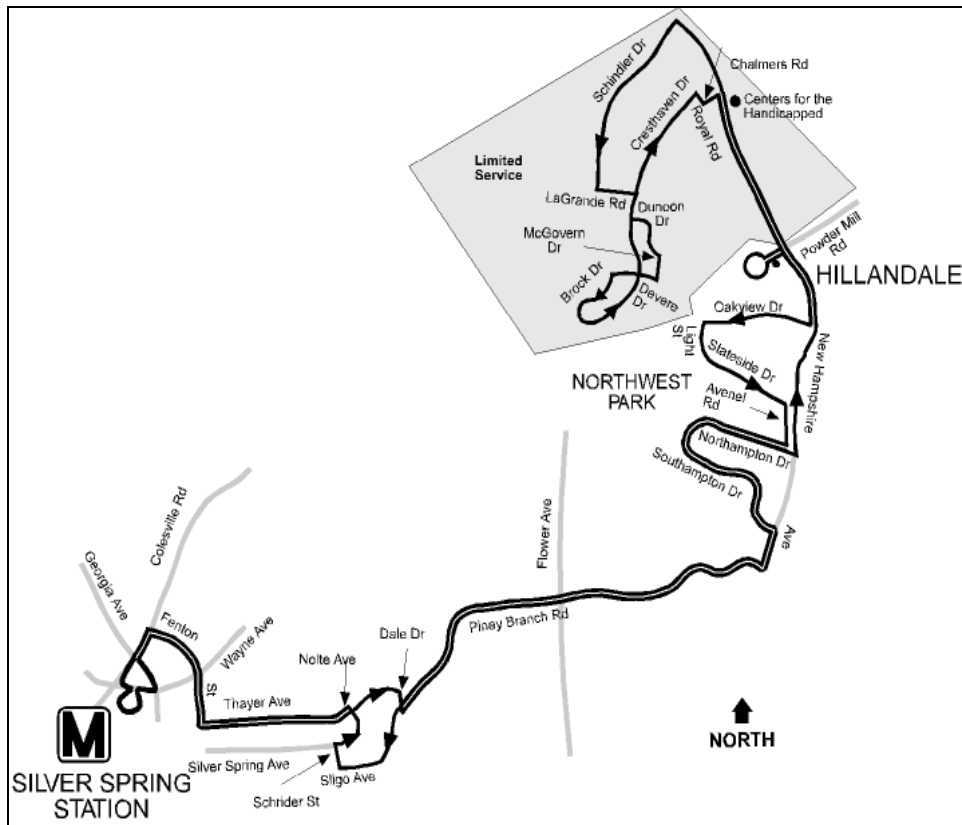
# Route 12



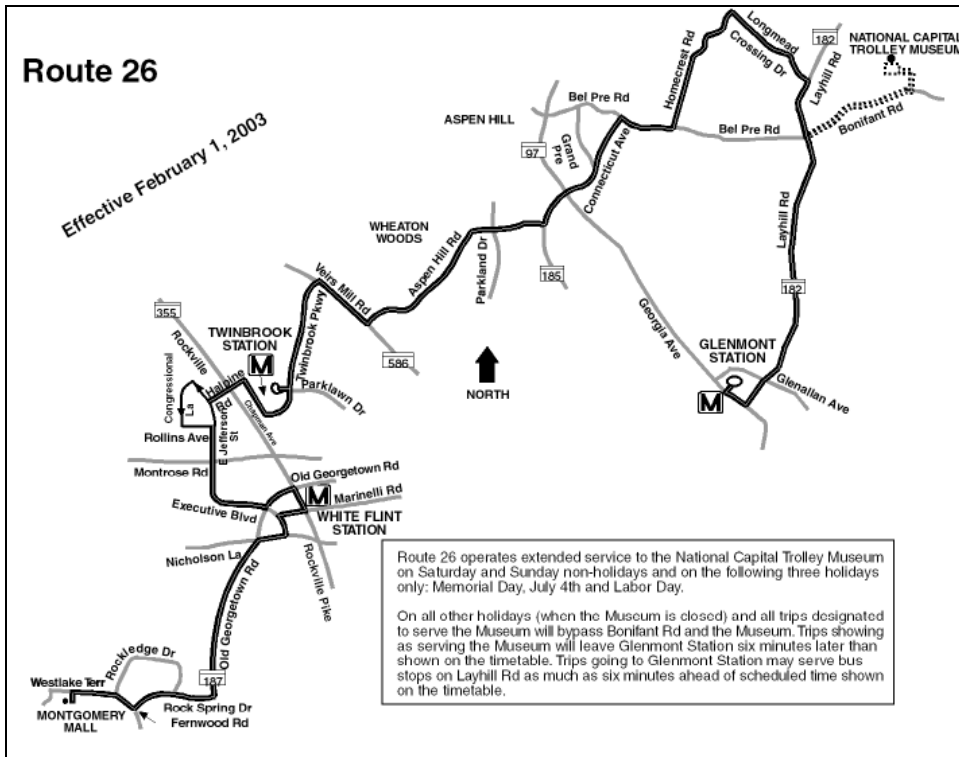
# Route 16



# Route 20

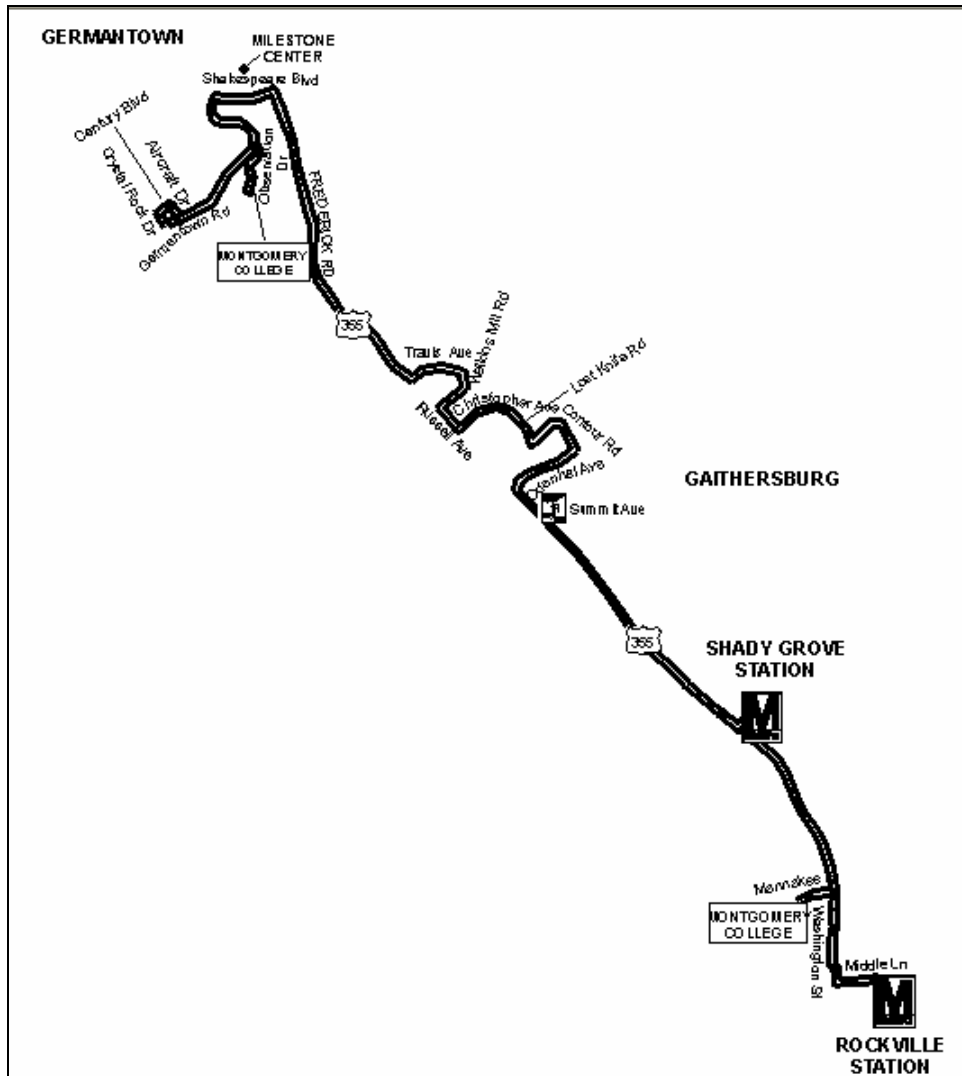


# Route 26

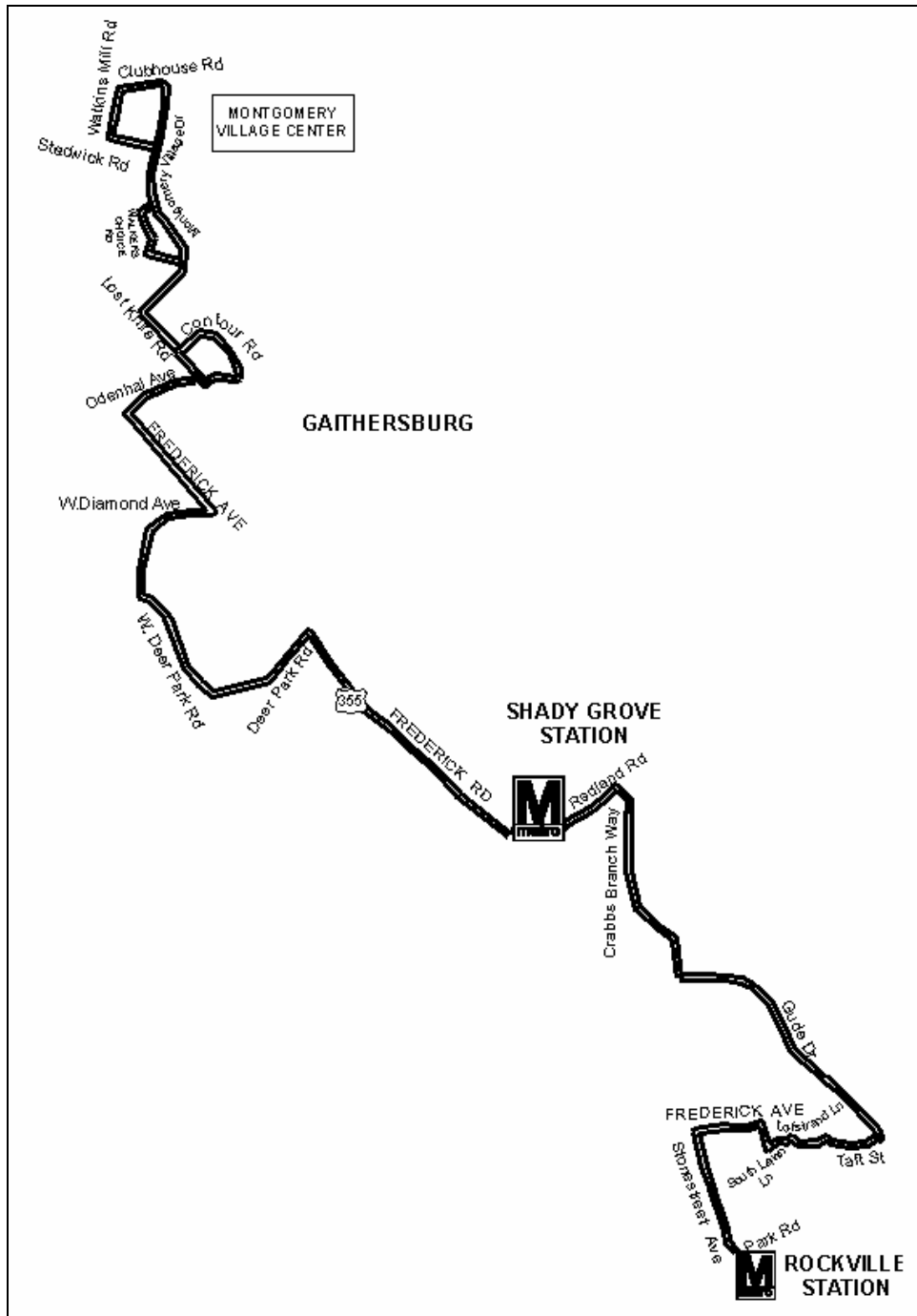




# Route 55



# Route 59



# Appendix B: Past Ride On Surveys

## Customer Satisfaction Survey

**El cuestionario es impreso en español del otro lado.**

**Ride On would like to know about you and how you use the bus!**  
Please circle your answers.

**Please tell us about how you use Ride On**

- How many days per week do you usually use Ride On?  
7 6 5 4 3 2 1 0—less than one day a week
- When did you begin using Ride On?  
2004 2003 2002 2001 2000 19\_\_
- What is the main purpose of your bus trip today? (Choose one)  
(1) work (2) shopping (3) elementary, middle, or high school  
(4) college or vocational school (5) social services  
(6) doctor or medical visit (7) social or recreational visit  
(8) personal business (9) Other \_\_\_\_\_
- How many one-way trips per day do you usually make on the Ride On bus? (A one-way trip is from your start point to your destination, even if it takes more than one bus. The return trip is a second one-way trip.) 1 2 3 4 or more
- How did you get to the stop where you got on this bus? (Circle all that apply)  
(1) Drove (Pek and Ride) (2) Walked  
(3) Transferred from a Metro bus (4) Transferred from a Ride On bus  
(5) Transferred from a MARC train (6) Transferred from a Metro train  
(7) Commuter bus (8) Only walked—no other means used  
(9) Other \_\_\_\_\_

**How do you rate Ride On service?**

	Very poor	Excellent
6. Total travel time	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
7. Buses running reliably on-time	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
8. Courtesy of Ride On drivers	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
9. Comfort of the ride	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
10. Comfort while waiting for the bus	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
11. Safe driving habits of Ride On drivers	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
12. Frequency of service in rush hours	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
13. Cleanliness of the inside of the bus	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
14. Cleanliness of the outside of the bus	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
15. Availability of transit information	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10
16. Convenience of transferring between buses	1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10

0 = 1 usually do not transfer

In only the past 30 days, how many times, if at all, ...

- Overall quality of Ride On service 1 2 3 4 5 6 7 8 9 10
- have you missed a connection or been late for work or event because a Ride On bus was not on time? 0 1 2 3 4 5+
- has a Ride On bus failed to stop for you at a bus stop? 0 1 2 3 4 5+
- has a scheduled Ride On bus not arrived at all at your stop? 0 1 2 3 4 5+
- has a Ride On driver been discourteous to you? 0 1 2 3 4 5+
- have you observed a Ride On driver being especially kind or nice to you or another rider? 0 1 2 3 4 5+

23. Which radio station do you listen to most often?  
W \_\_\_\_\_ AM or FM?

Nick-name or call letters? \_\_\_\_\_

- How many times in the past 12 months have you watched Montgomery Cable Channel 6 for information about Ride On? 0 (none) 1 Time 2 3 4 5 6 7 8 9 10 or more
- Do you use the Internet on a regular basis? (1) Yes (2) No
- How many times have you visited the Montgomery County website in the past year for information about Ride On? 0 (none) 1 Time 2 3 4 5 6 7 8 9 10 or more

**Please tell us about yourself (all information is confidential)**

- How old are you? \_\_\_\_\_ Years old
- Please mark all of the following that apply to you. Are you:  
(1) Employed for pay outside your home (2) Employed for pay in your home  
(3) Student (4) Homemaker (5) Unemployed (6) Retired
- What is your home zip code? \_\_\_\_\_
- How many licensed drivers live in your household?  
0 1 2 3 or more
- How many cars or other motor vehicles are available for you to use?  
0 1 2 3 or more
- Are you female or male? (1) Female (2) Male
- Which do you consider yourself? (If more than one group applies to you, please circle all that apply)  
(1) African American/Black (2) Asian (3) Hispanic  
(4) White (5) Native American Indian (6) Other \_\_\_\_\_
- What language do you speak at home?  
(1) English (2) Spanish (3) Chinese (4) Vietnamese  
(5) Other language: \_\_\_\_\_
- What is your total annual household income?  
(1) Less than \$20,000 (2) \$20,000 to \$34,999 (3) \$35,000 to \$44,999  
(4) \$45,000 to \$59,999 (5) \$60,000 to \$74,999 (6) \$75,000 to \$99,999  
(7) \$100,000 to \$199,999 (8) \$200,000 or more

Comments: \_\_\_\_\_

Thank you!  
Please return this form to the surveyor on the bus.  
1854



# Past Access to Jobs Survey

**WELCOME!** You are now riding a bus trip that was provided by Federal, State and County funds – to improve "Access to Jobs." To determine whether this program is serving your needs, RIDE ON is asking our riders to answer several questions. Please take a moment to answer the following questions, then return it to the person who gave it to you or drop it into a mailbox. Help us make RIDE ON a better bus service – better for you!!

**B 0489**

- Do you have a car available to you? .....  Yes  No
- Are you GOING TO work?.....  Yes  No **OR** Are you COMING FROM work? .....  Yes  No
- Are you traveling for any reason not related to work? .....  Yes  No
- Will you travel to work on another bus during any part of your journey this evening? .....  Yes  No

**If this trip is related to work in any way, please answer the following:**

- Do you use this bus route often to get to work? .....  Yes  No
- Did this new RIDE ON late evening or early morning bus trip help you . . .  
 Get this job? .....  Yes  No    Get another job? .....  Yes  No    Keep an old job? .....  Yes  No  
 Work more hours? ..  Yes  No    Work a better schedule of hours? .....  Yes  No
- If you were not taking this RIDE ON bus trip to get to work, how would you get to this job?  
 Wouldn't have this job                       Take a taxi                       Get a ride with someone  
 Ride in carpool/vanpool                       Walk or run                       Ride a bicycle  
 Ride a different bus route                       Drive                      Other \_\_\_\_\_
- Do you have Internet access to information about RIDE ON? .....  Yes  No
- How could RIDE ON buses better help you get to work? \_\_\_\_\_

---

**THANK YOU . . . PLEASE RETURN TO SURVEYOR OR PUT THIS IN NEAREST MAILBOX**

Date 4/16/00 Route 15 Trip 1145pm Block A7 Bus 15713

## Appendix C: Our Survey

### English

Ride On would appreciate your help in planning their service.  
**Any information given will be confidential, and no one will ask for your name.**  
**Thank you for your help.**

For all questions please circle all that apply.

1. What is the main purpose of your trip today?
 

work	shopping	elementary, middle, or high school
college or vocational school	social services	doctor or medical visit
social or recreational visit	personal business	Other: _____
2. Are you going to or coming from your answer to number 1?
 

Going To	Coming From
----------	-------------

**If this trip is related to work in any way, please answer question 3 – 6:**

3. Do you use this bus route often to get to or from work?
 

Yes	No
-----	----
4. Please circle all of the following that apply to you. You are:
 

Employed for pay <u>outside your home</u>	Employed for pay in your home	Student
Homemaker	Unemployed	Retired
5. Did this Ride On late evening or early morning bus trip help you...
 

get this job	get another job	keep an old job
work more hours	work a better schedule of hours	
6. If you were not taking this Ride On late evening or early morning bus trip to get to work, how would you get to this job?
 

Wouldn't have this job	Take a taxi	Get a ride with someone
Ride in a carpool/vanpool	Walk or run	Ride a bicycle
Ride a different bus route	Drive alone	Other: _____
7. What time do you typically utilize the bus?
 

Before 6am	6am-10am	10am-2pm	2pm-6pm	6pm-10pm	10pm-2am
------------	----------	----------	---------	----------	----------
8. During your normal week, how many total trips do you take on Ride On?
 

1 to 4	5 to 8	9 to 12	13 to 16	more than 16
--------	--------	---------	----------	--------------
9. How many bus transfers will you make to get to your destination?
 

0	1	2	3	more than 3
---	---	---	---	-------------
10. What forms of transportation will you use during your trip other than Ride On?
 

Metrobus	Metrorail	MARC Train	MTA Bus
Taxi	Carpool/Vanpool	Personal Car	Bicycle
11. Do you have a car available to you?
 

Yes	No
-----	----
12. How many jobs do you currently hold?
 

0	1	2	3	more than 3
---	---	---	---	-------------
13. How many hours a week do you work?
 

Less than 20	20 to 30	31 to 40	41 to 48	More than 48
--------------	----------	----------	----------	--------------
14. How many days per week do you work?
 

7	6	5	4	3	2	1	0 – less than one day per week
---	---	---	---	---	---	---	--------------------------------
15. What is your total annual household income?
 

Less than \$20,000	\$20,000 to \$34,999	\$35,000 to \$44,999	\$45,000 to \$59,999
\$60,000 to \$74,999	\$75,000 to \$99,999	\$100,000 to \$199,999	\$200,000 or more
16. How could Ride On buses better help you get to your destinations?

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Please return this form to the surveyor on the bus

# Spanish

**Ride On apreciaría su ayuda en planear su servicio. Cualquier información dada será confidencial, y nadie pedirá su nombre. Gracias por su ayuda. Para todas las preguntas cierre en un *circulo* la respuesta aplicable.**

1. **¿Cuál es el propósito principal de su viaje hoy?**  
 (1) trabajo (2) compras (3) escuela primaria o secundaria (4) facultad o escuela de oficios  
 (5) asistencia social (6) visita médica (7) visita social o recreativa  
 (8) negocios personales (9) otro \_\_\_\_\_
  2. **¿De acuerdo a su respuesta a la pregunta numero 1, se encuentra usted viajando de ida o de regreso?**  
 De ida Regresando
- Si este viaje esta relacionado de alguna manera a su trabajo, por favor conteste las preguntas del 3 al 6:**
3. **Utiliza usted frecuentemente esta ruta para llegar a su trabajo?**  
 Sí No
  4. **Marque todas las opciones que correspondan. Es usted:**  
 (1) Empleado que trabaja fuera de su casa (2) Empleado que trabaja desde de su casa (3) Estudiante  
 (4) Ama de casa (5) Desempleado (6) Jubilado
  5. **Le ha sido este viaje con Ride On, tarde de noche o temprano de mañana, de ayuda para...**  
 (1) Conseguir este trabajo (2) Conseguir otro trabajo (3) Mantener el trabajo  
 (4) Trabajar más horas (5) Obtener un mejor horario de trabajo
  6. **¿Si usted no obtuviera el servicio de Ride On, tarde de noche o temprano de mañana, para llegar a su trabajo, como se transportaría?**  
 (1) No tendría este trabajo (2) Tomaría un taxi (3) Viajaría con alguien  
 (4) Viajaría en grupo (5) Caminaría o Correría (6) Viajaría en bicicleta  
 (7) Viajaría una ruta diferente (8) Viajaría solo (9) Otro: \_\_\_\_\_
  7. **¿Qué hora normalmente usted toma el autobús?**  
 Antes de las 6 am 6 am-10 am 10 am-2 pm 2 pm-6 pm 6 pm-10 pm 10 pm-2 am
  8. **¿Cuántos viajes hace con Ride On normalmente durante la semana?**  
 1 a 4 5 a 8 9 a 12 13 a 16 más de 16
  9. **¿Cuántas transferencias de autobús hará para llegar a su destino?**  
 0 1 2 3 más de 3
  10. **¿Qué tipo de transportación usted usará durante su viaje?**  
 Autobús Metro Tren Metro Tren MARC Autobús MTA  
 Taxi Carpool/Vanpool Carro Personal Bicicleta
  11. **¿Tiene carro disponible para usted?**  
 Sí No
  12. **¿Cuántos trabajos tiene usted actualmente?**  
 0 1 2 3 3 o más
  13. **¿Cuántas horas trabaja por semana?**  
 Menos de 20 20 a 30 31 a 40 41 a 48 Más de 48
  14. **¿Cuántos días trabaja por semana?**  
 7 6 5 4 3 2 1 0 – menos de un día por semana
  15. **¿Cuál es el total ingreso anual de su unidad familiar?**  
 (1) Menos de \$20,000 (2) de \$20,000 a \$34,999 (3) de \$35,000 a \$44,999 (4) de \$45,000 a \$59,999  
 (5) de \$60,000 a \$74,999 (6) de \$75,000 a \$99,999 (7) de \$100,000 a \$199,999 (8) \$200,000 o más
  16. **¿Cómo podrían los autobuses de Ride On servirle mejor para llegar a su destino?** \_\_\_\_\_

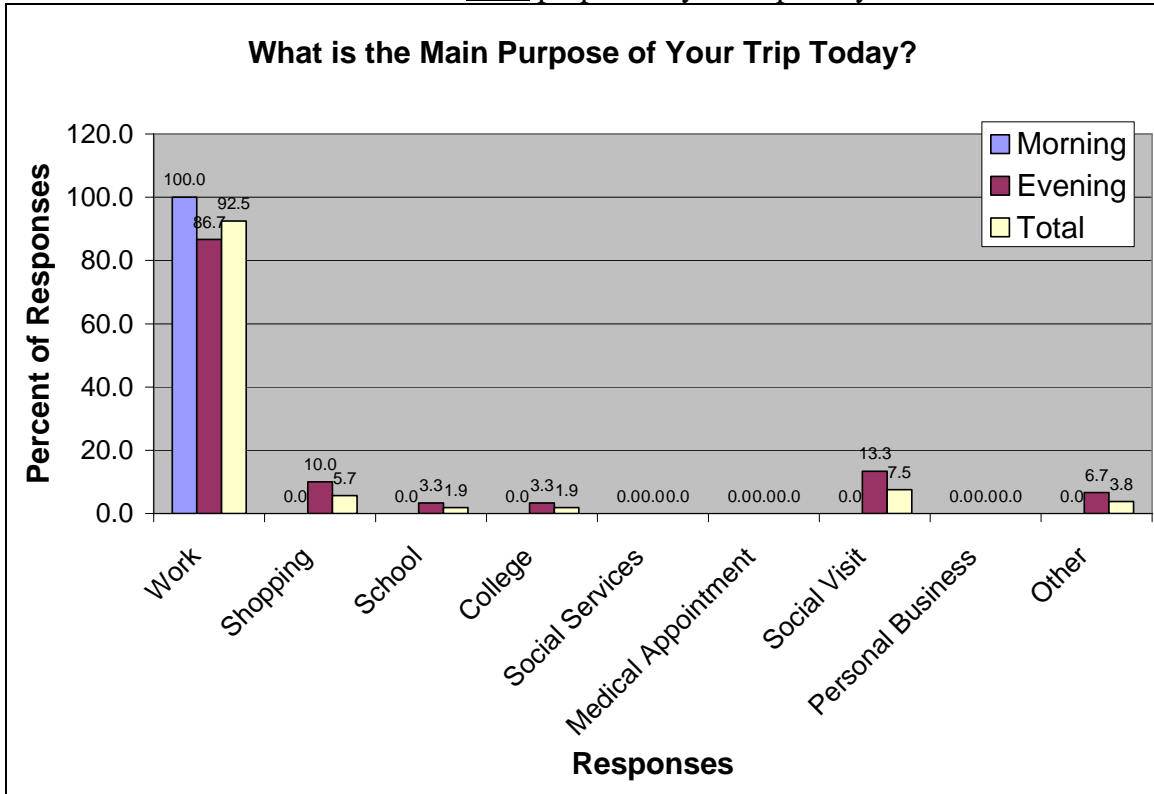
*Por favor, devuelva este formulario a la persona que le entregó la encuesta en este autobús. Gracias!*

## Appendix D: Graphical Results

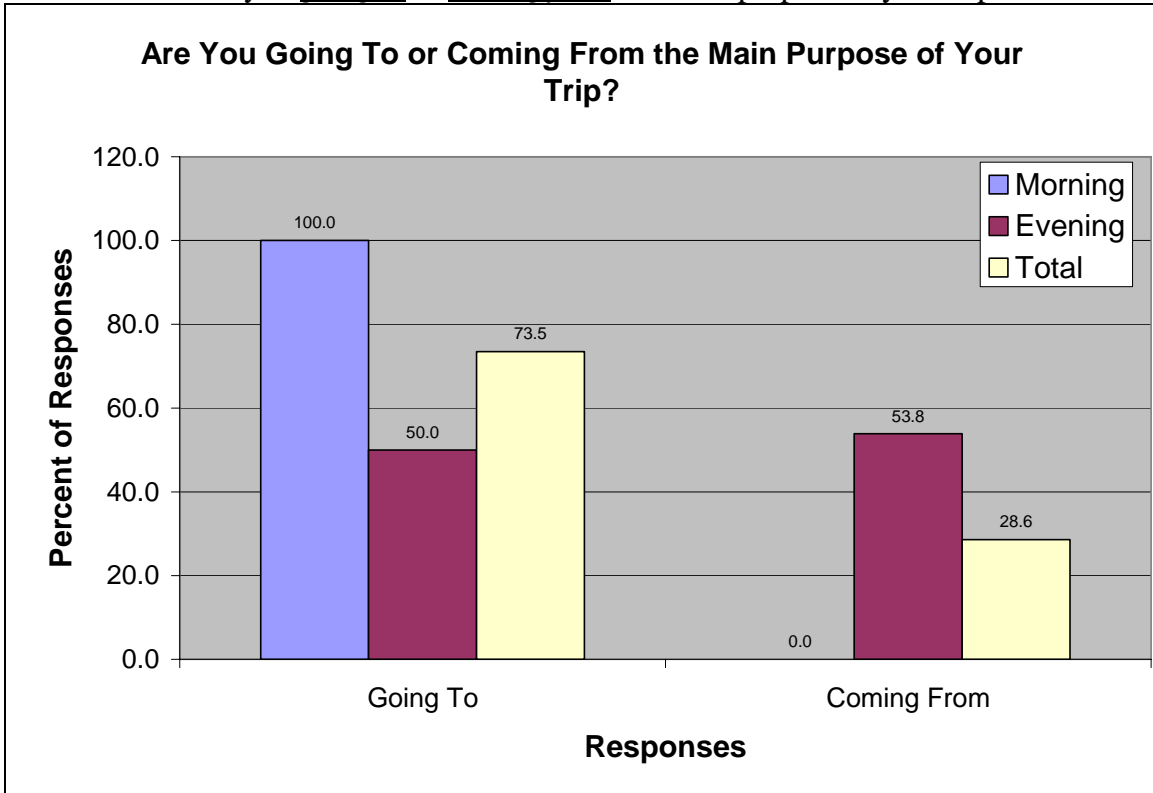
### Route 5

	Morning	Evening	Total
<b>Spanish Surveys</b>	9	11	20
<b>Total Responses</b>	27	31	58
<b>Total Riders</b>	56	54	110

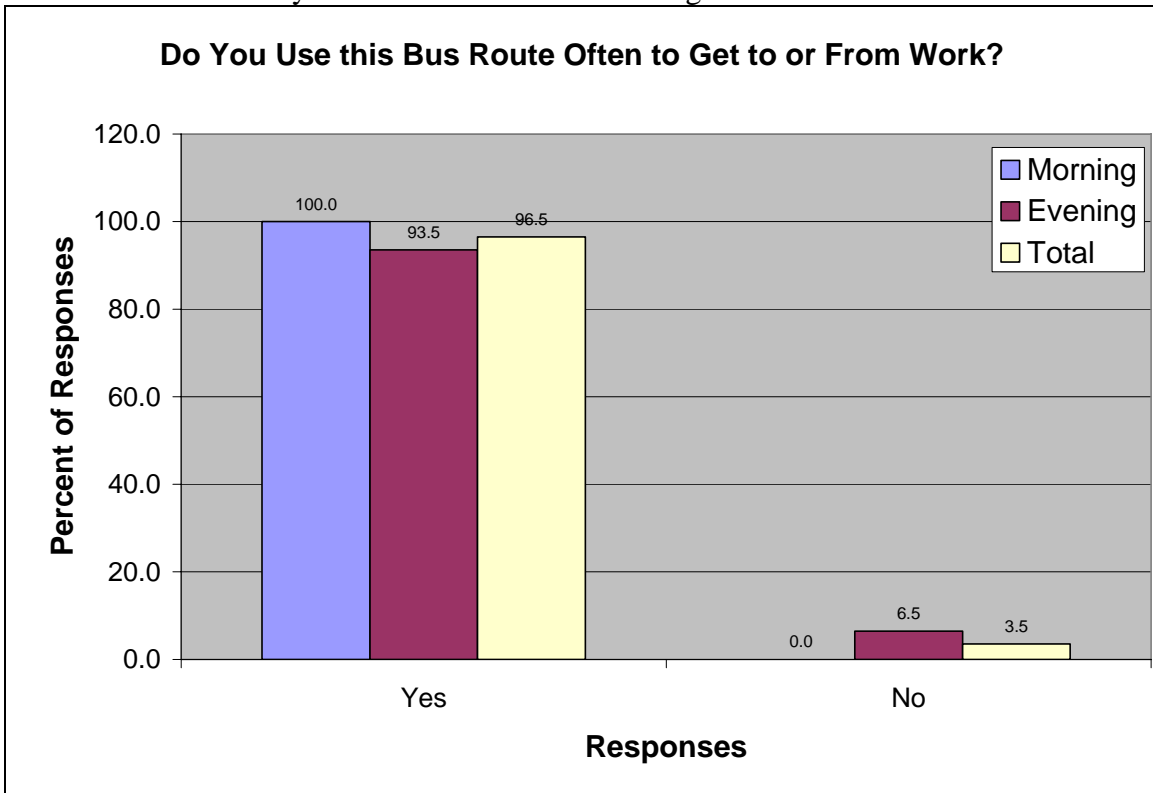
1. What is the *main* purpose of your trip today?



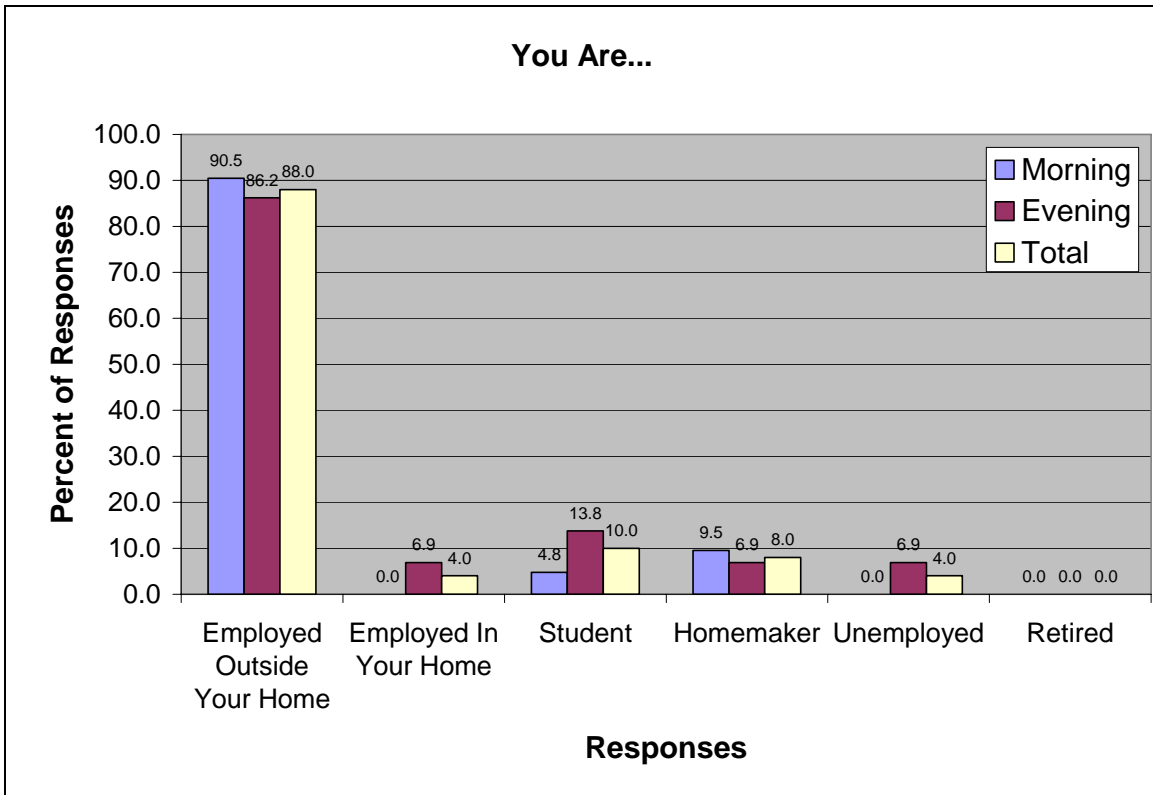
2. Are you *going to* or *coming from* the main purpose of your trip?



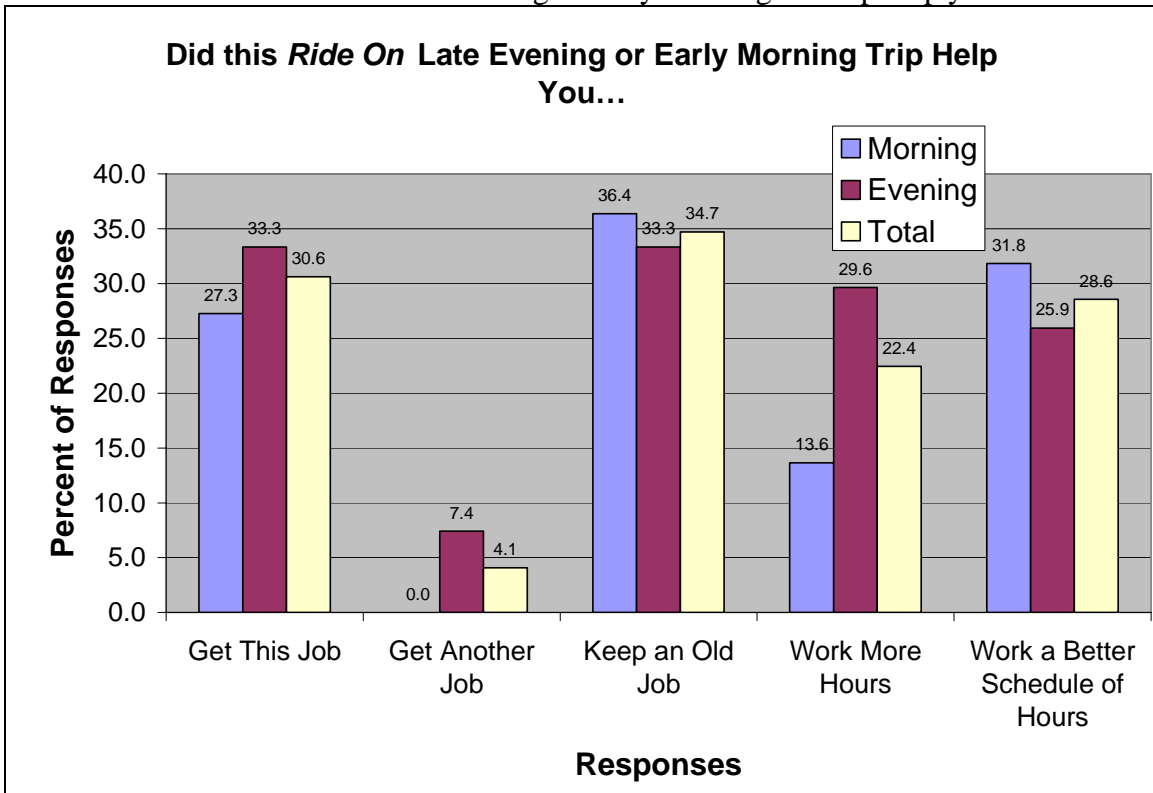
3. Do you use this bus route often to get to or from work?



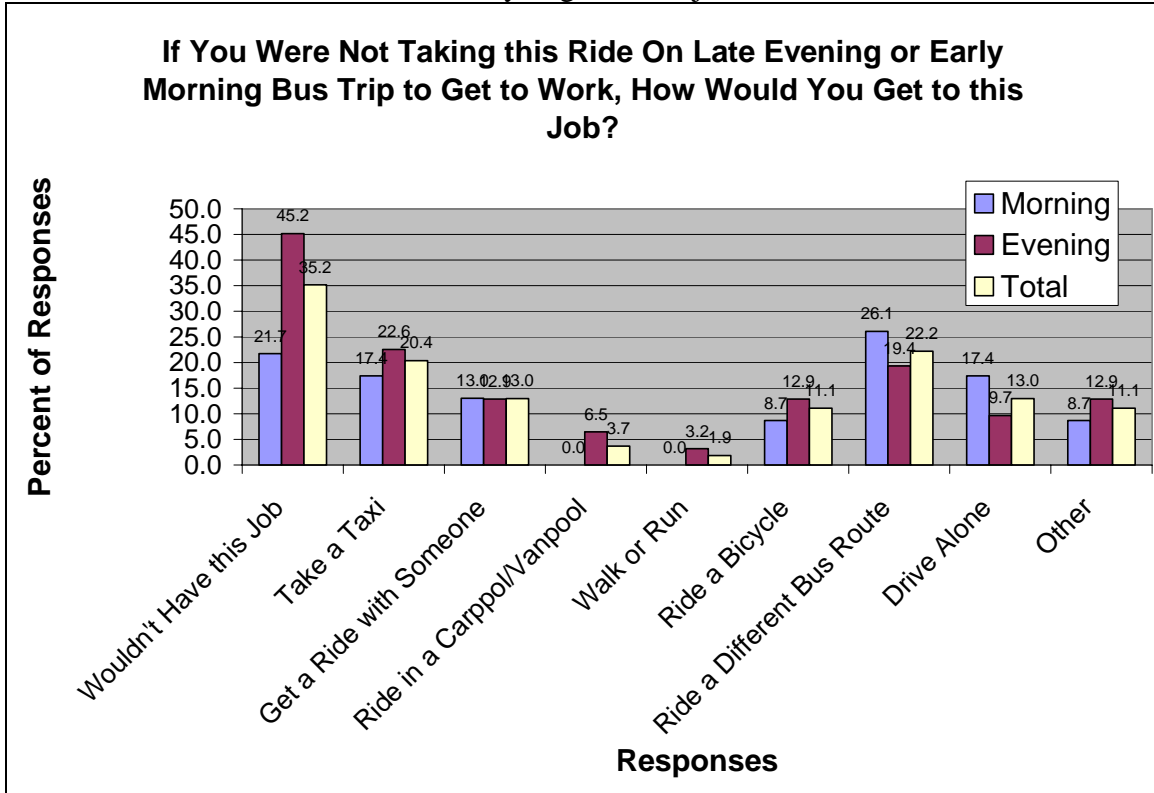
4. You are:



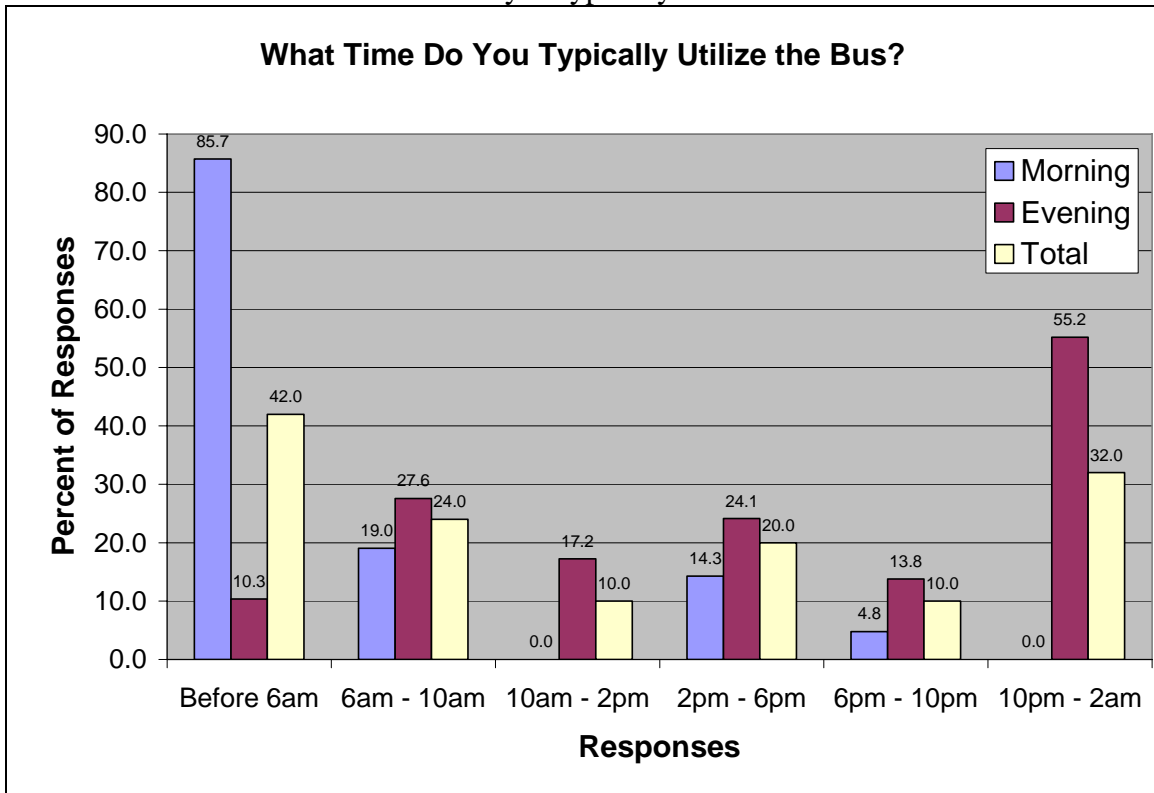
5. Did this Ride On late evening or early morning bus trip help you...



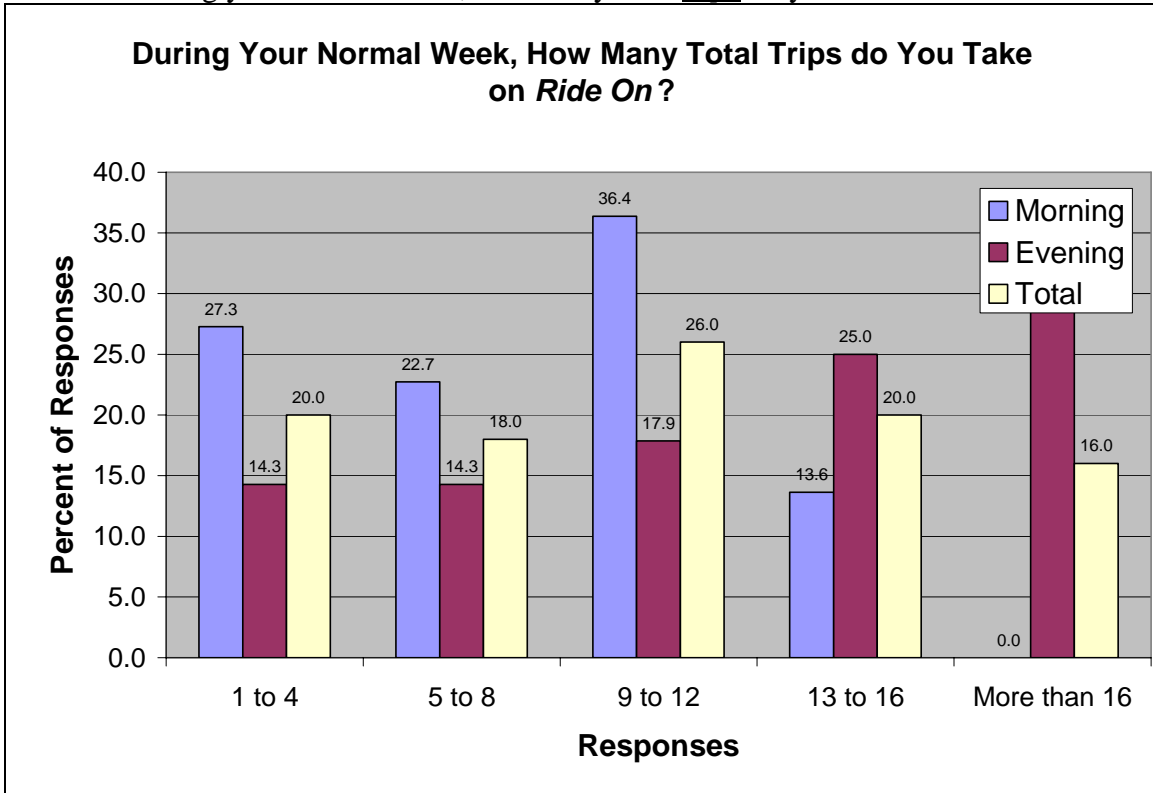
6. If you were not taking this Ride On late evening or early morning bus trip to get to work, how would you get to this job?



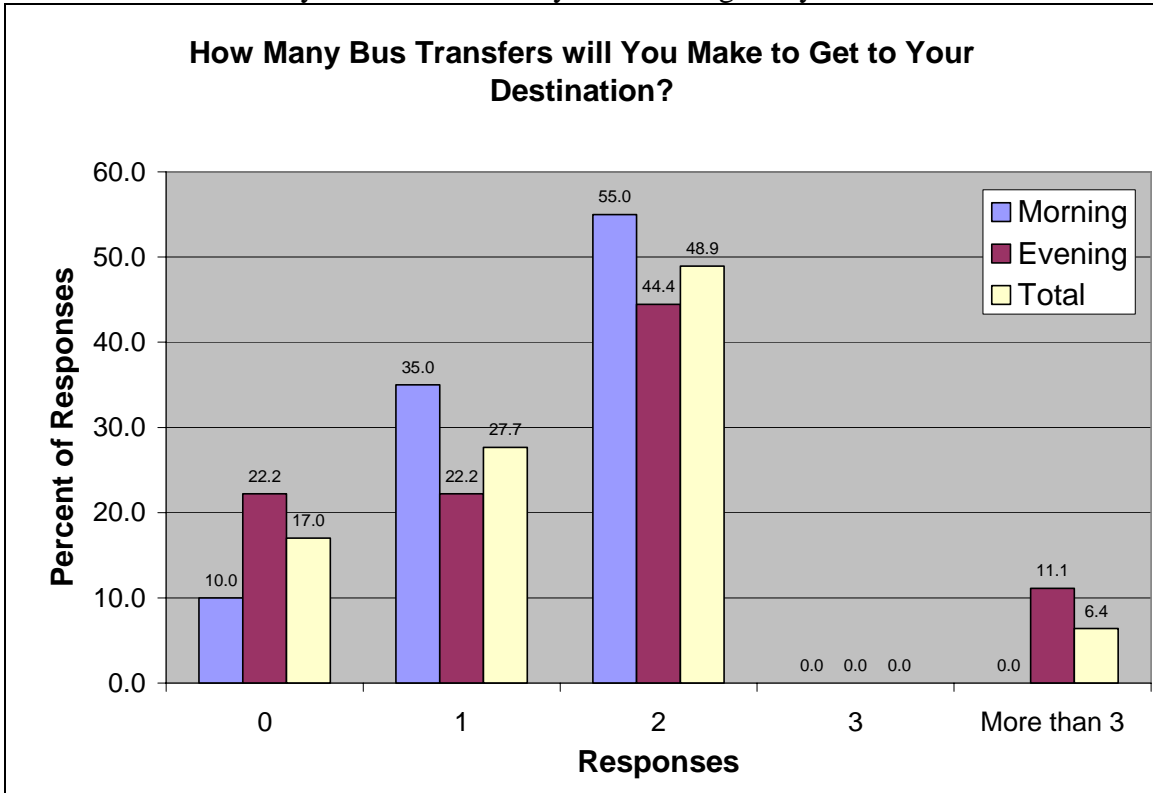
7. What time do you typically utilize the bus?



8. During your normal week, how many total *trips* do you take on Ride On?

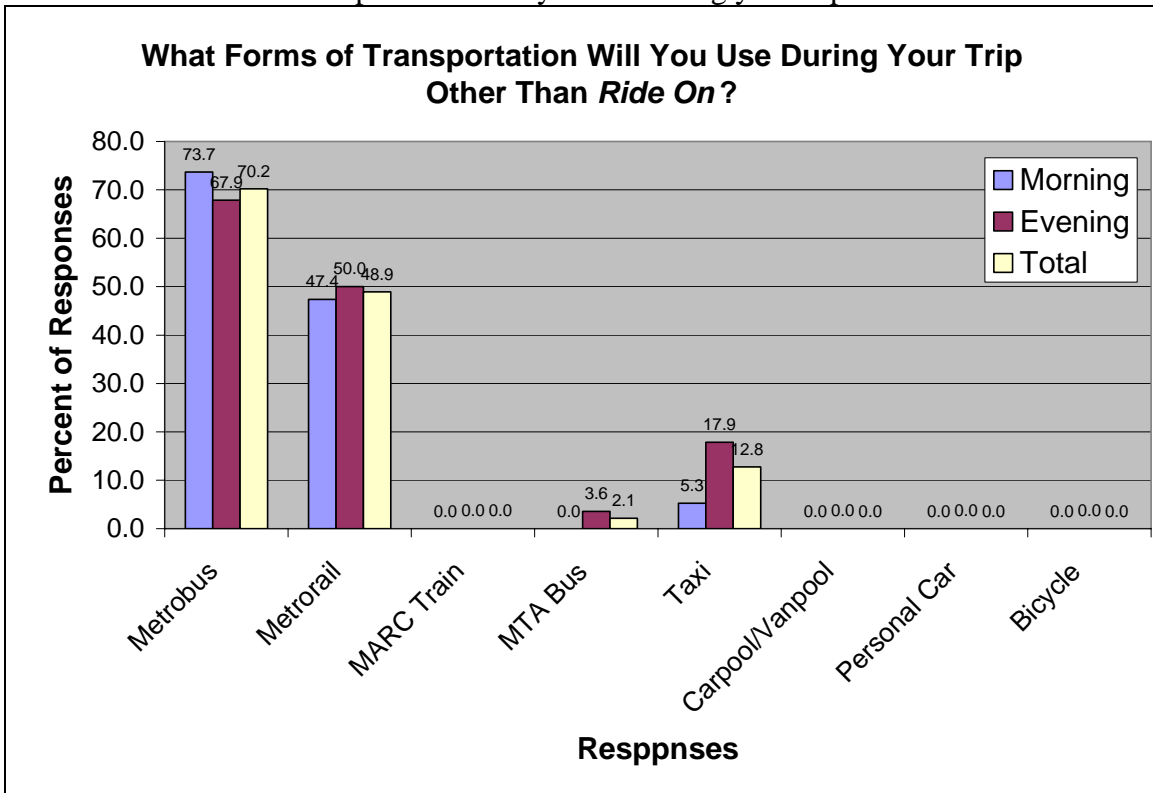


9. How many bus transfers will you make to get to your destination?

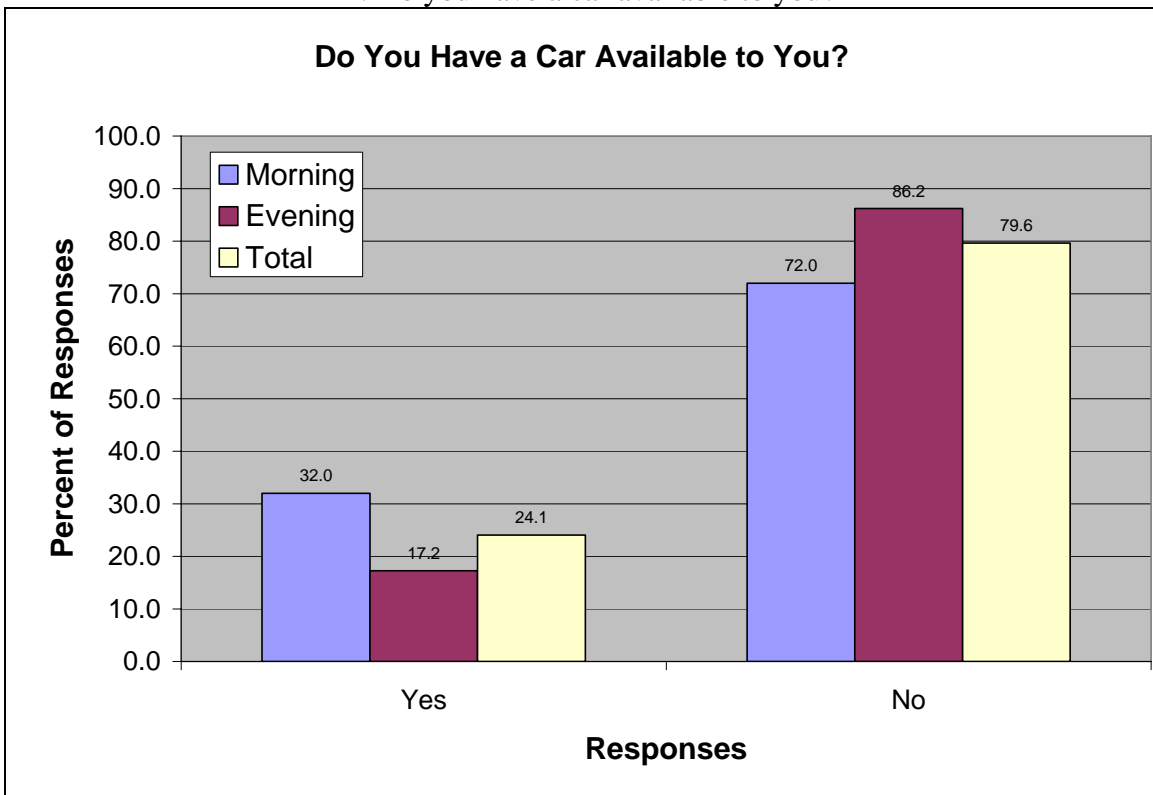




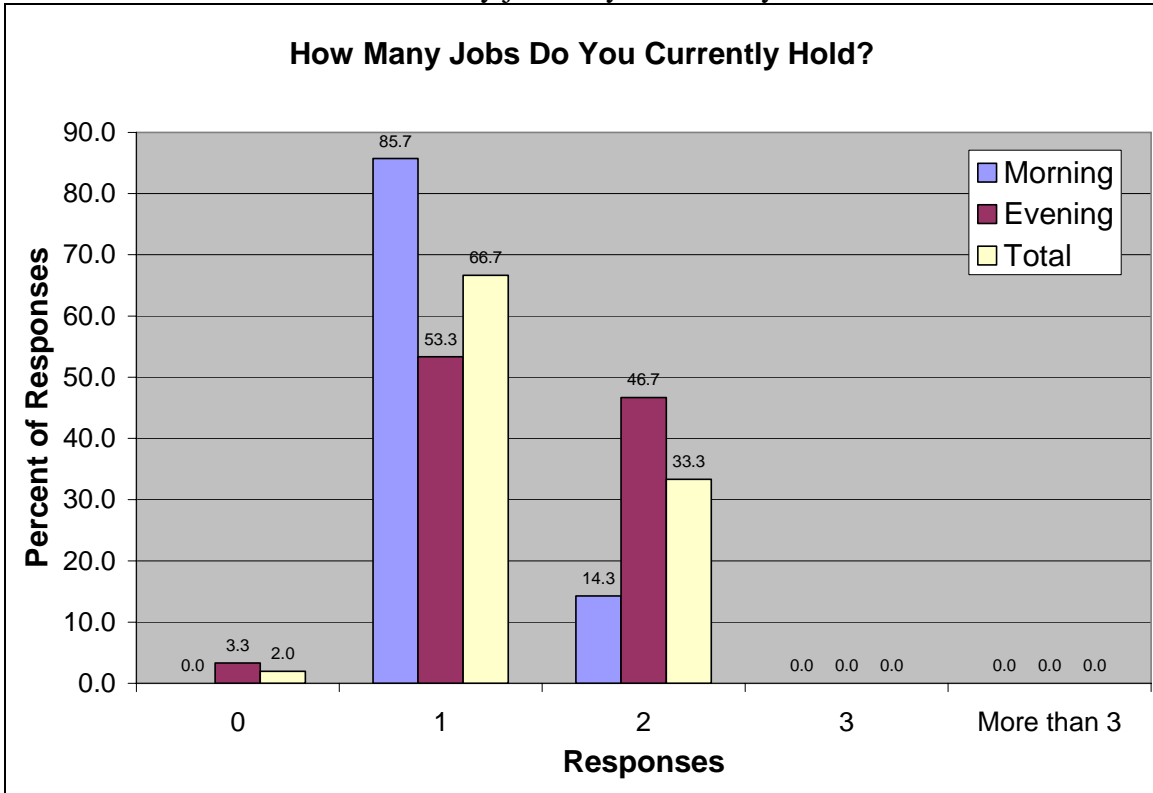
10. What forms of transportation will you use during your trip other than Ride On?



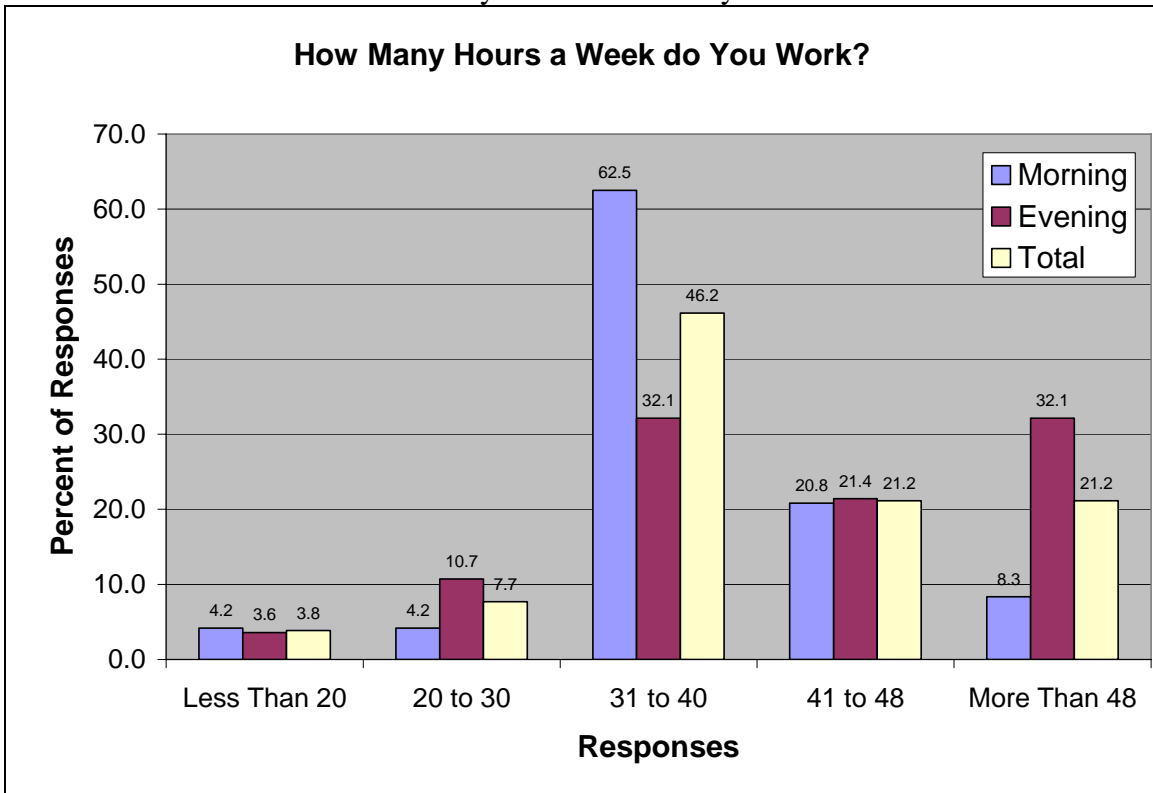
11. Do you have a car available to you?



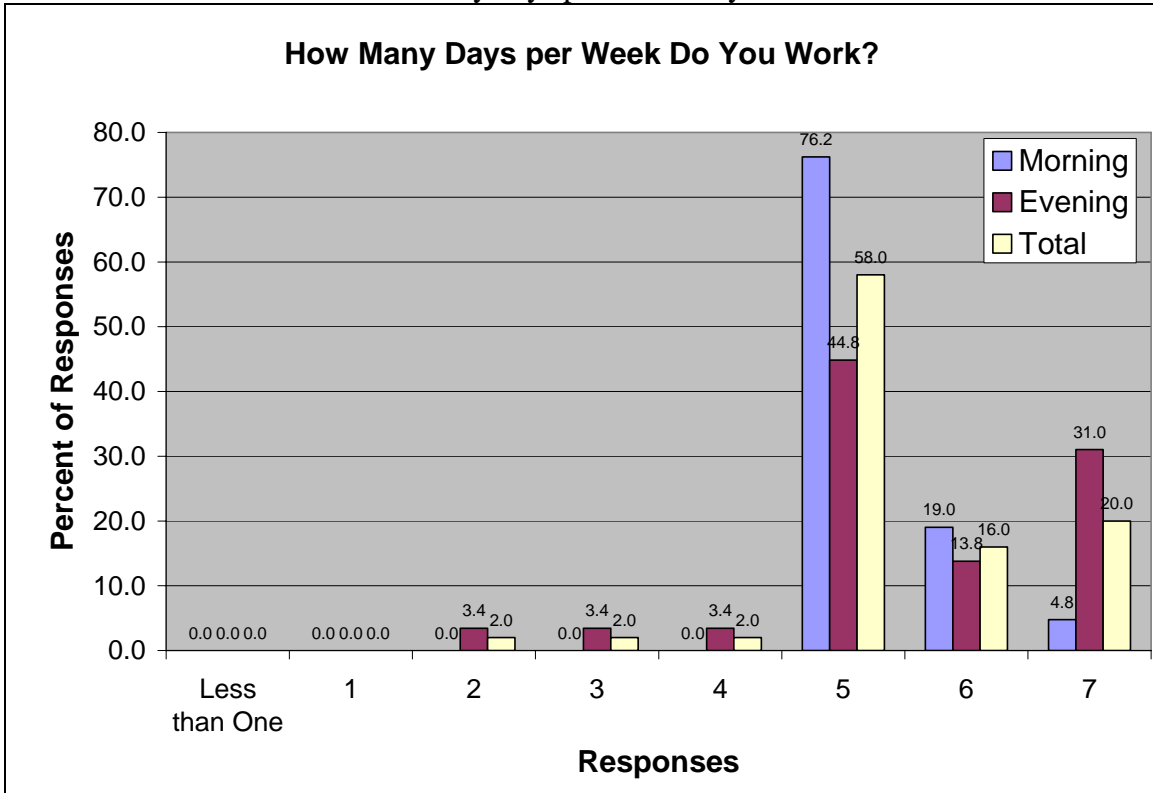
12. How many jobs do you currently hold?



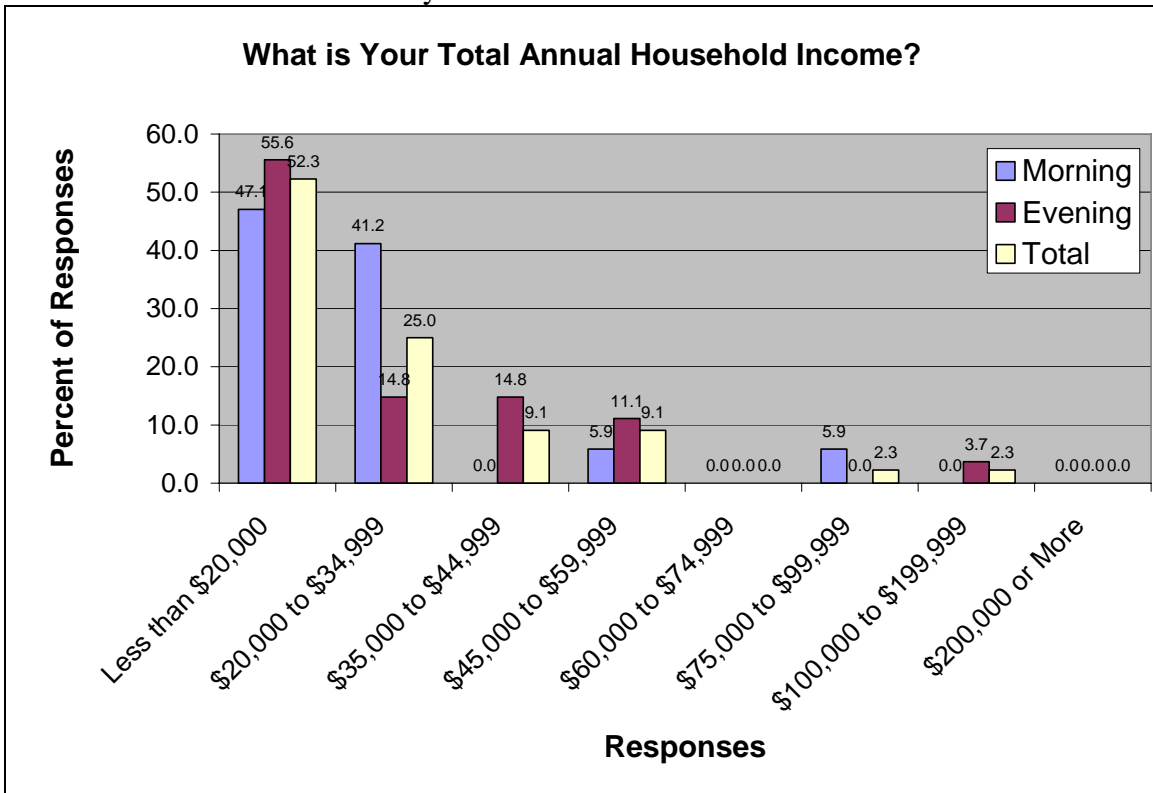
13. How many hours a week do you work?

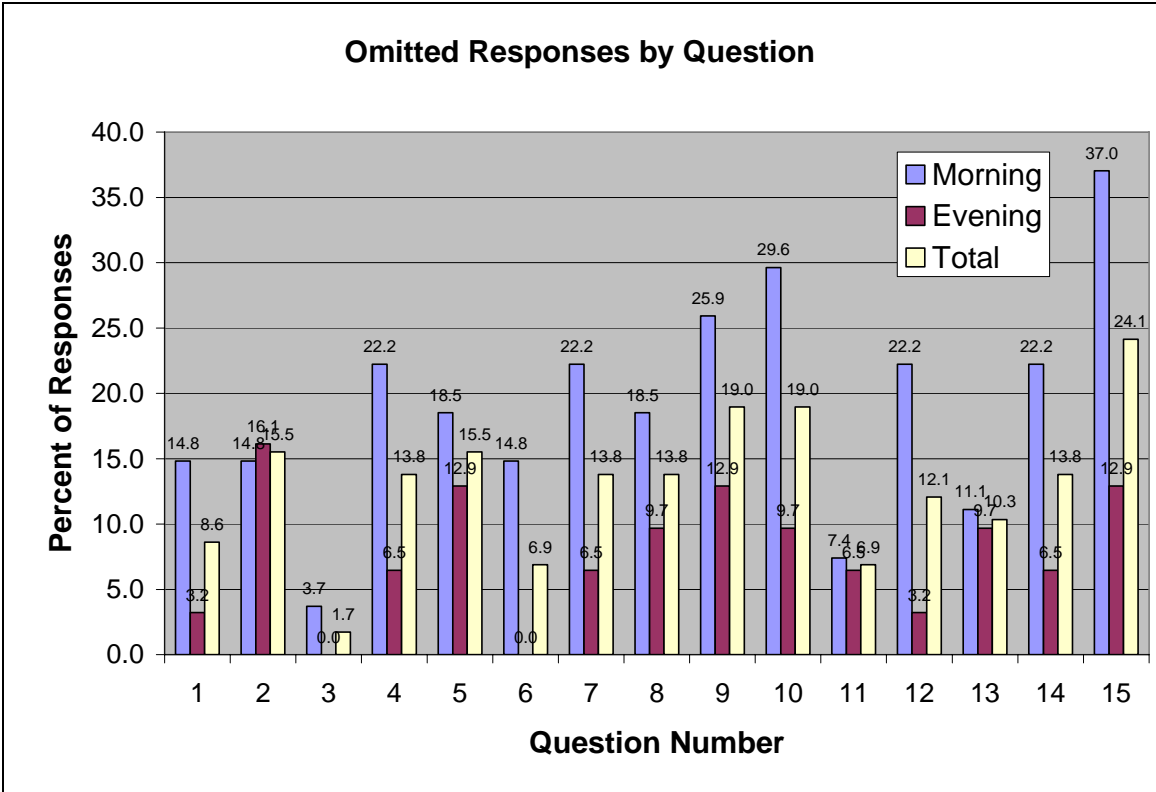


14. How many days per week do you work?



15. What is your total annual household income?

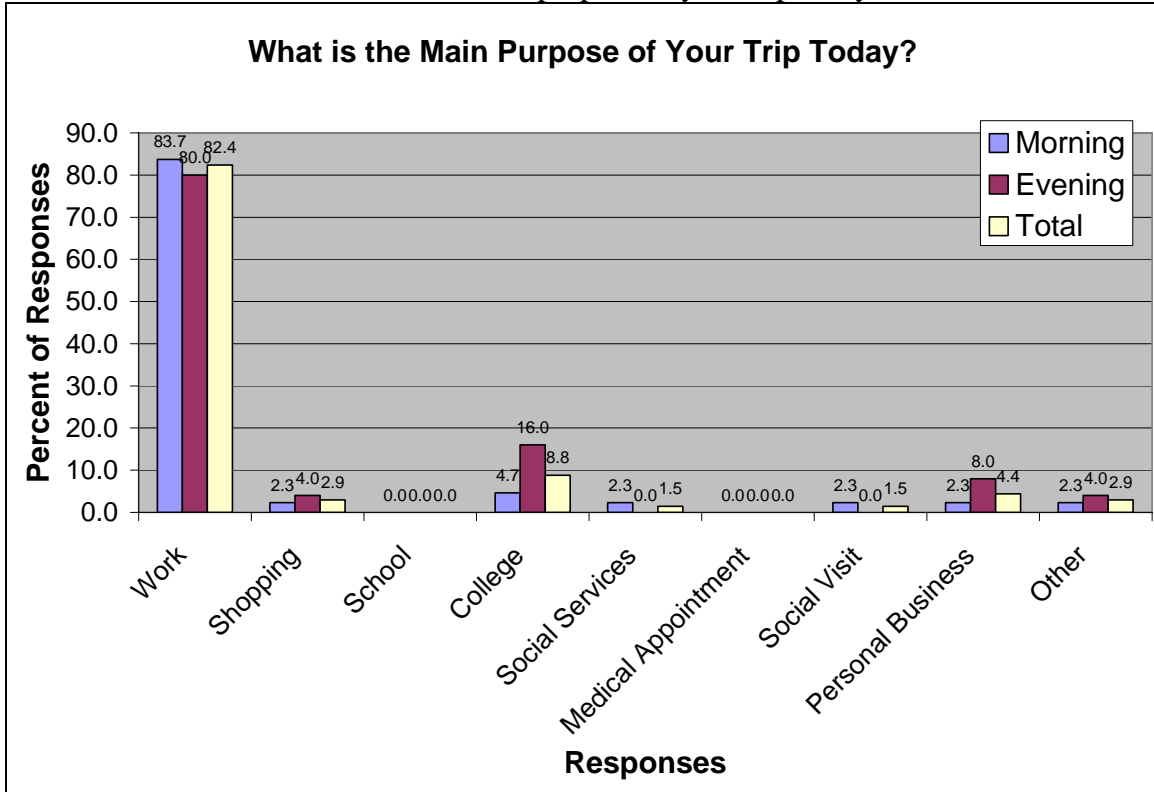




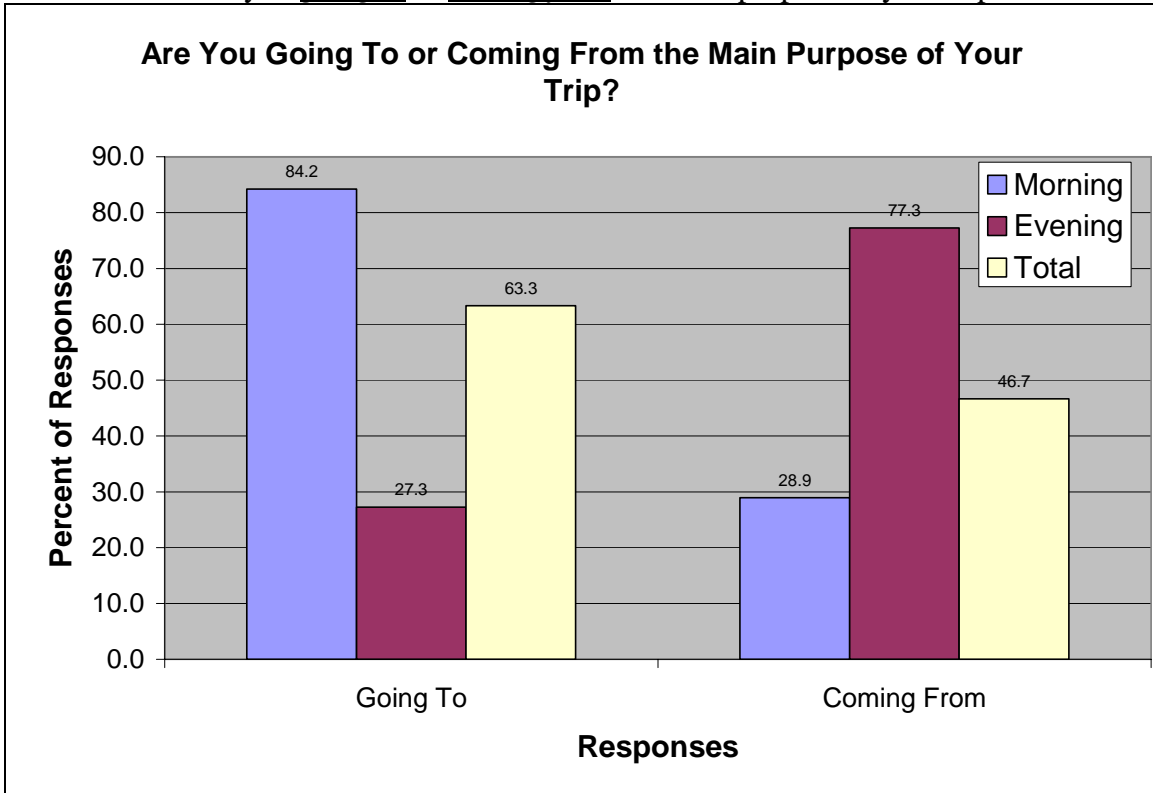
# Route 16

	Morning	Evening	Total
Spanish Surveys	11	5	16
Total Responses	47	27	74
Total Riders	110	47	157

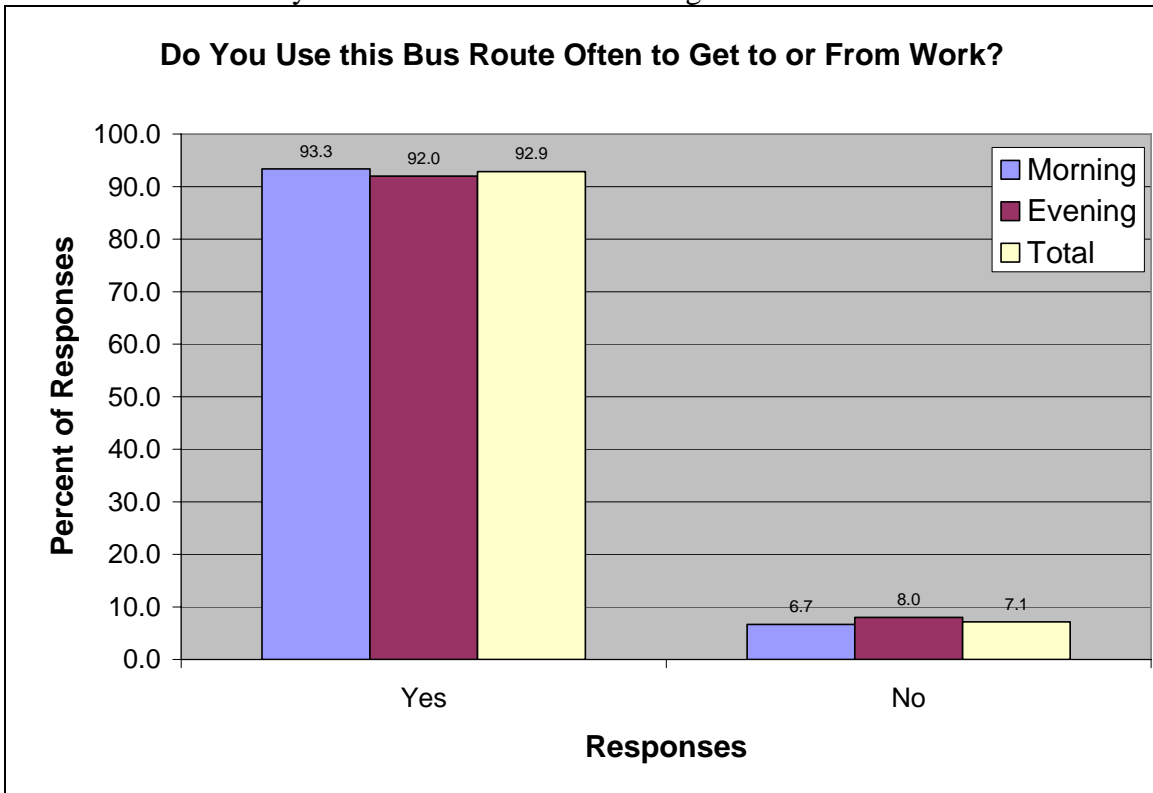
1. What is the main purpose of your trip today?



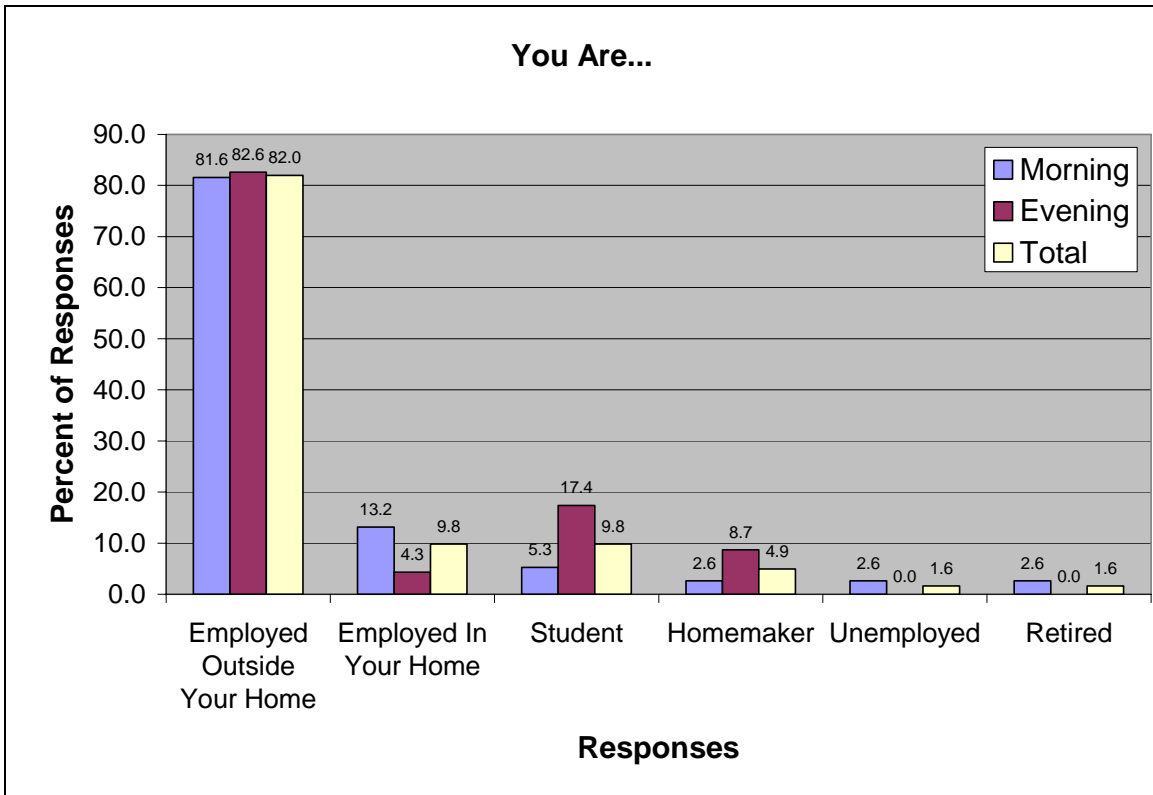
2. Are you *going to* or *coming from* the main purpose of your trip?



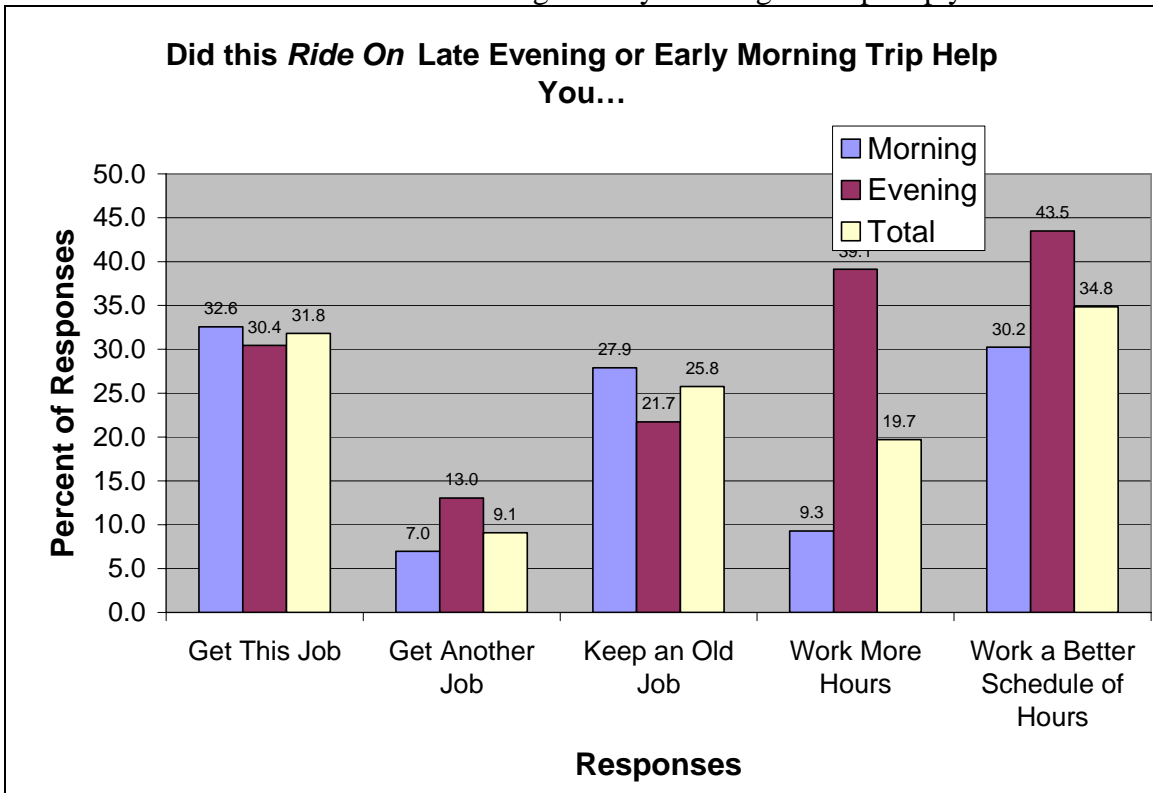
3. Do you use this bus route often to get to or from work?



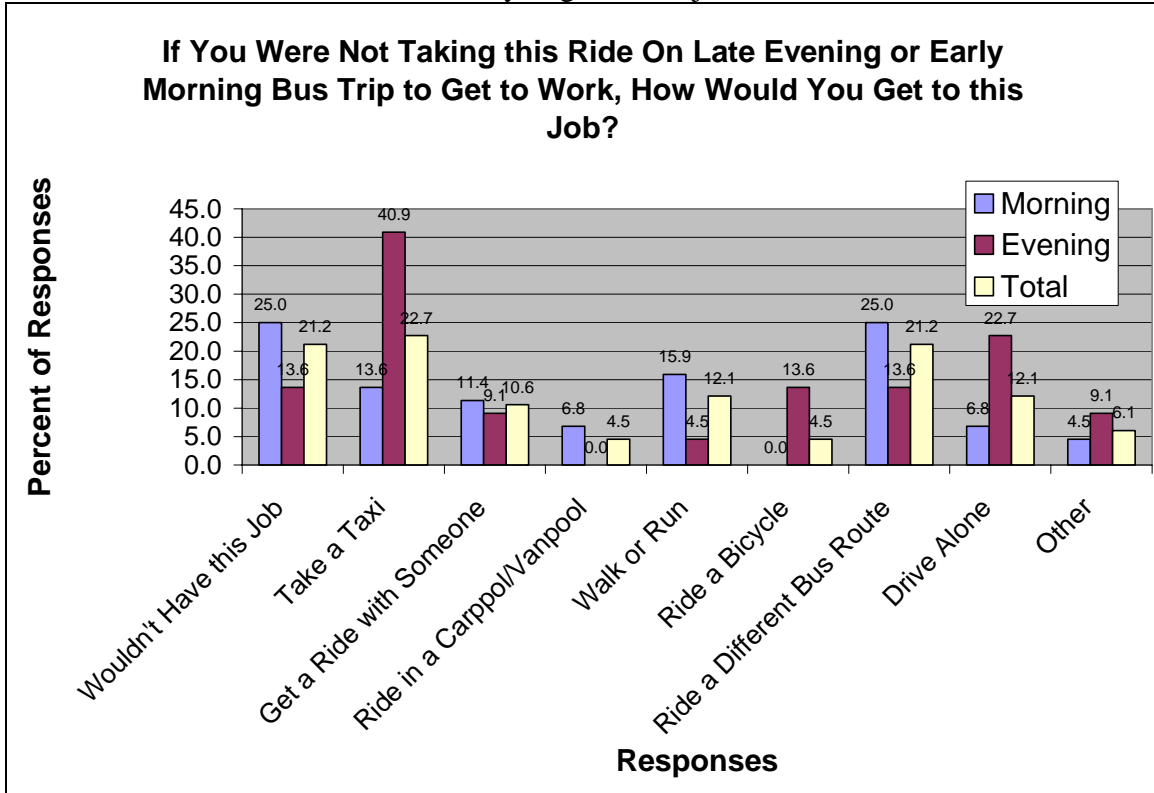
4. You are:



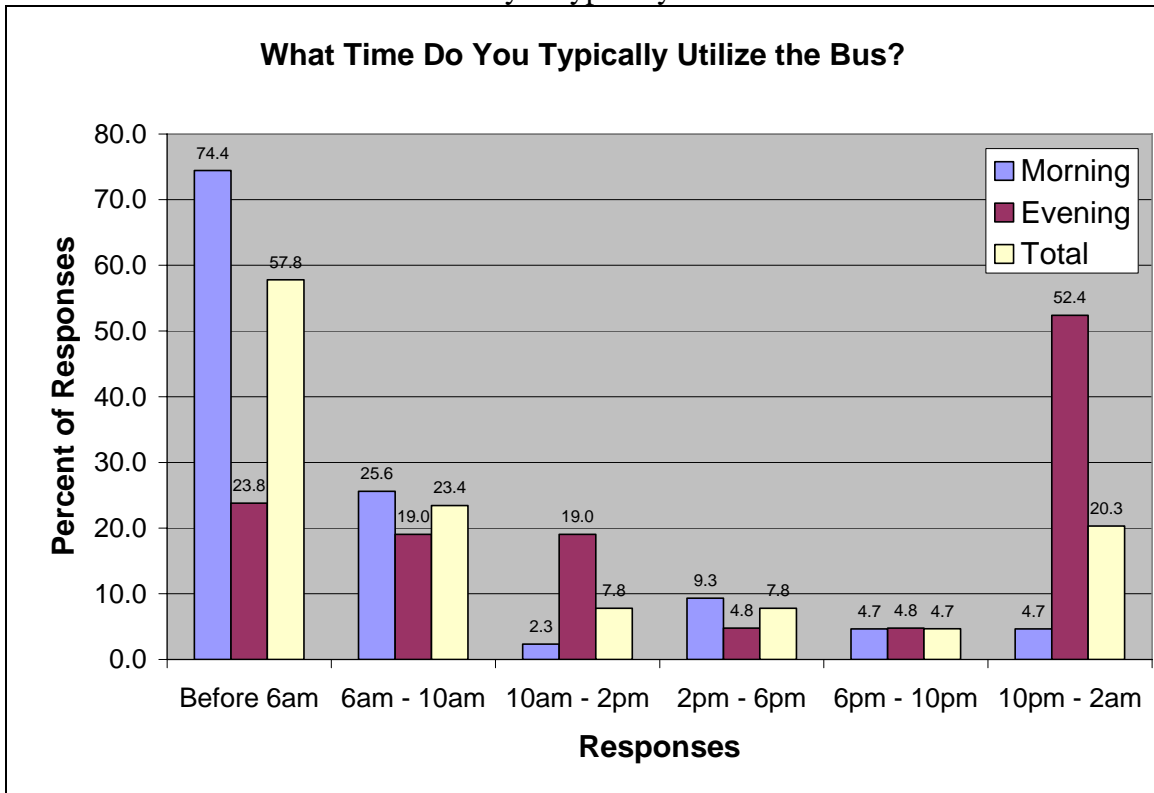
5. Did this Ride On late evening or early morning bus trip help you...



6. If you were not taking this Ride On late evening or early morning bus trip to get to work, how would you get to this job?

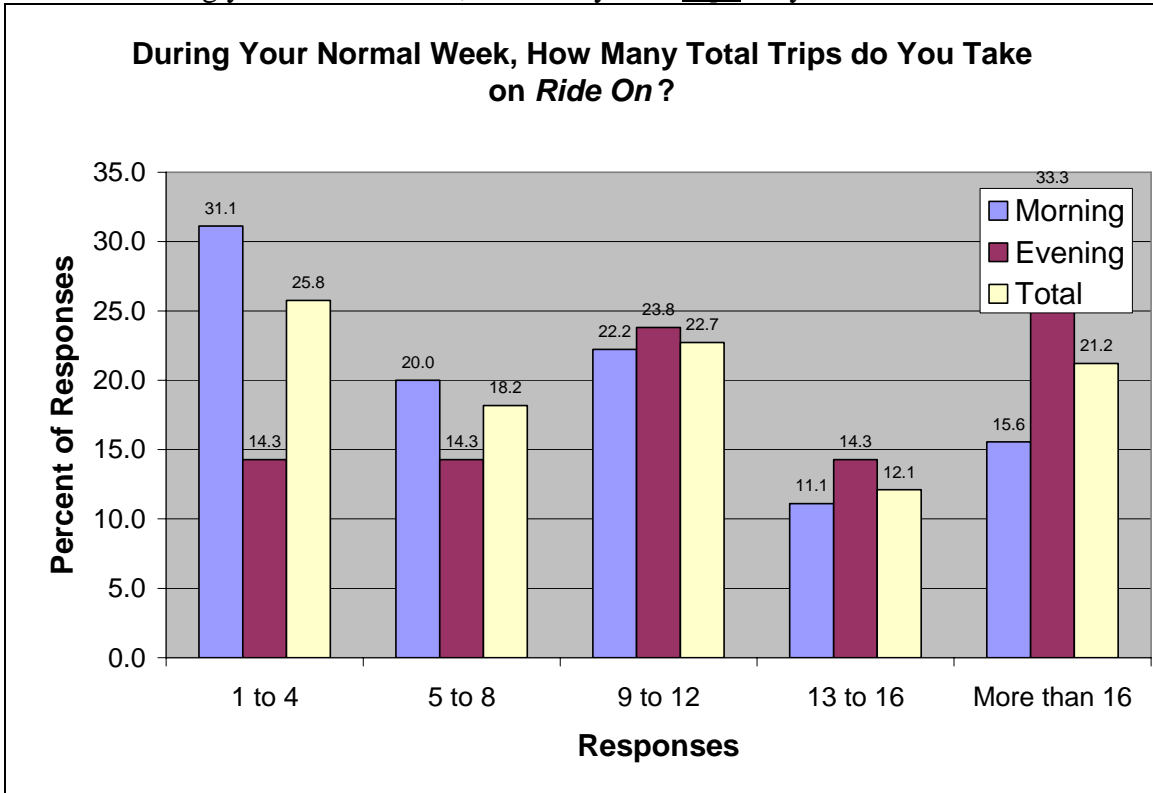


7. What time do you typically utilize the bus?

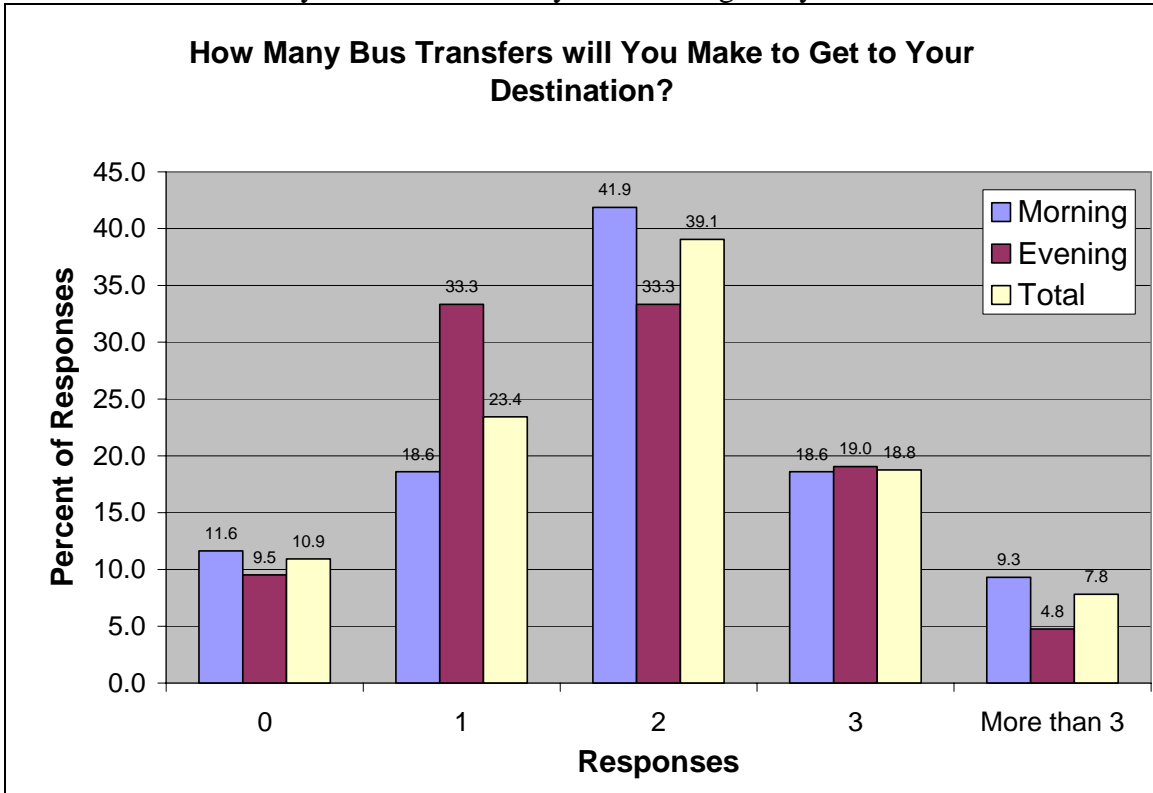




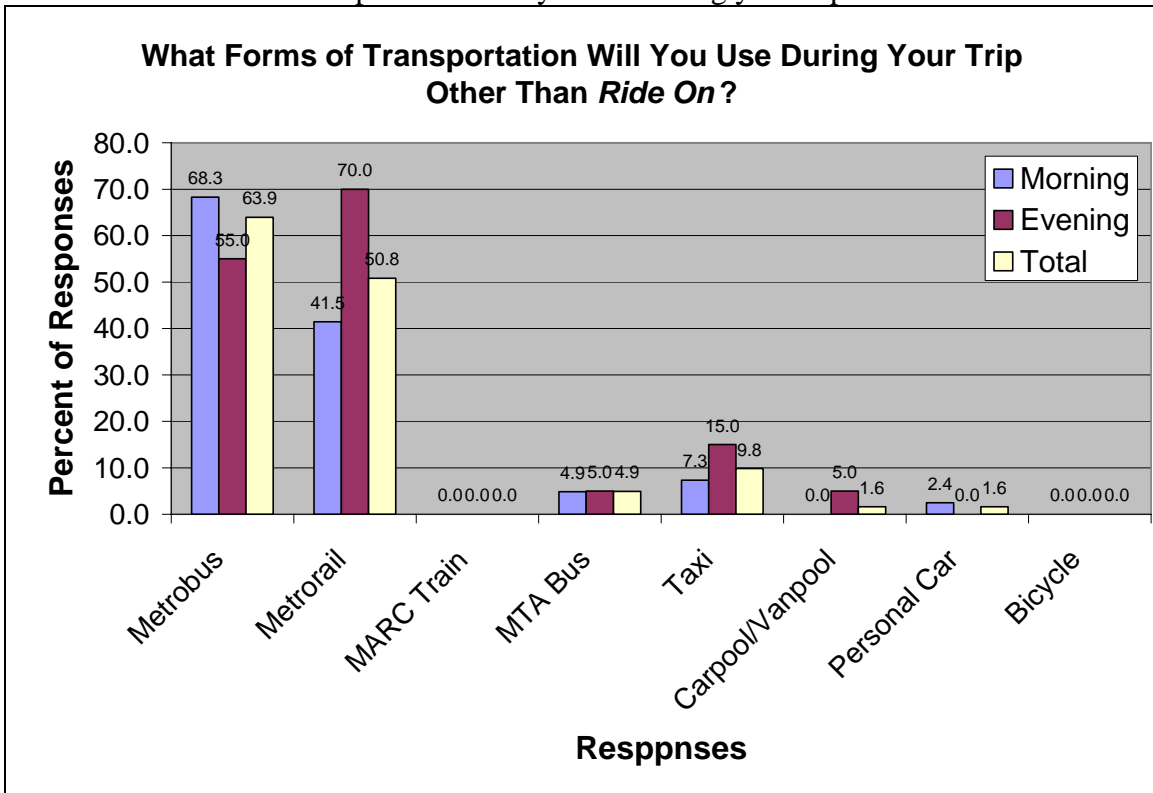
8. During your normal week, how many total *trips* do you take on Ride On?



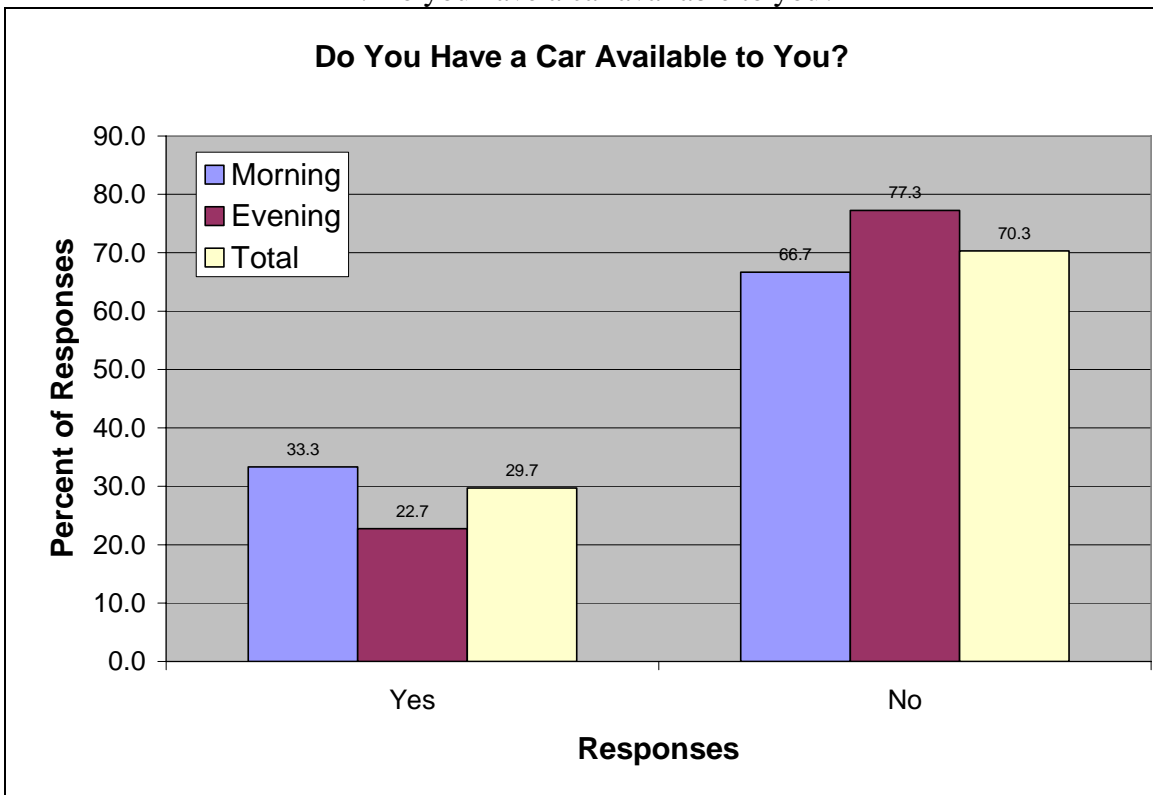
9. How many bus transfers will you make to get to your destination?



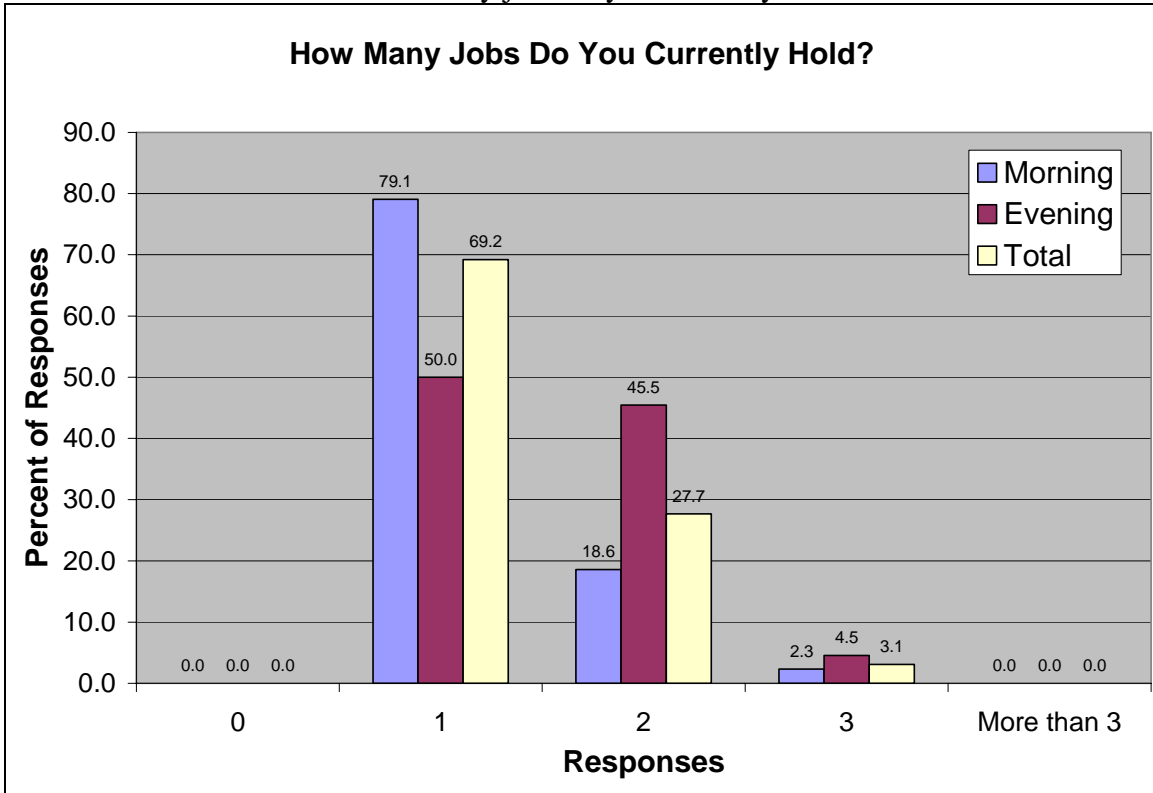
10. What forms of transportation will you use during your trip other than Ride On?



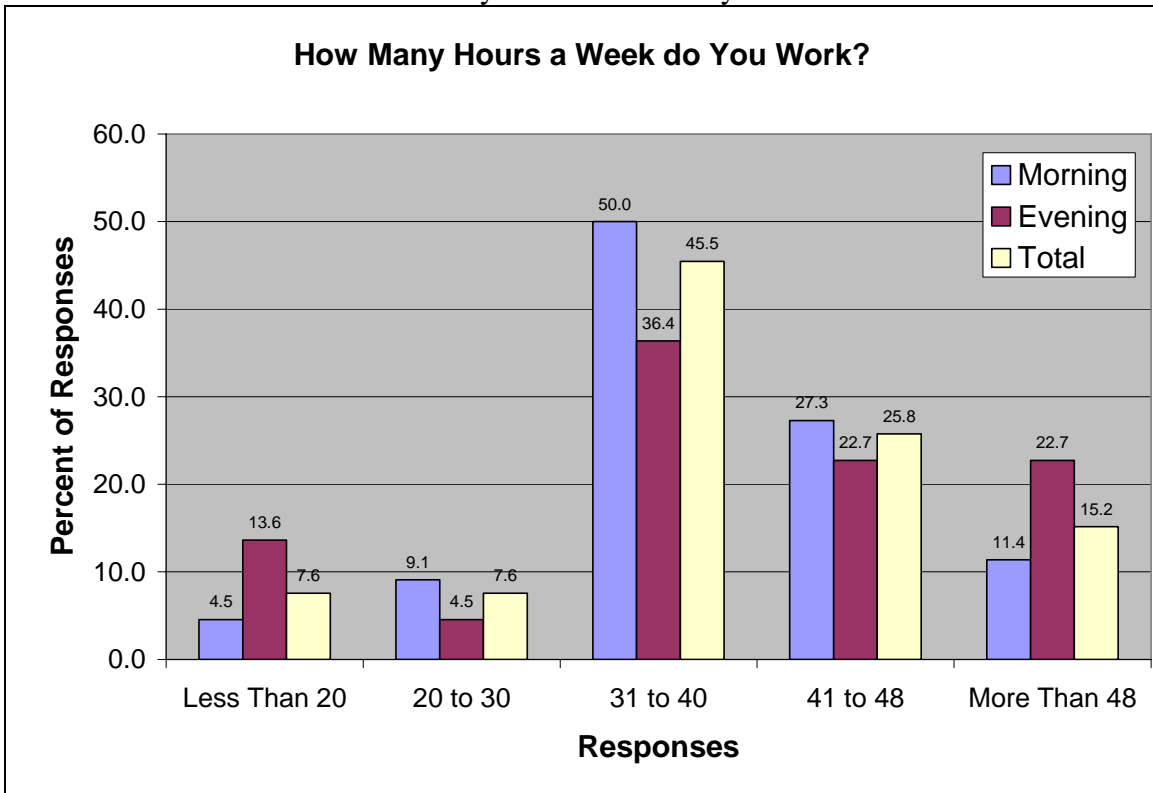
11. Do you have a car available to you?



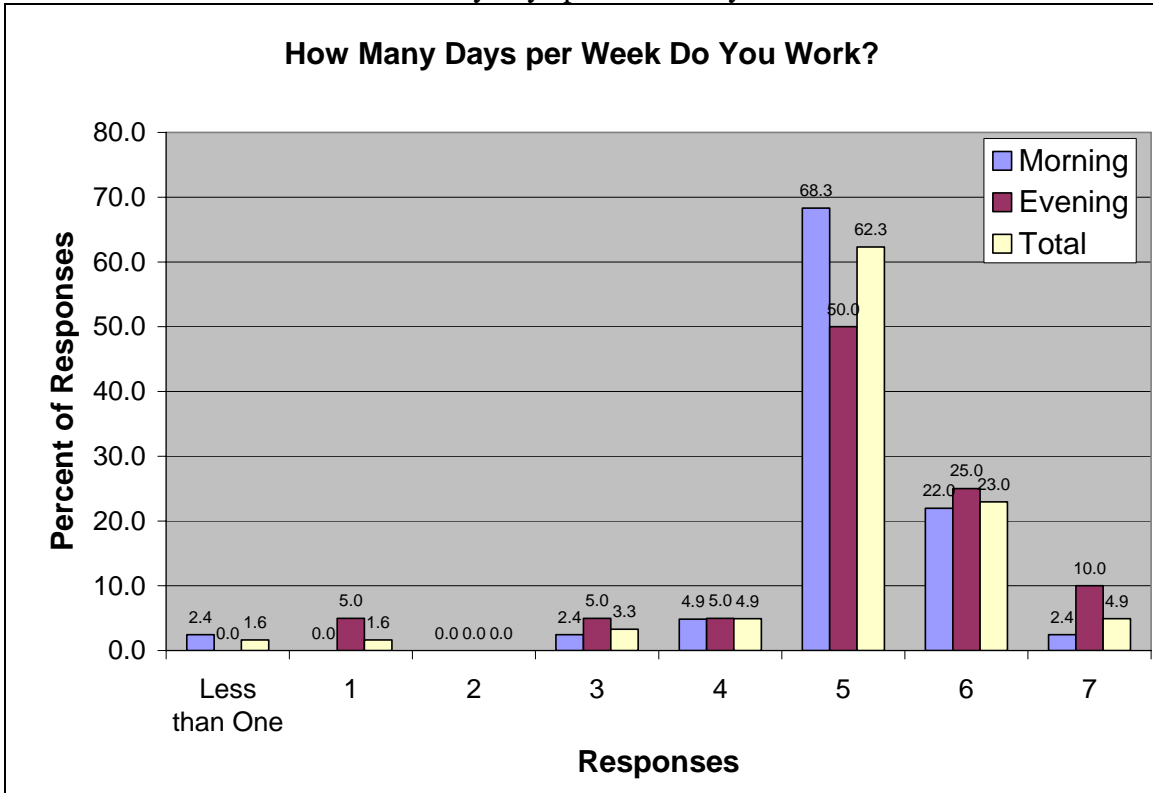
12. How many jobs do you currently hold?



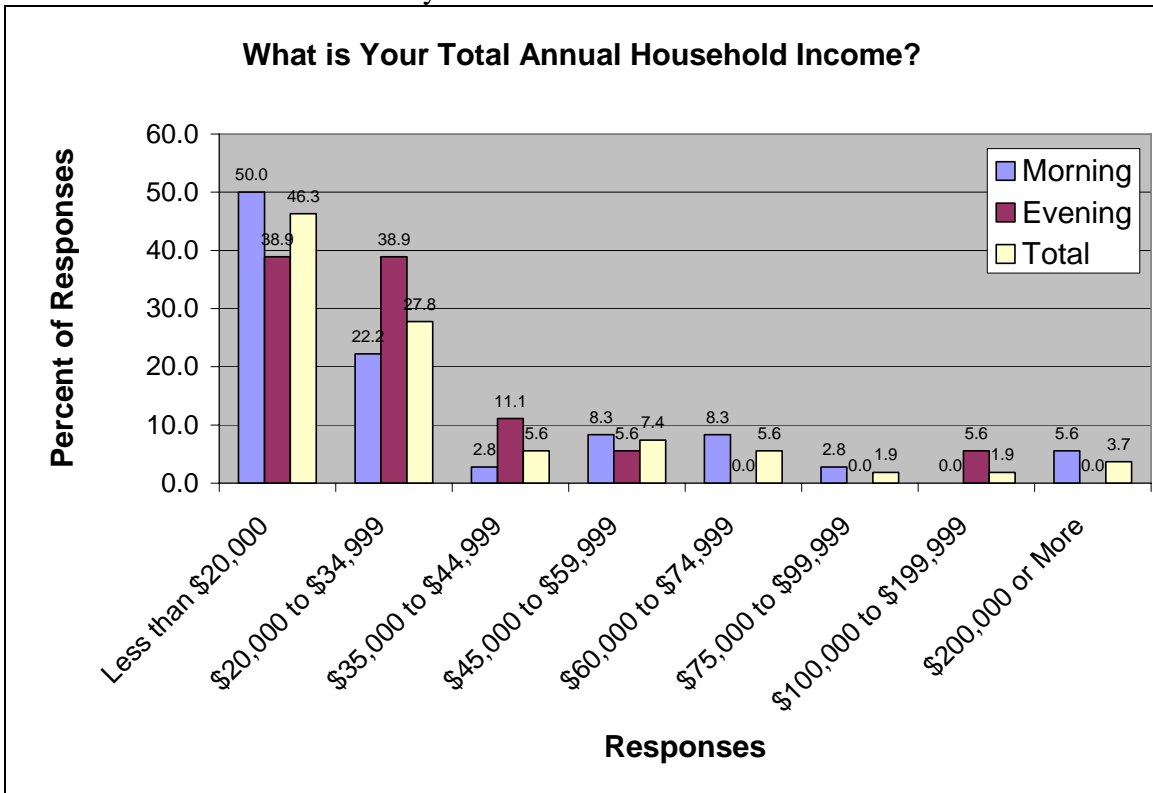
13. How many hours a week do you work?



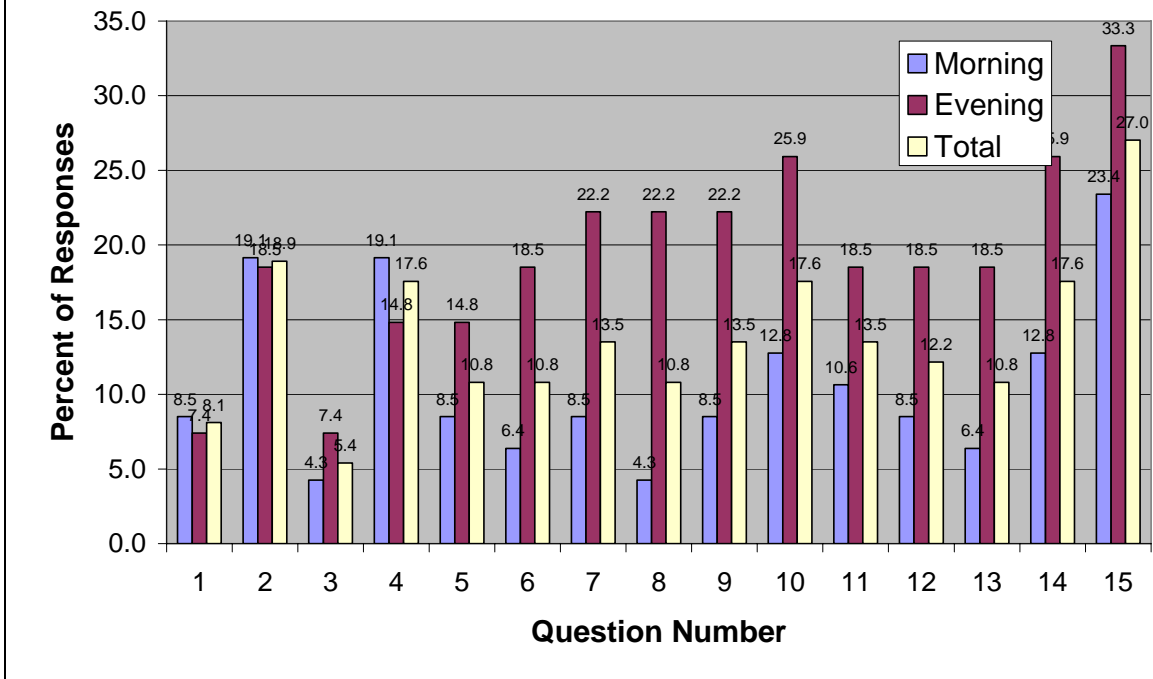
14. How many days per week do you work?



15. What is your total annual household income?



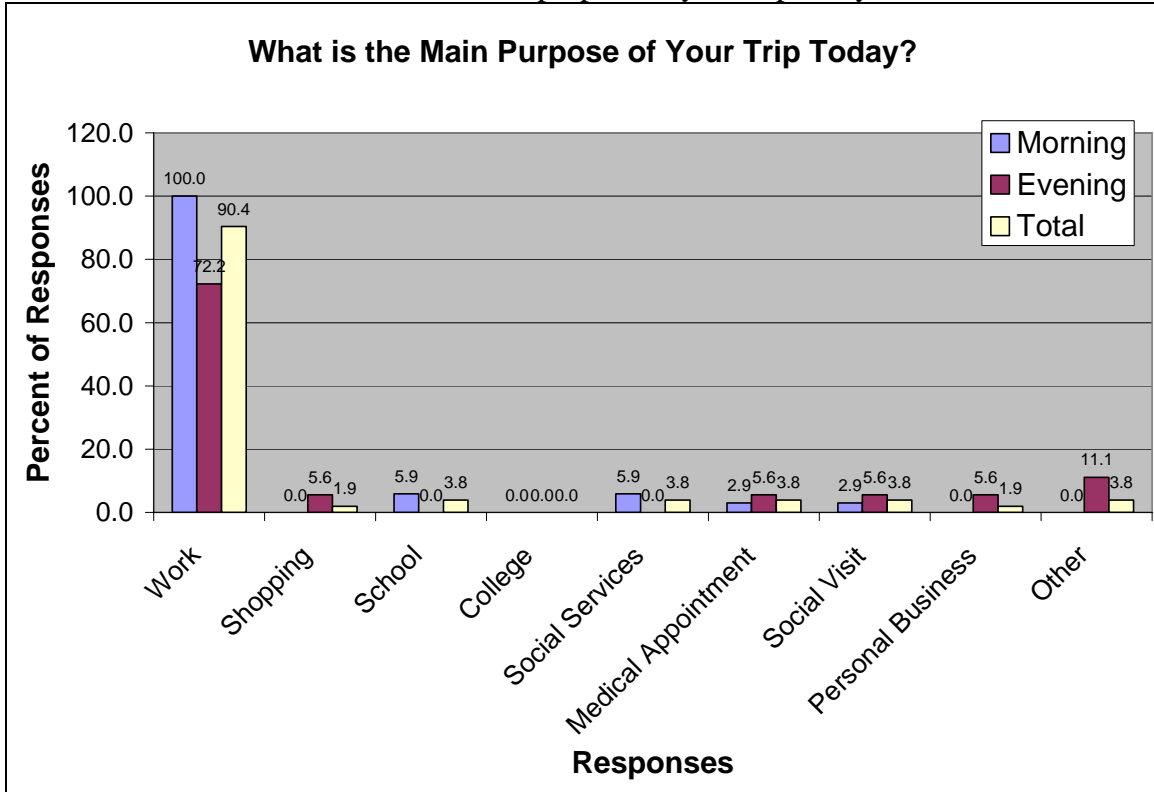
Omitted Responses by Question



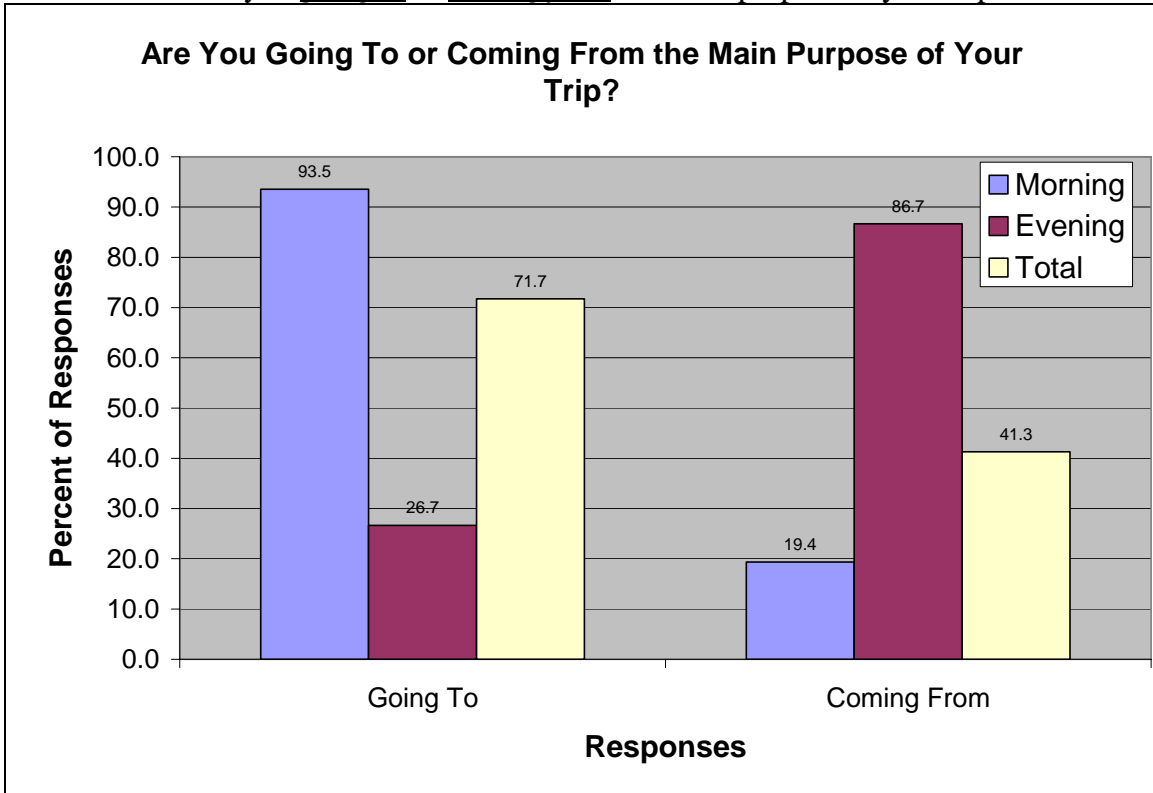
## Route 20

	Morning	Evening	Total
Spanish Surveys	9	2	11
Total Responses	35	20	55
Total Riders	100	45	145

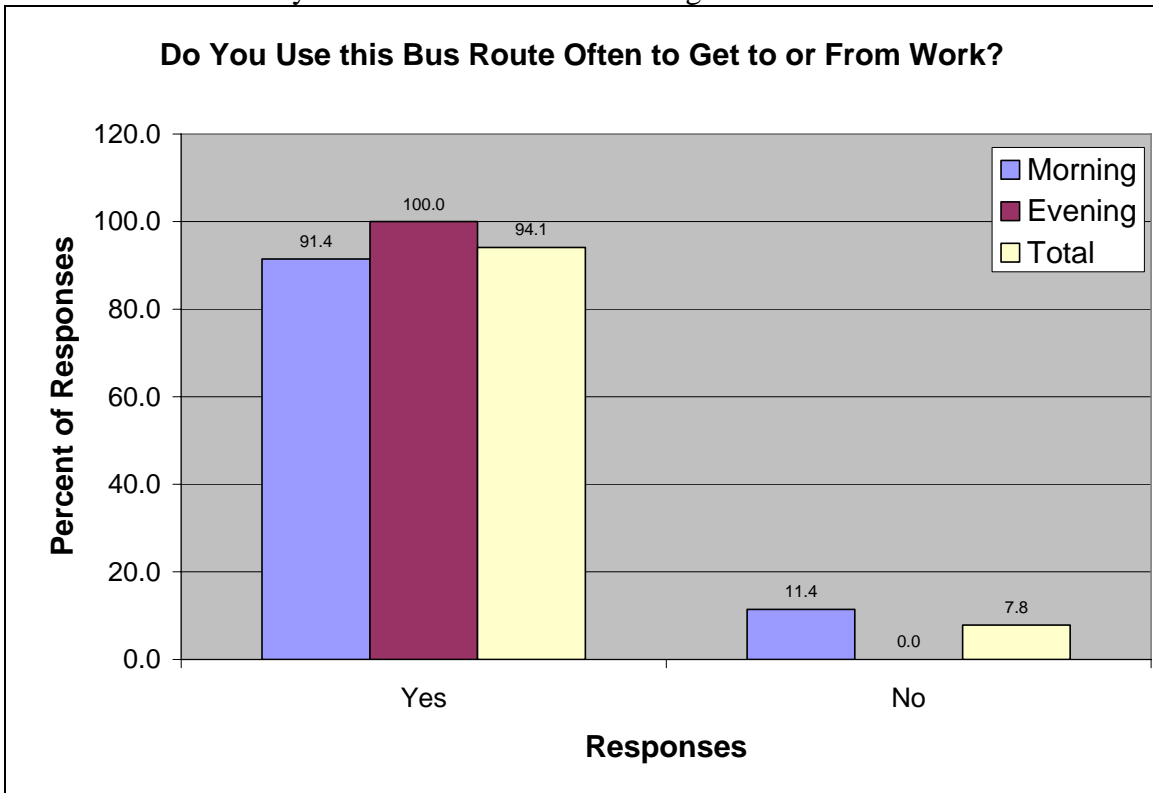
1. What is the main purpose of your trip today?



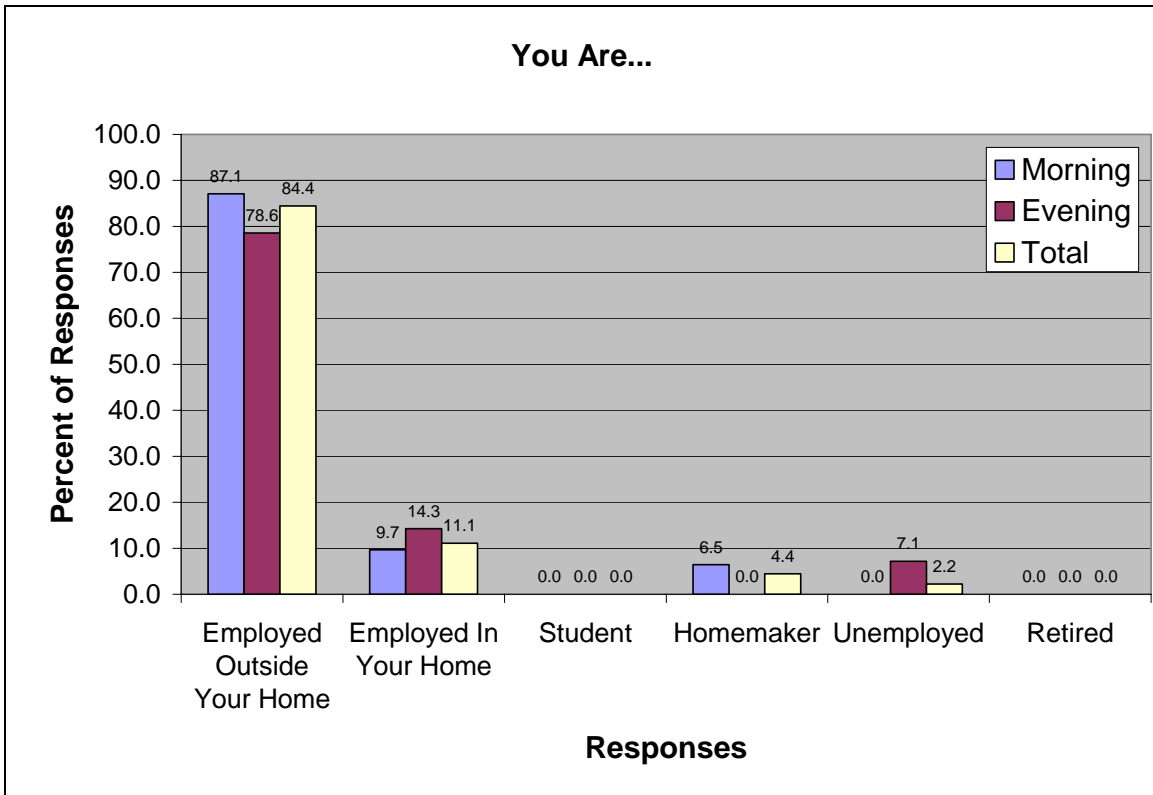
2. Are you *going to* or *coming from* the main purpose of your trip?



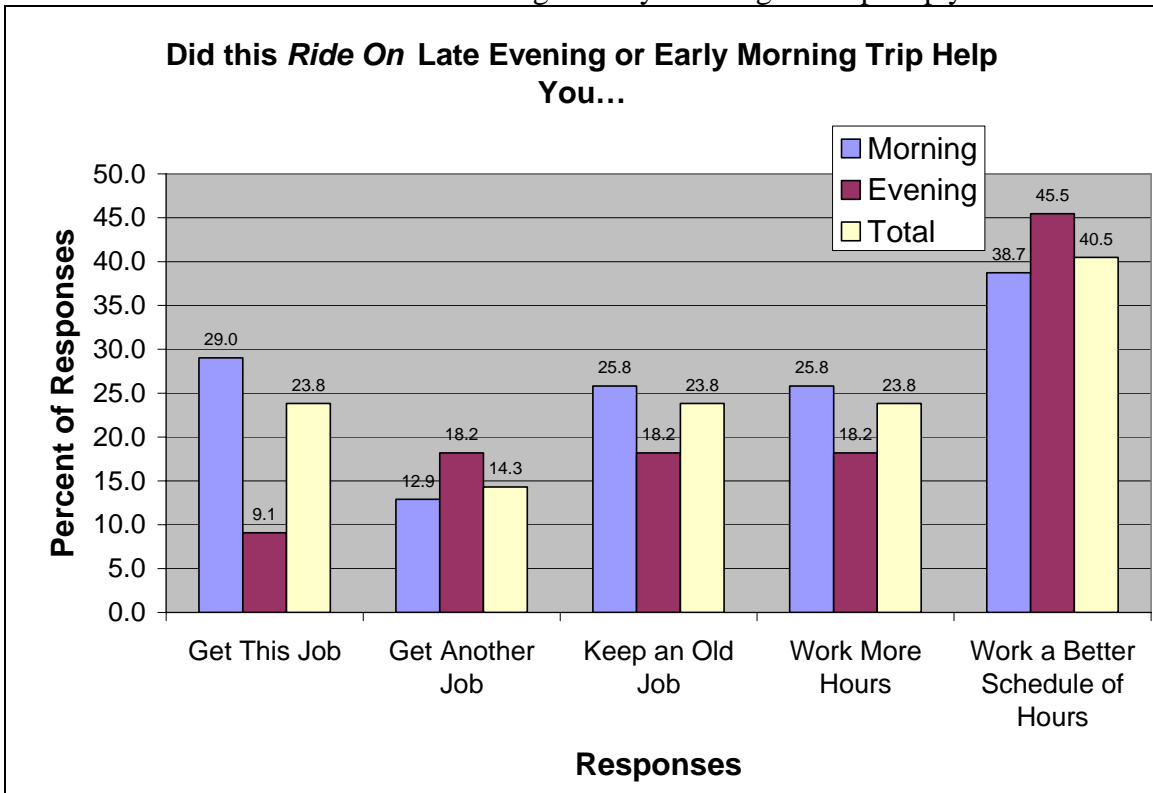
3. Do you use this bus route often to get to or from work?



4. You are:

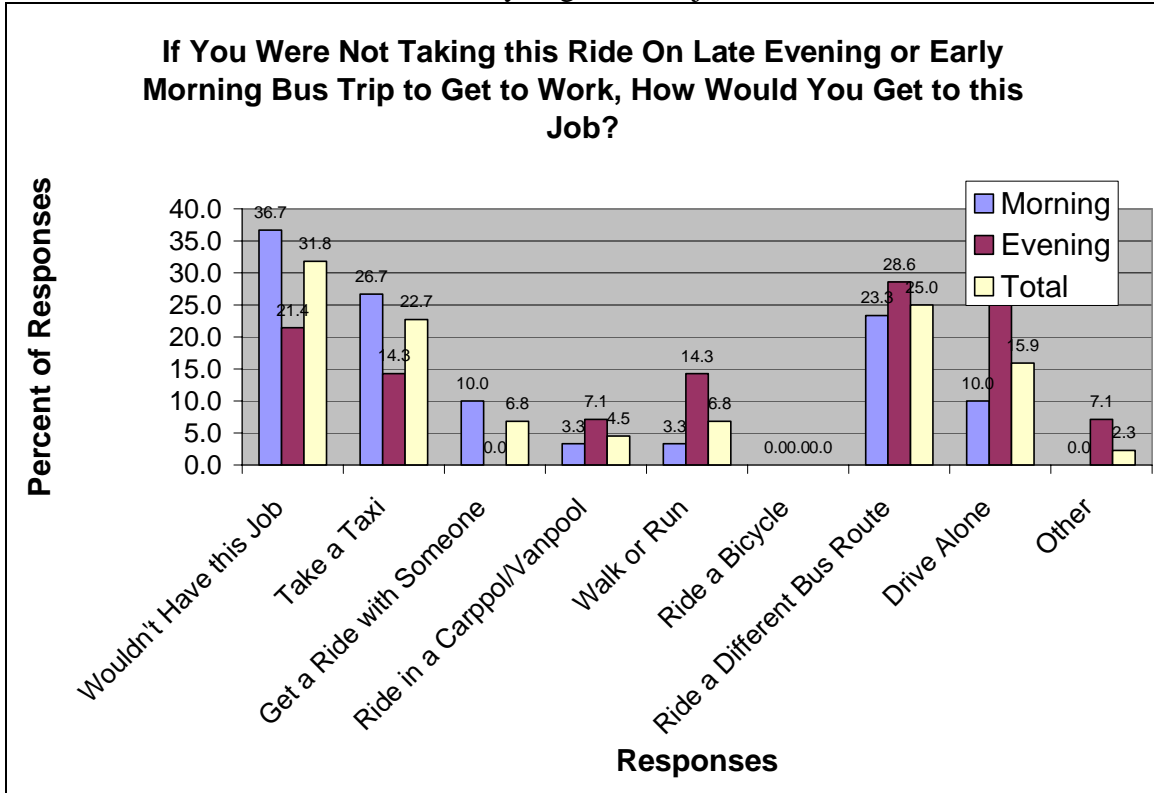


5. Did this Ride On late evening or early morning bus trip help you...

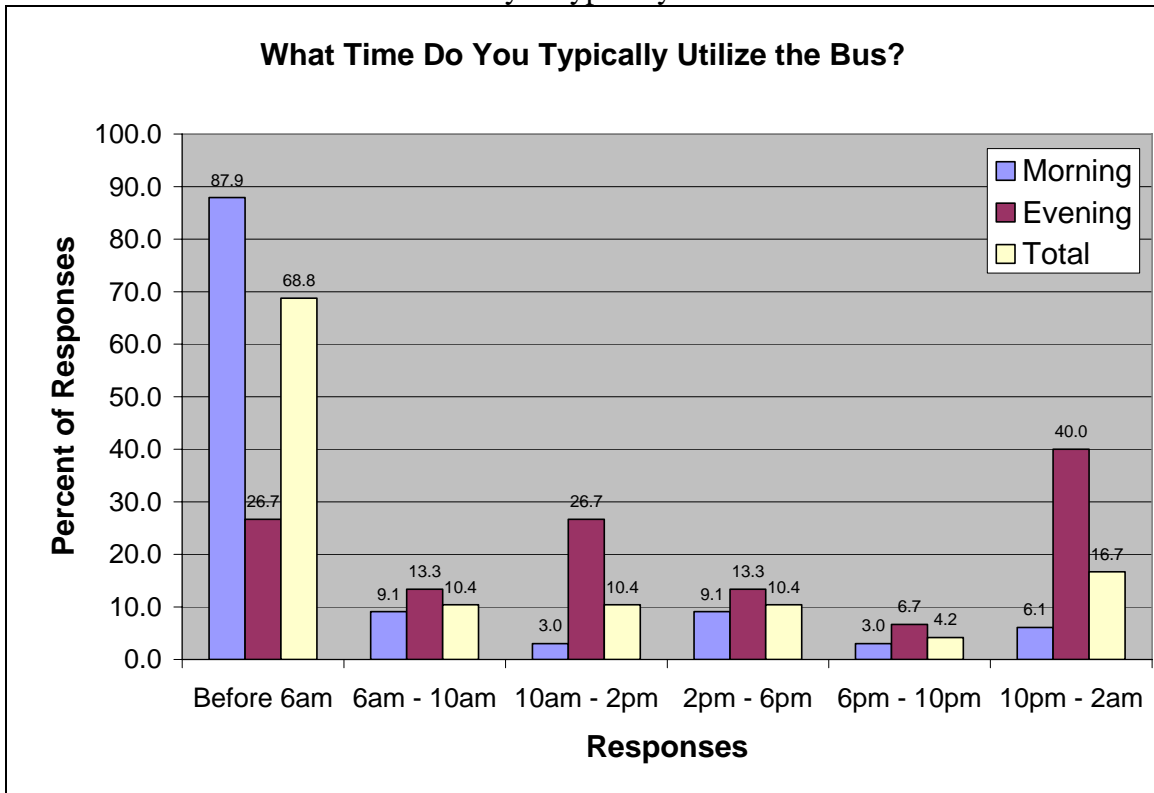




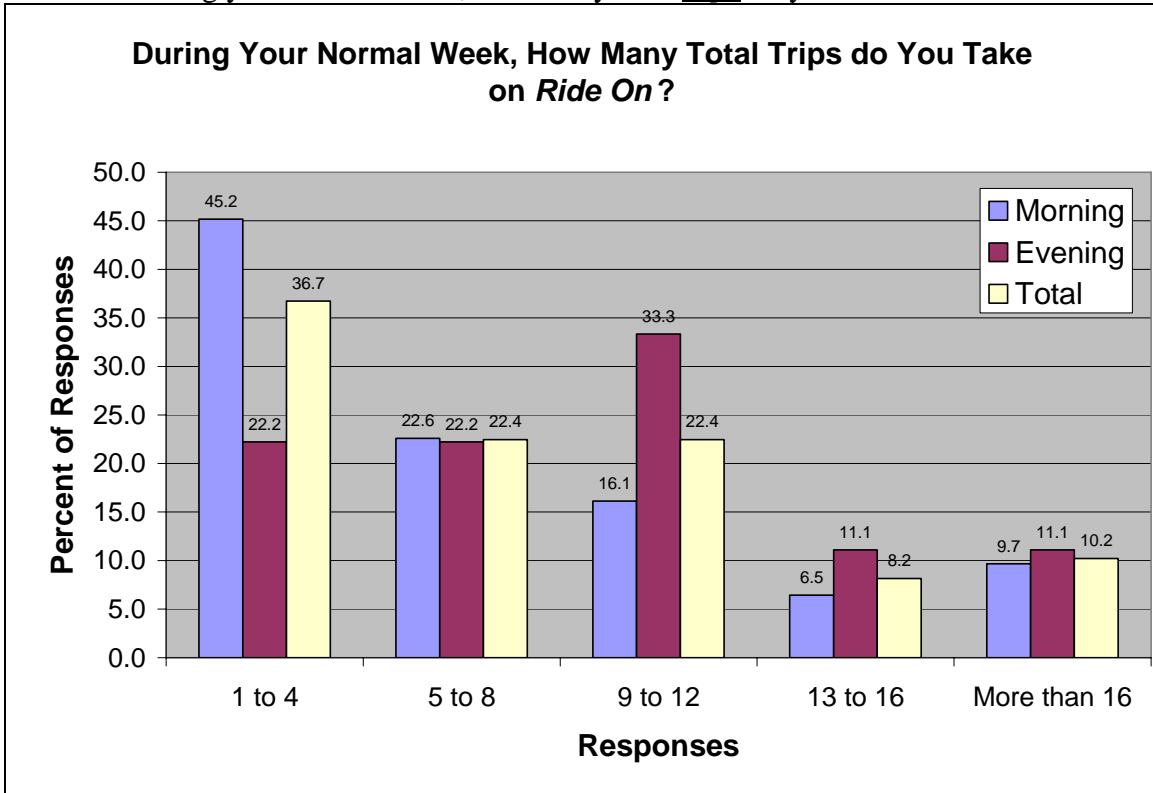
6. If you were not taking this Ride On late evening or early morning bus trip to get to work, how would you get to this job?



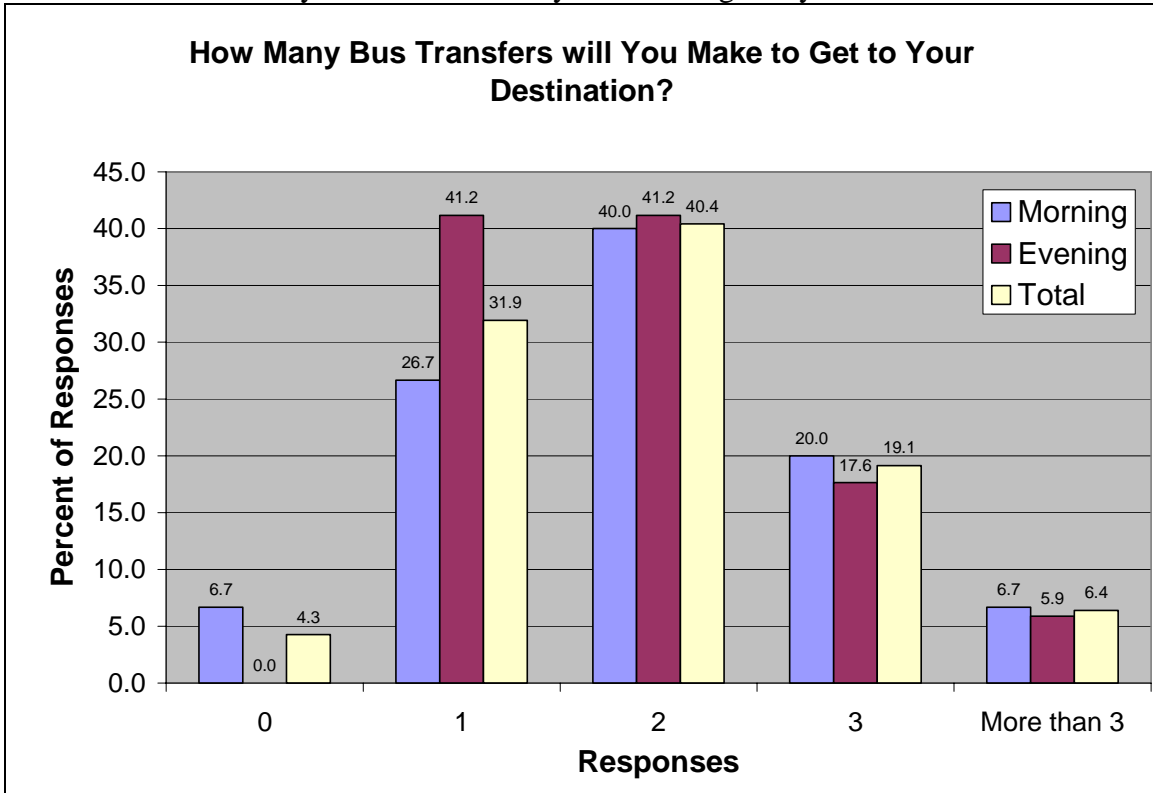
7. What time do you typically utilize the bus?



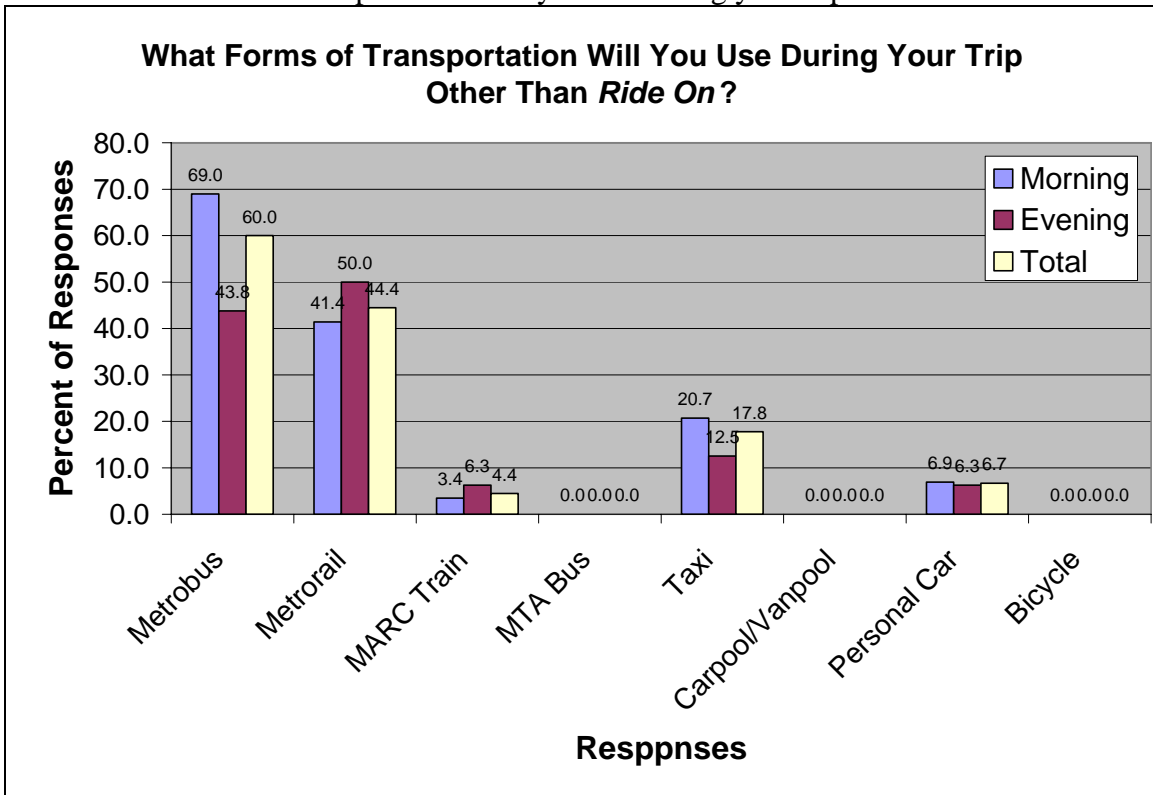
8. During your normal week, how many total *trips* do you take on Ride On?



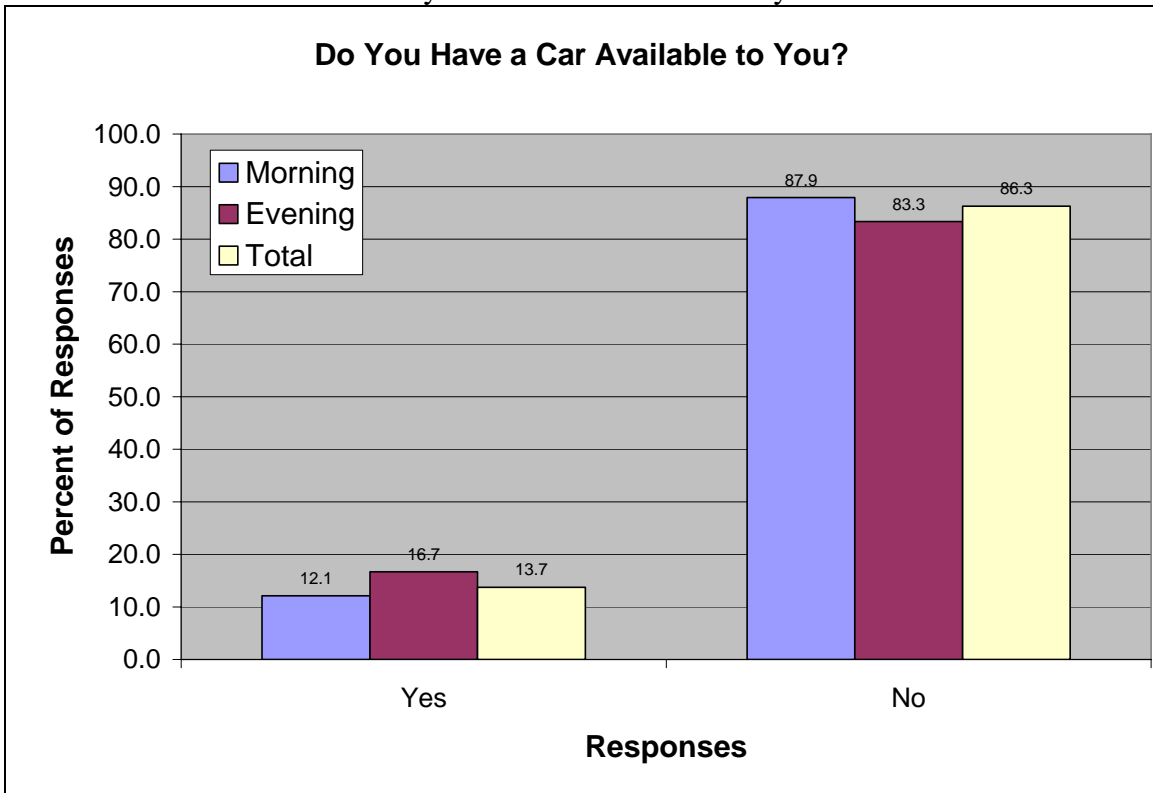
9. How many bus transfers will you make to get to your destination?



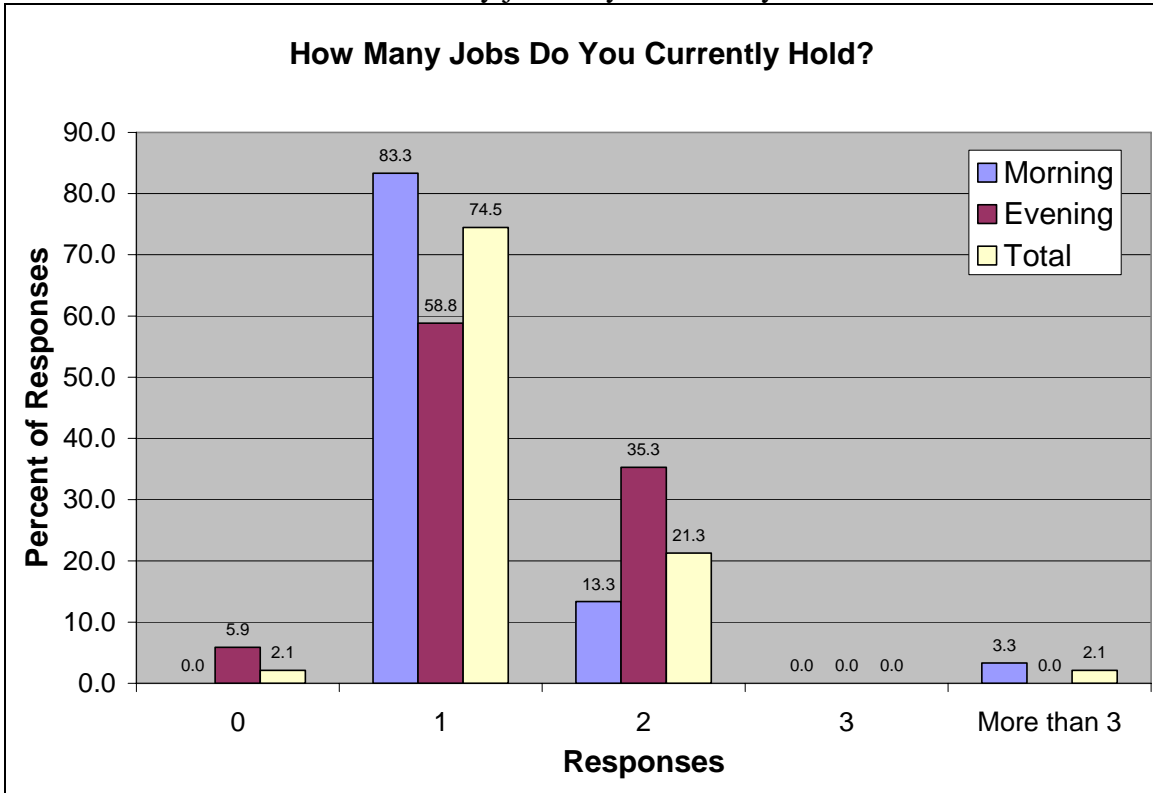
10. What forms of transportation will you use during your trip other than Ride On?



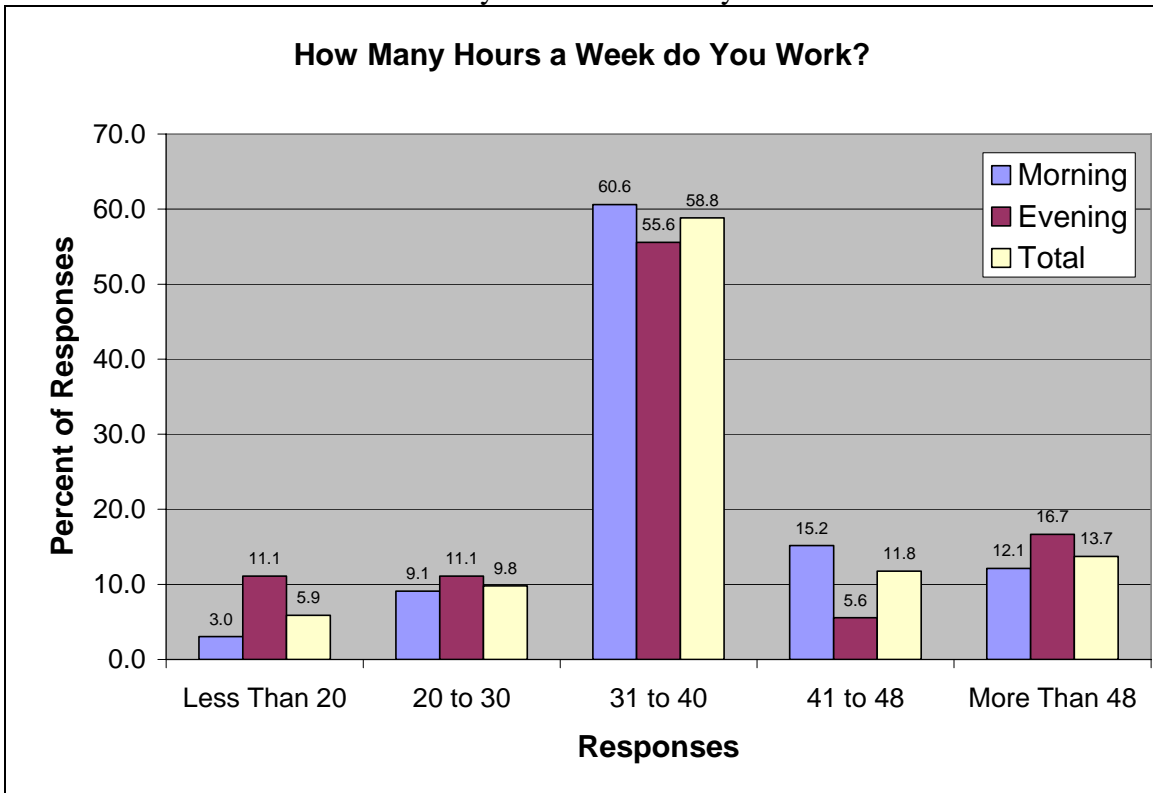
11. Do you have a car available to you?



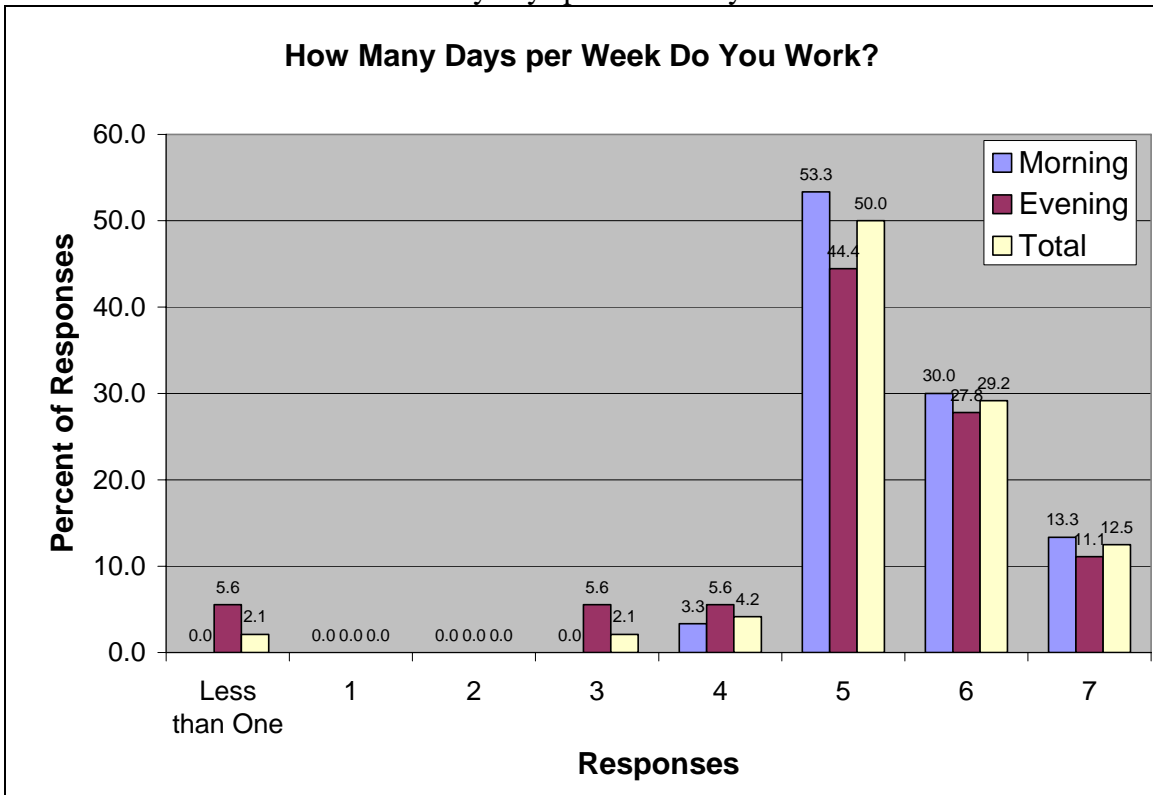
12. How many jobs do you currently hold?



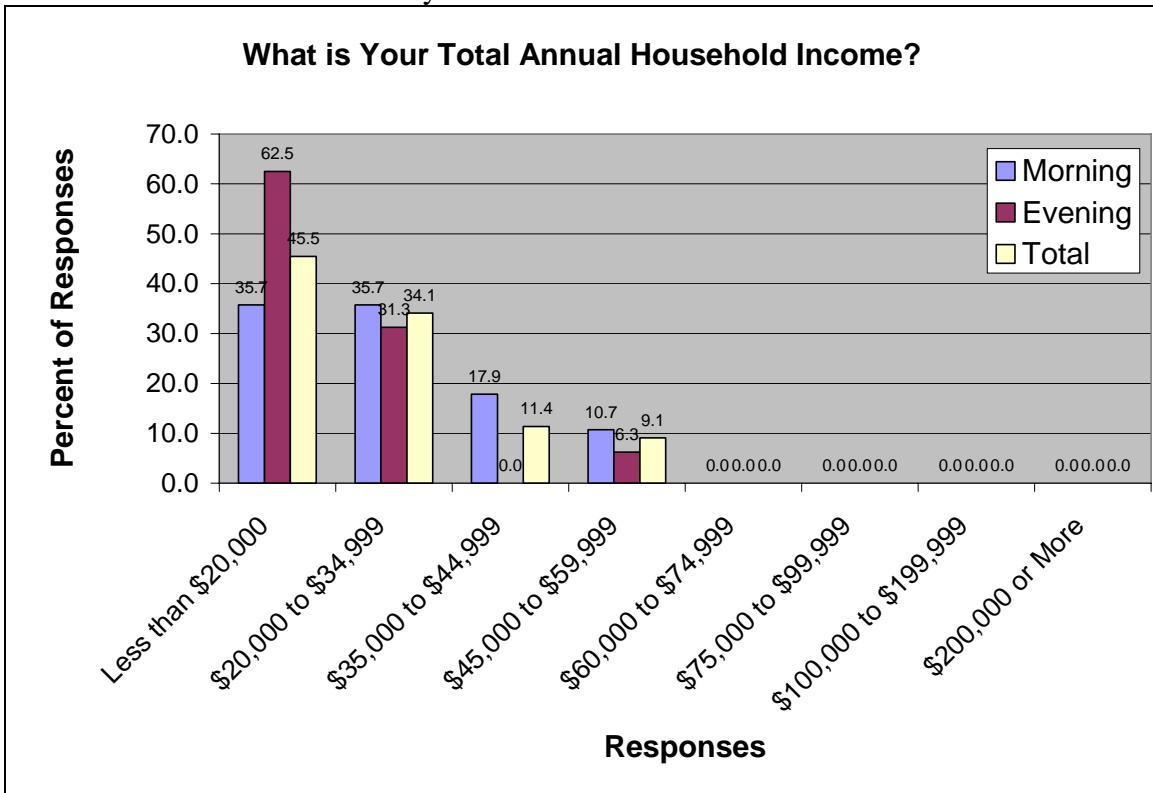
13. How many hours a week do you work?



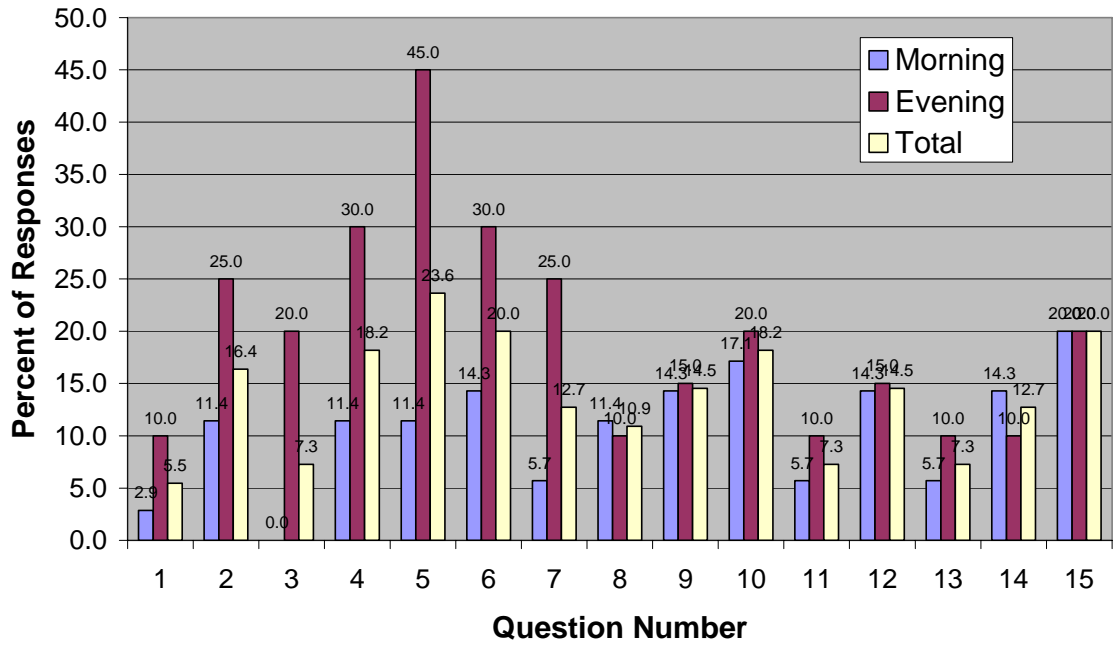
14. How many days per week do you work?



15. What is your total annual household income?



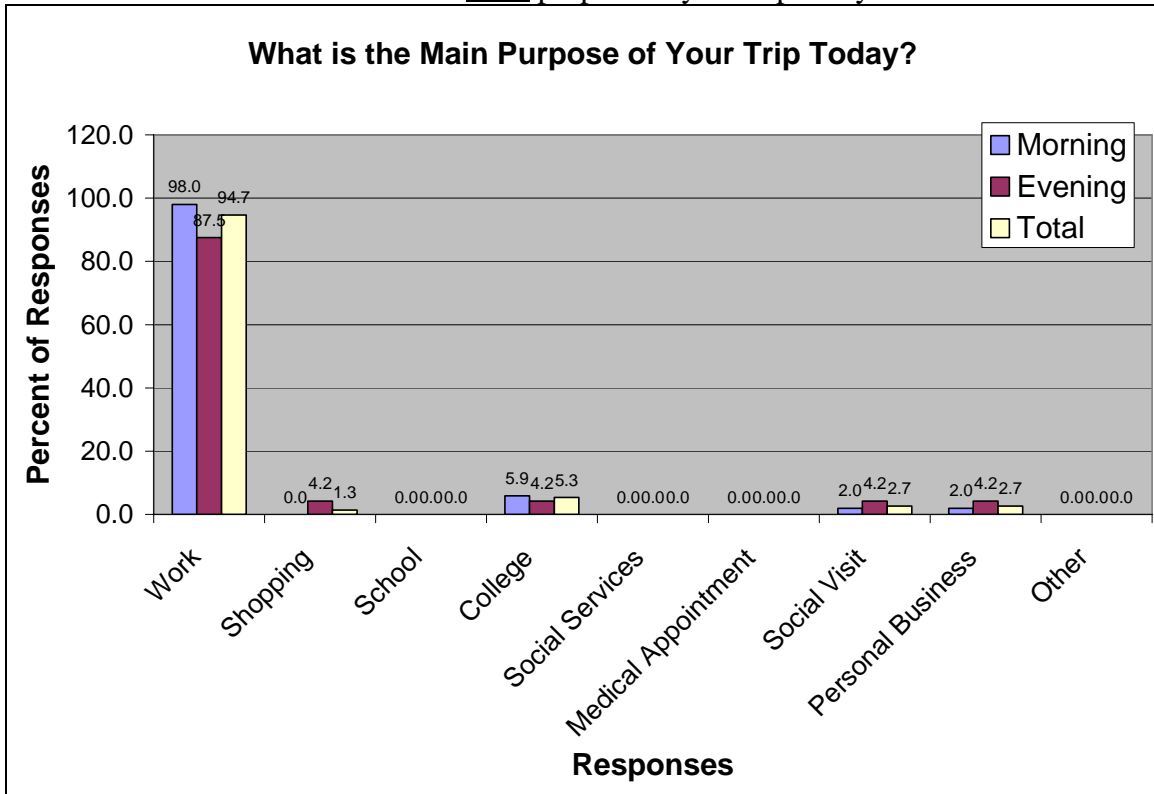
### Omitted Responses by Question



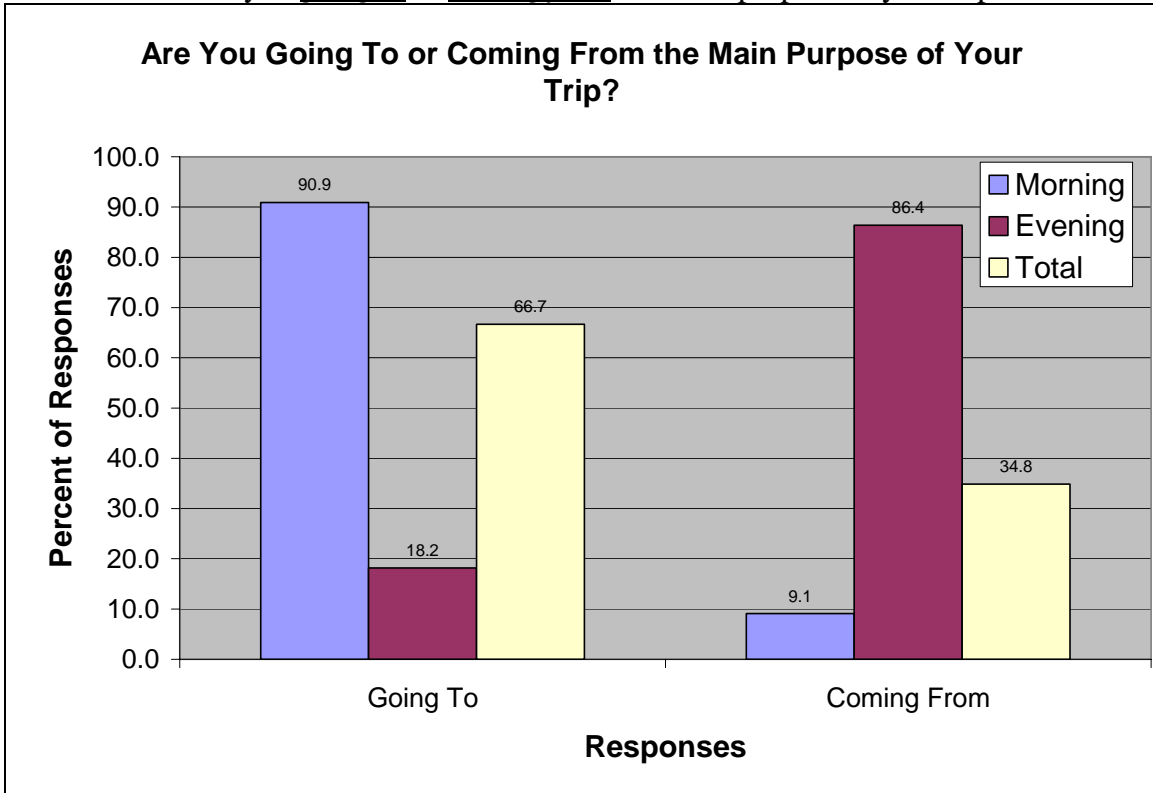
## Route 26

	Morning	Evening	Total
Spanish Surveys	21	7	28
Total Responses	53	25	78
Total Riders	102	39	141

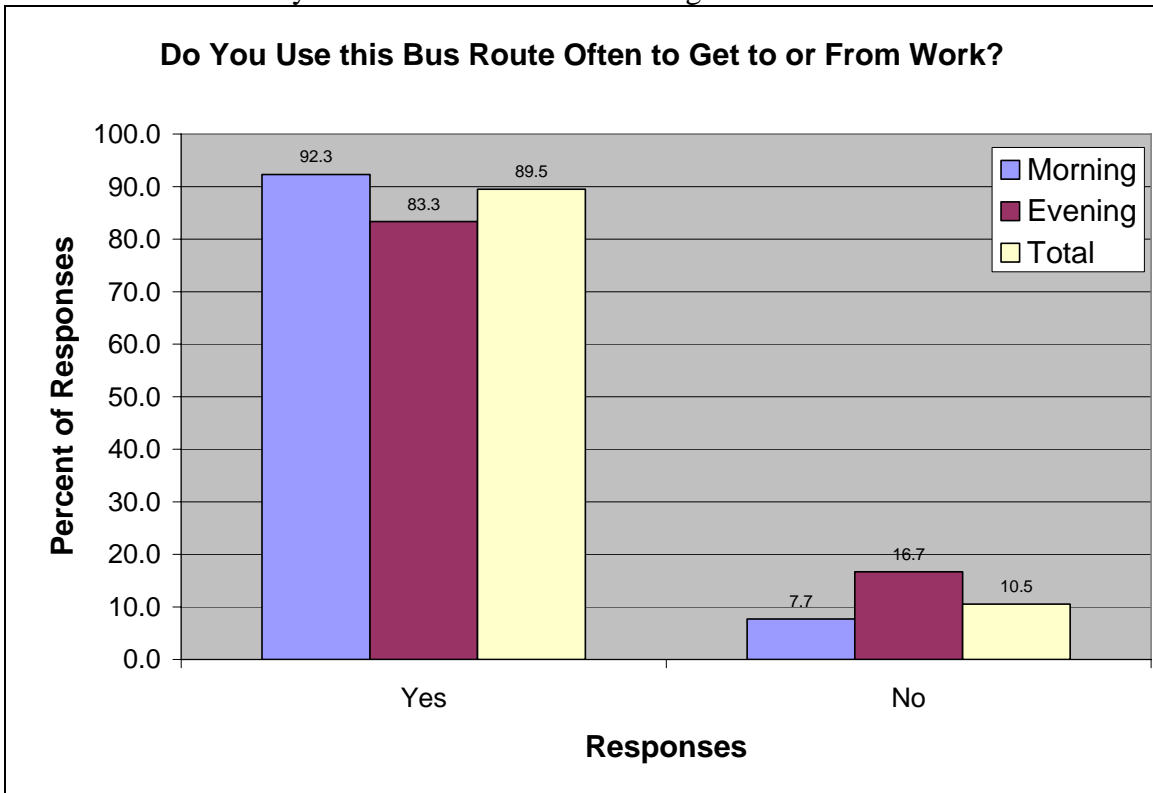
1. What is the main purpose of your trip today?



2. Are you *going to* or *coming from* the main purpose of your trip?

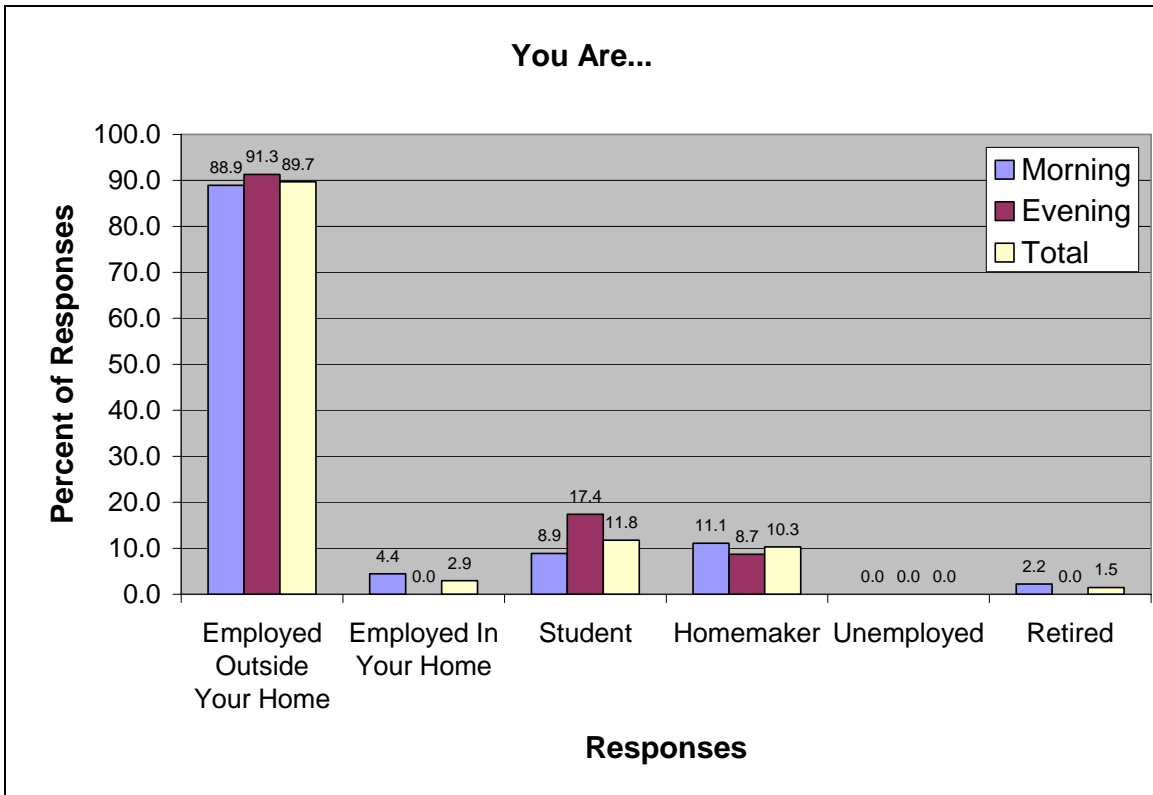


3. Do you use this bus route often to get to or from work?

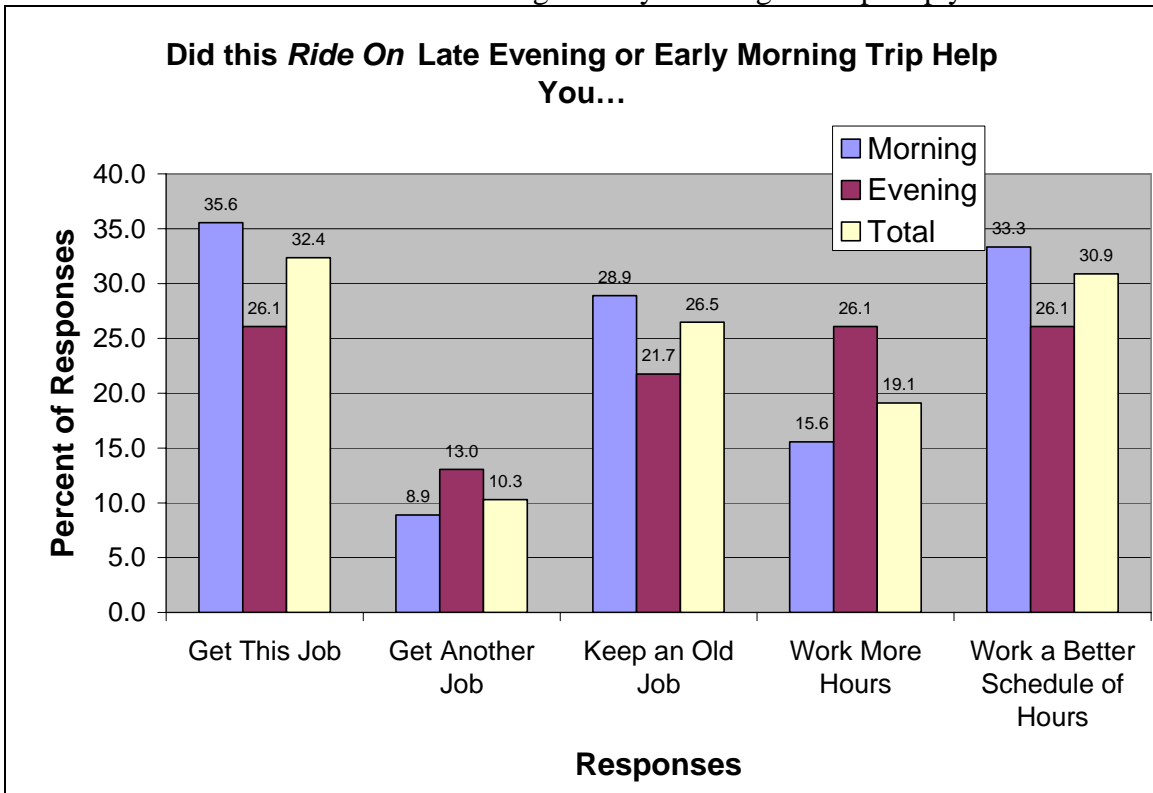




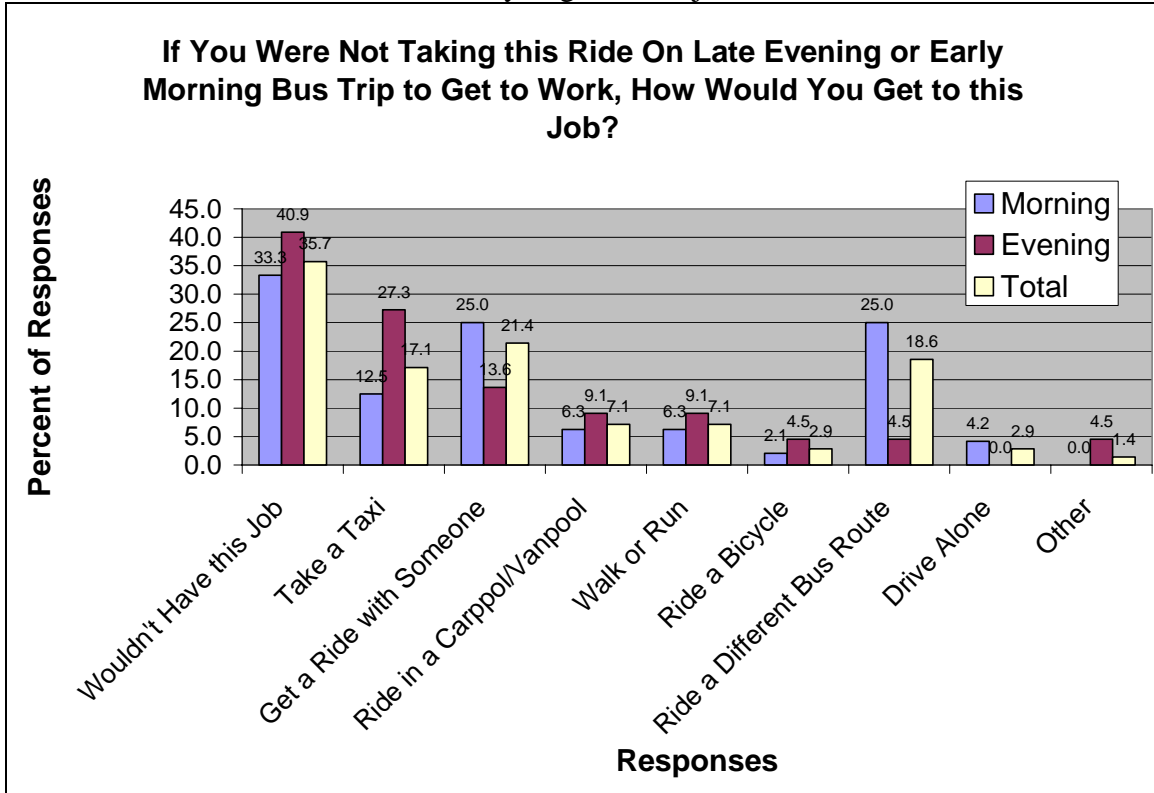
4. You are:



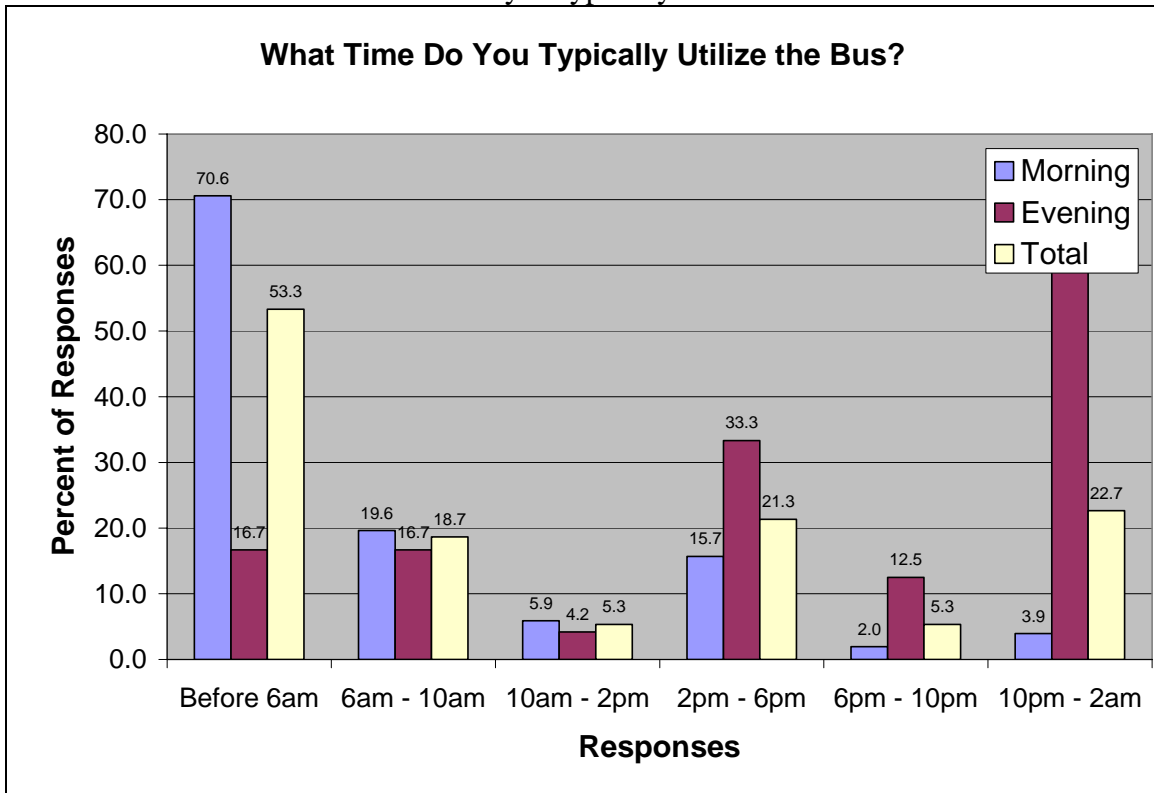
5. Did this Ride On late evening or early morning bus trip help you...



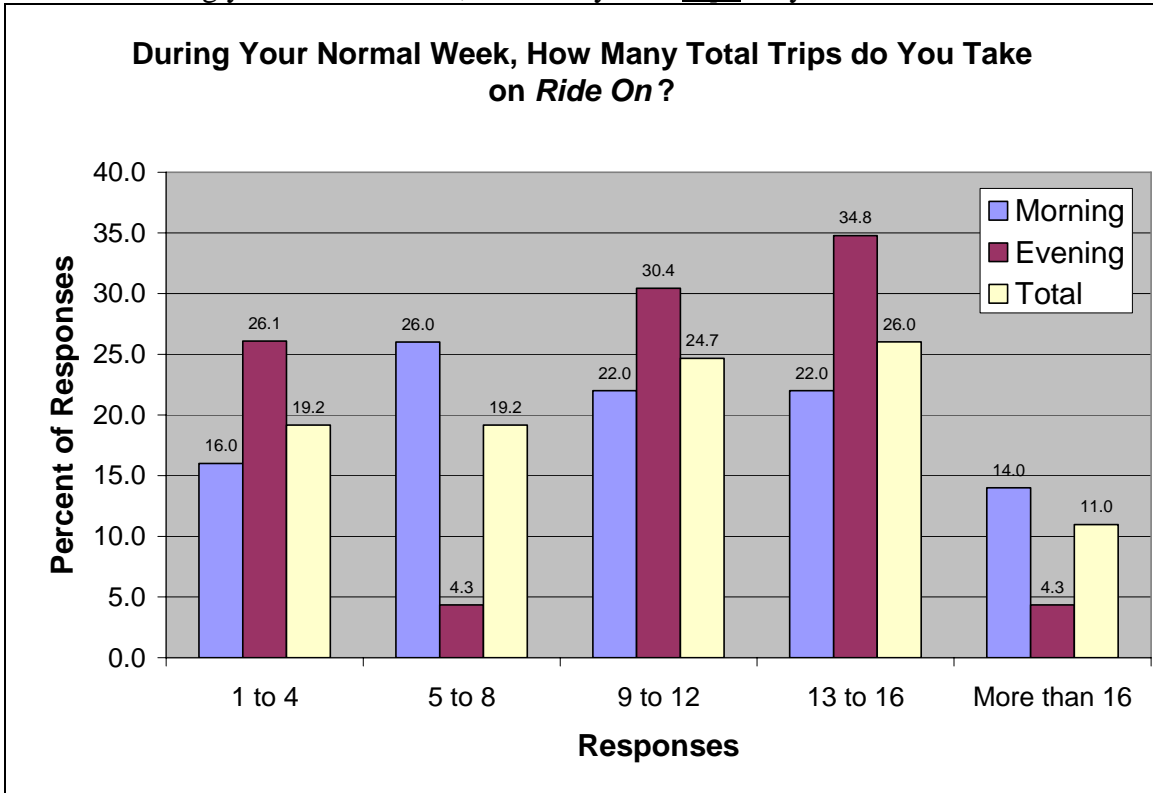
6. If you were not taking this Ride On late evening or early morning bus trip to get to work, how would you get to this job?



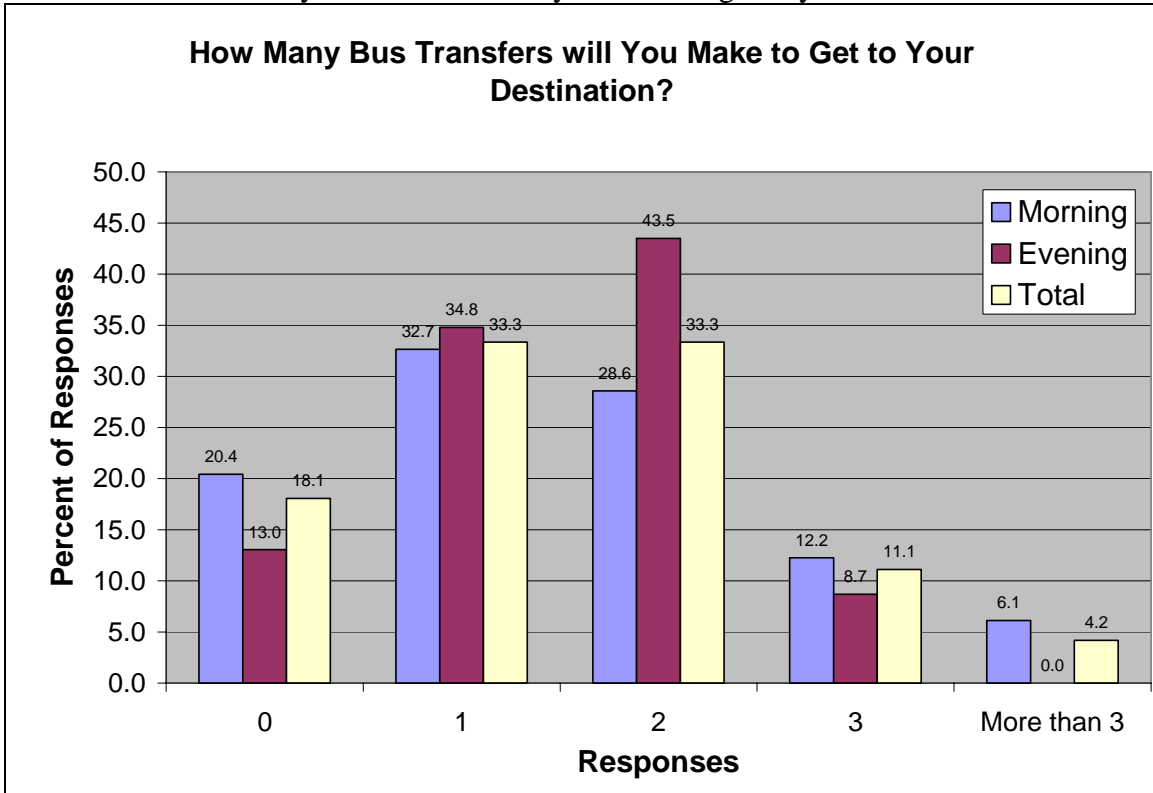
7. What time do you typically utilize the bus?



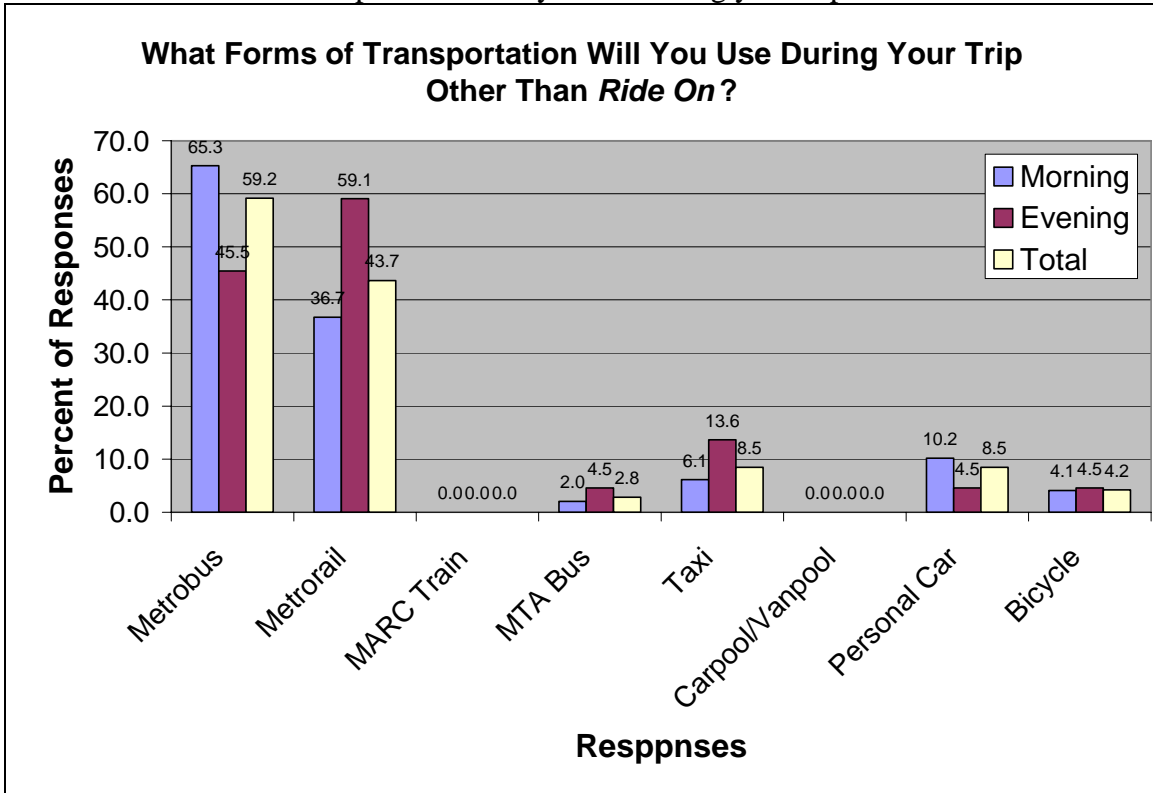
8. During your normal week, how many total *trips* do you take on Ride On?



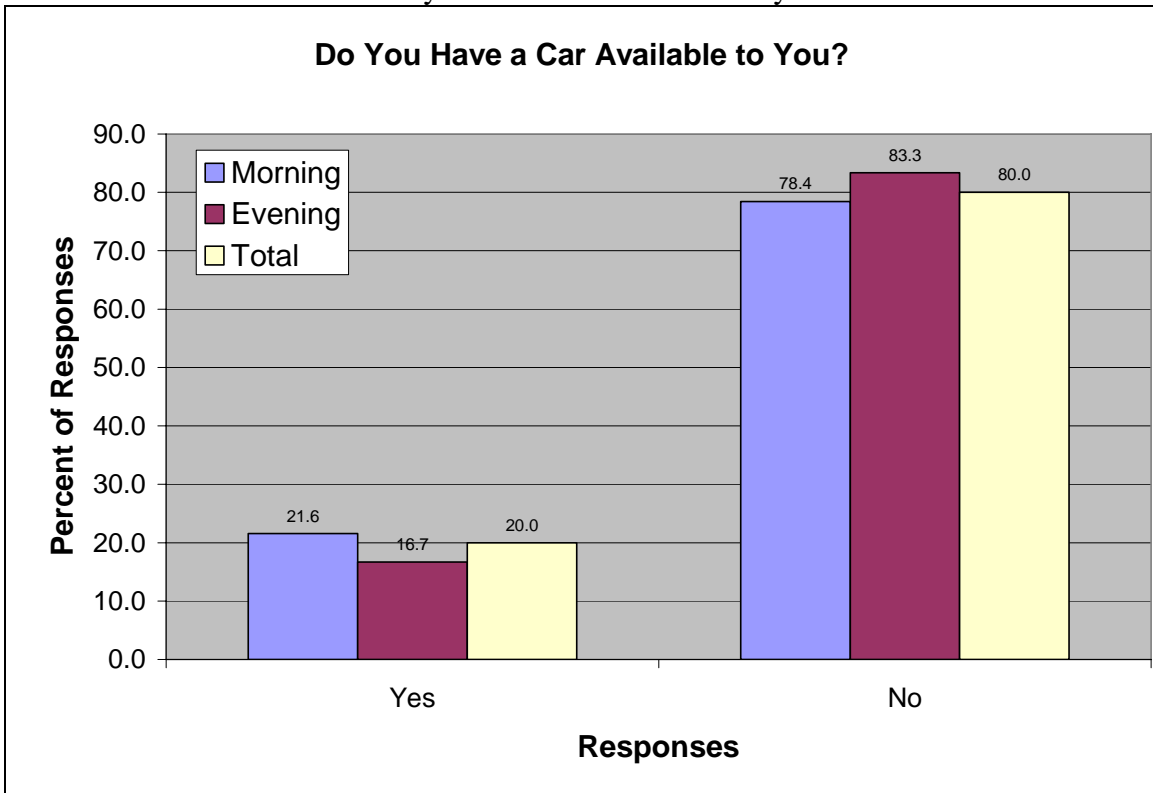
9. How many bus transfers will you make to get to your destination?



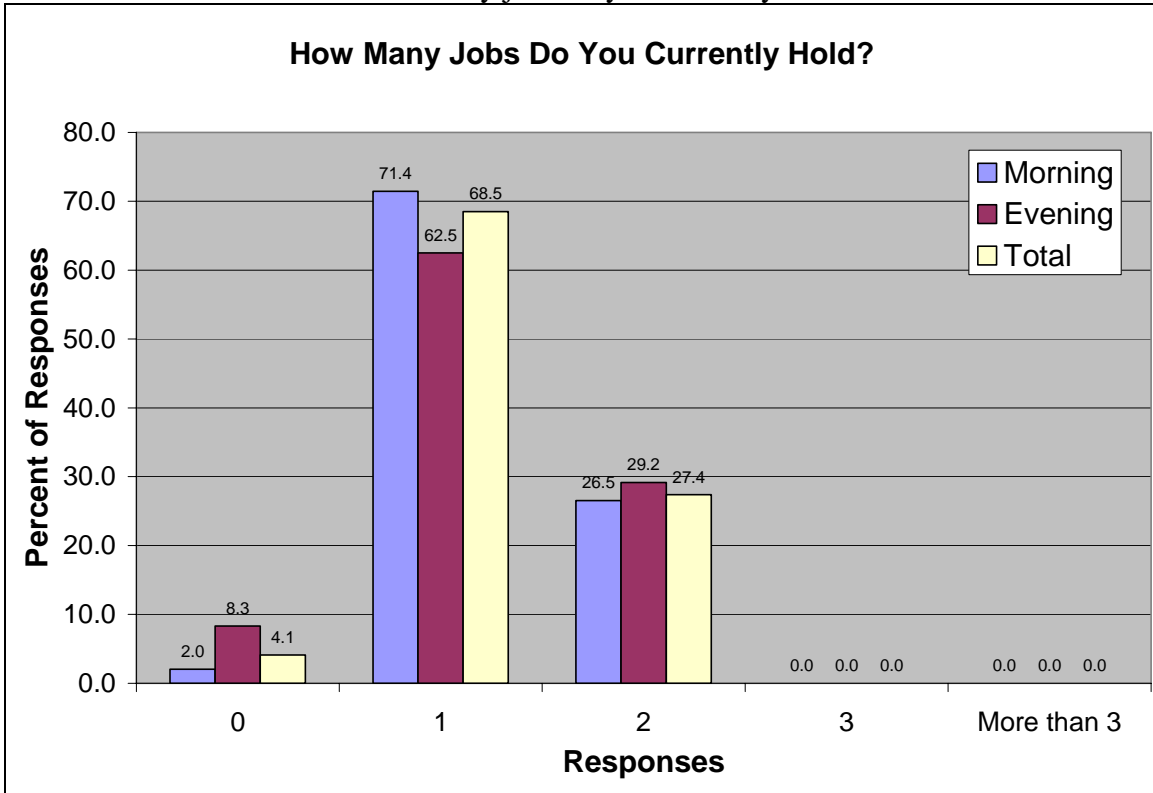
10. What forms of transportation will you use during your trip other than Ride On?



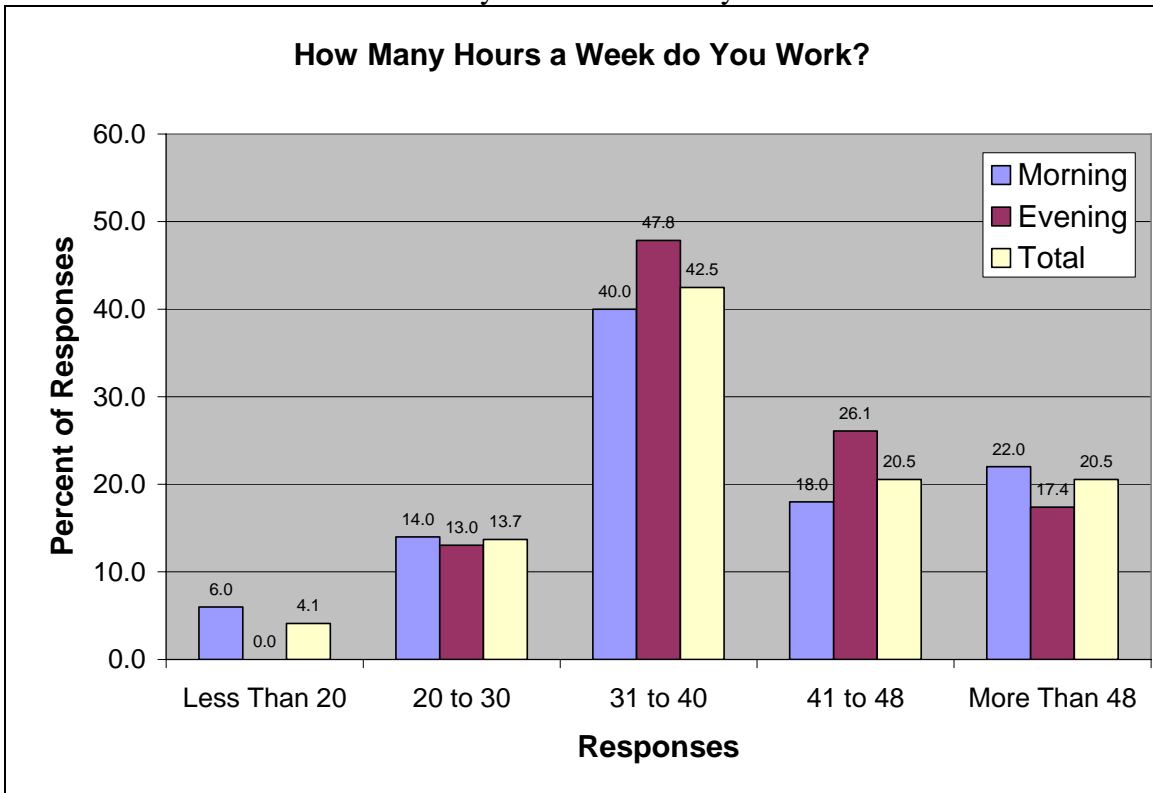
11. Do you have a car available to you?



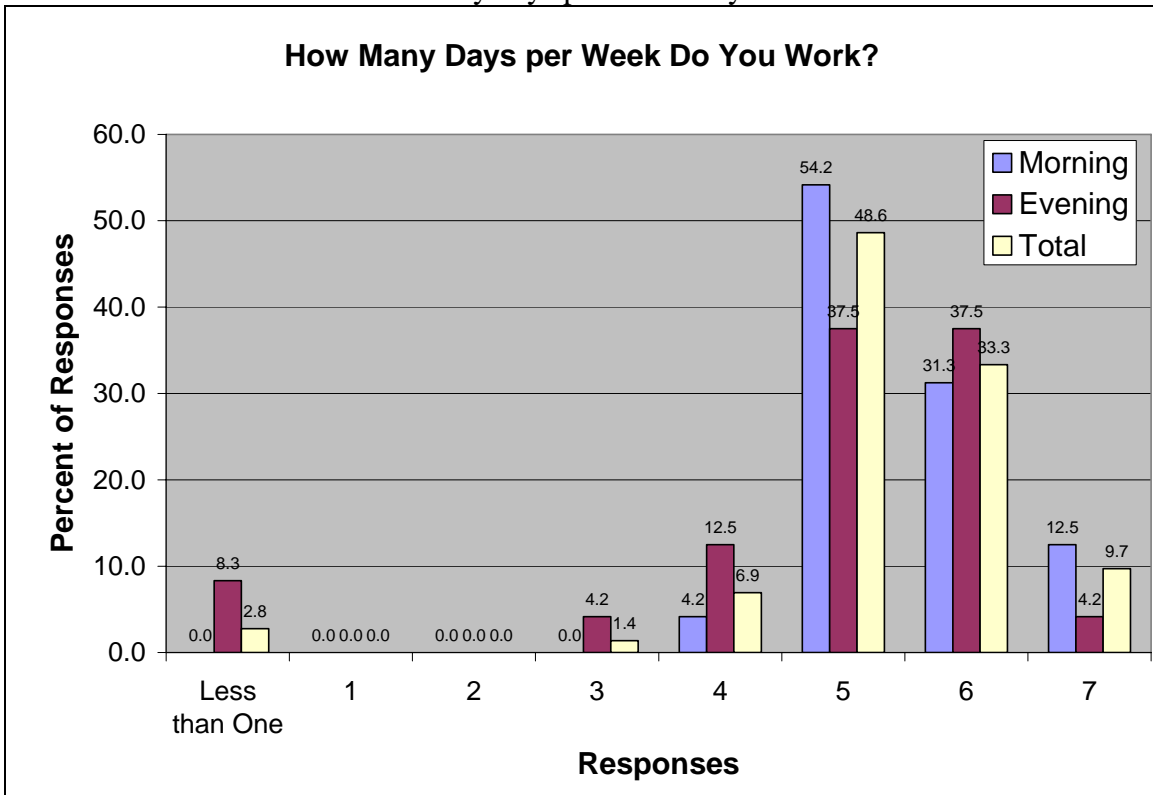
12. How many jobs do you currently hold?



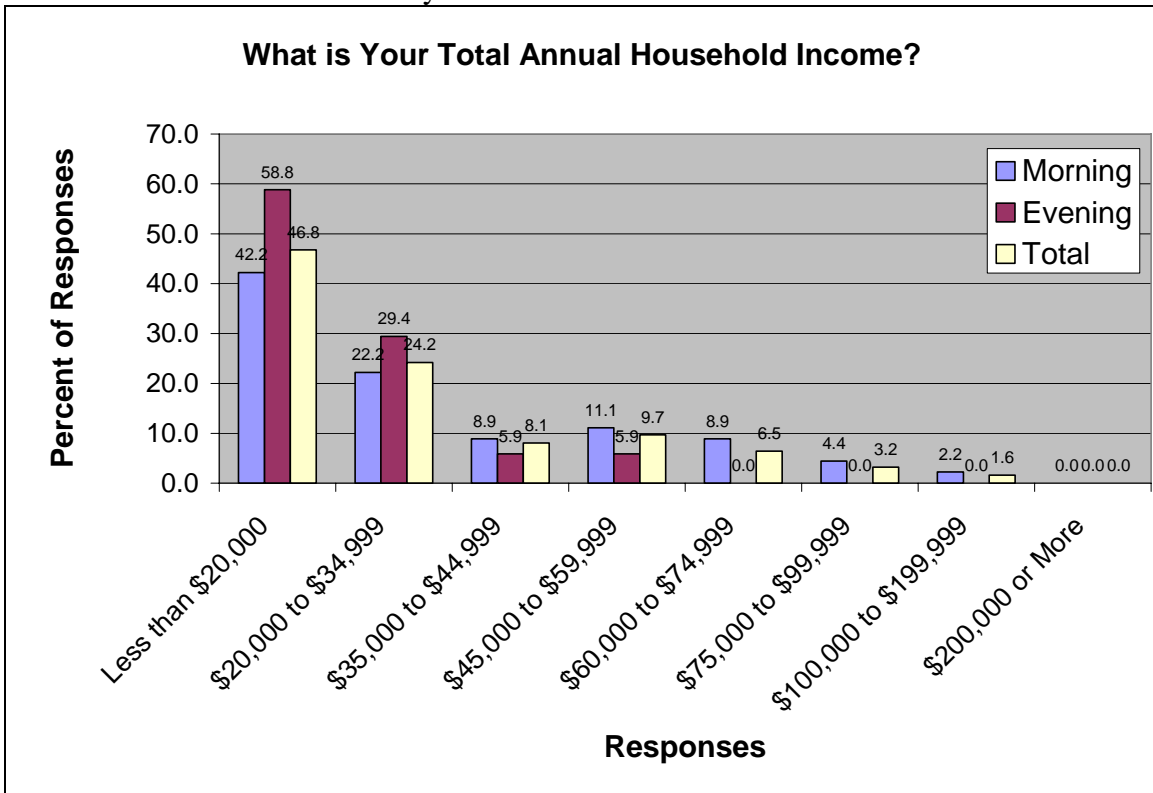
13. How many hours a week do you work?



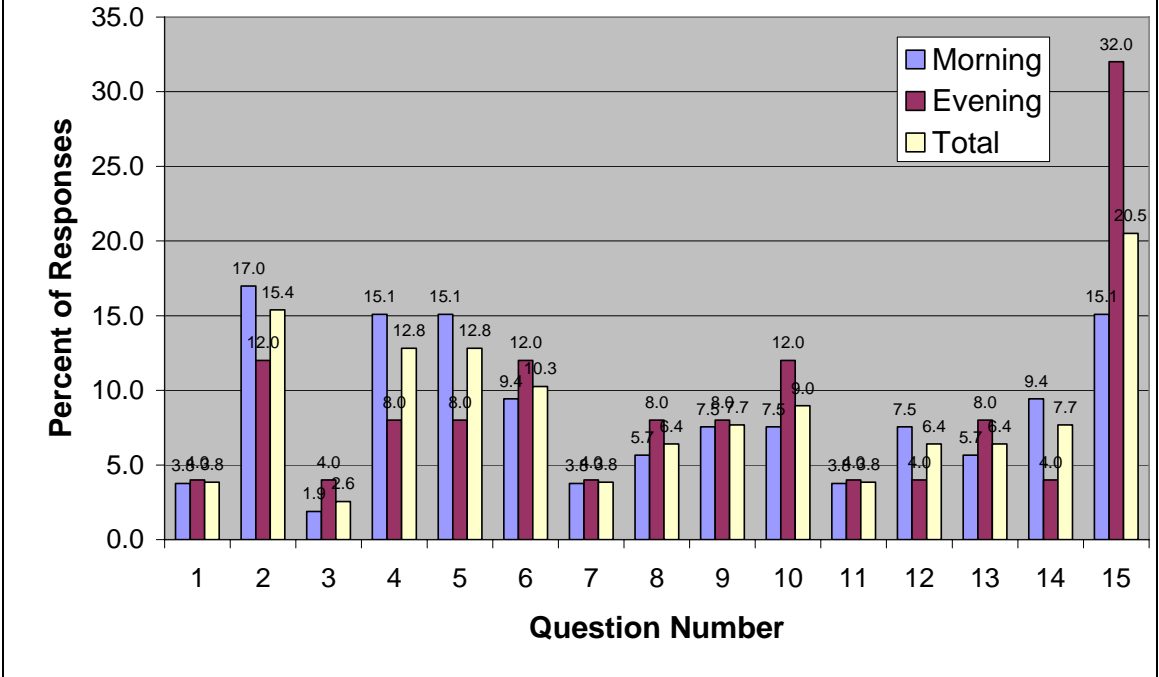
14. How many days per week do you work?



15. What is your total annual household income?



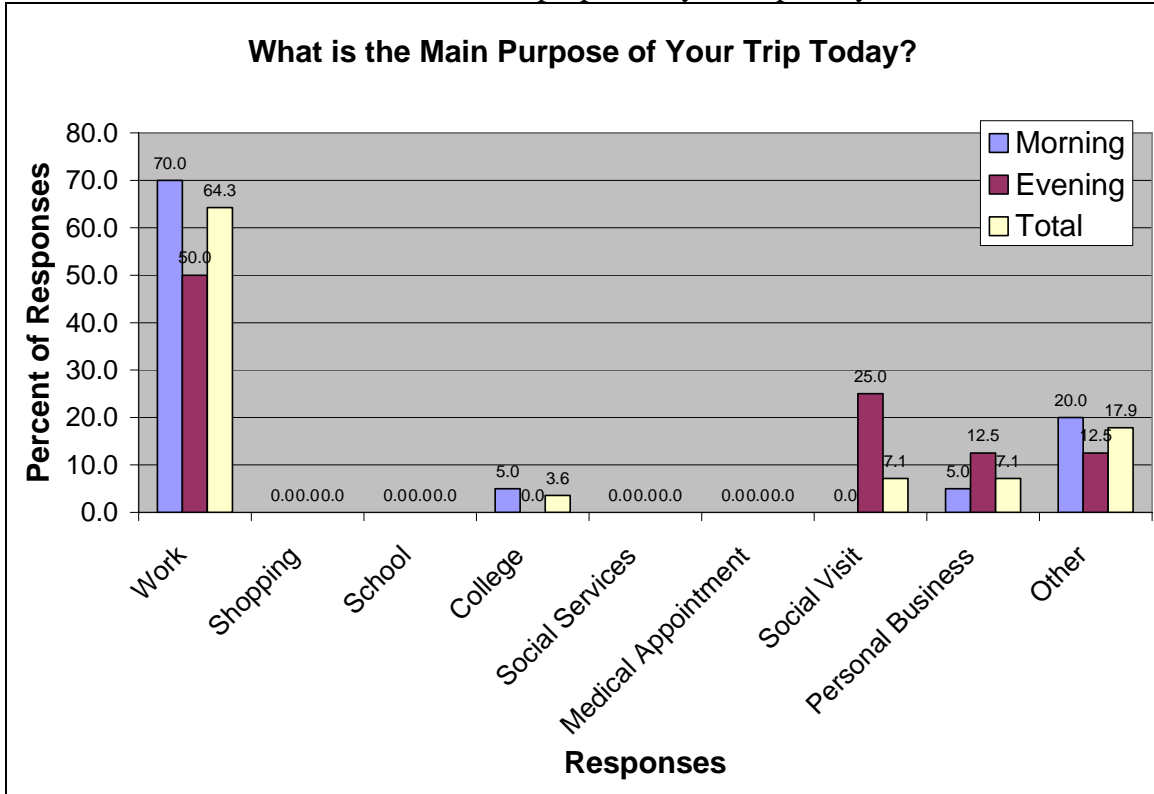
Omitted Responses by Question



# Route 46

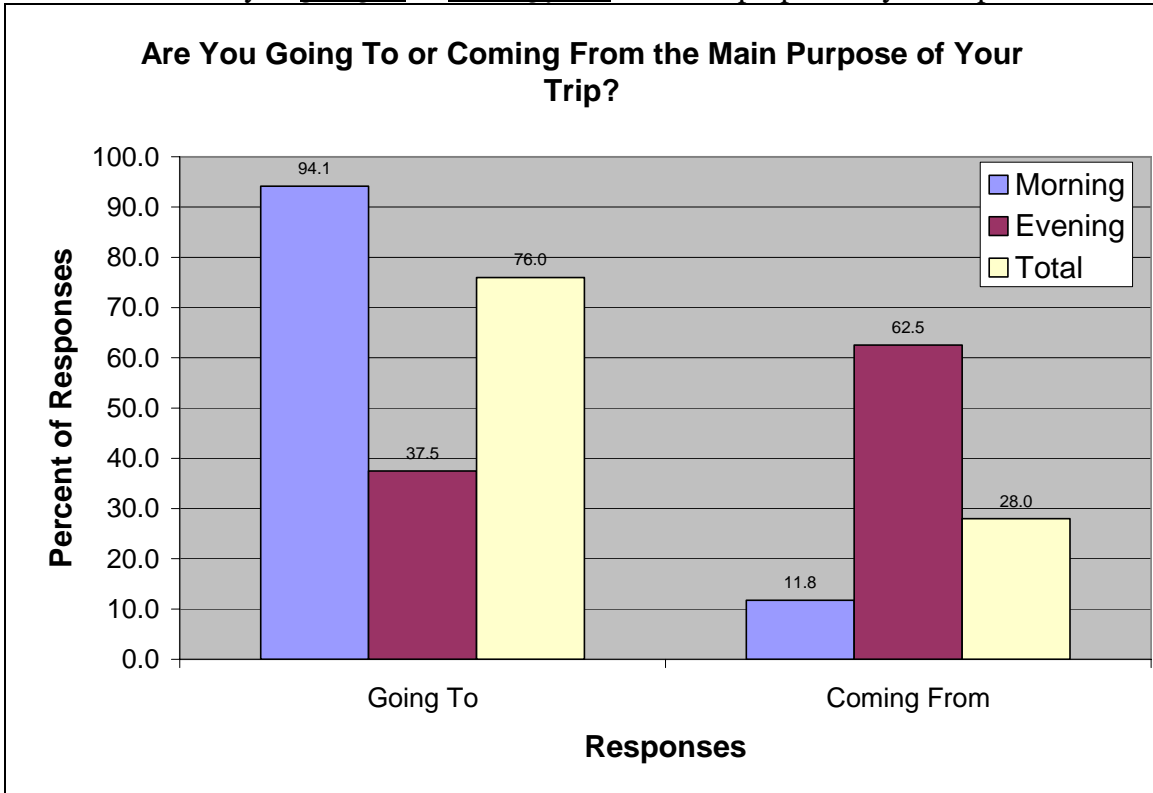
	Morning	Evening	Total
Spanish Surveys	6	1	7
Total Responses	20	8	28
Total Riders	47	23	70

1. What is the main purpose of your trip today?

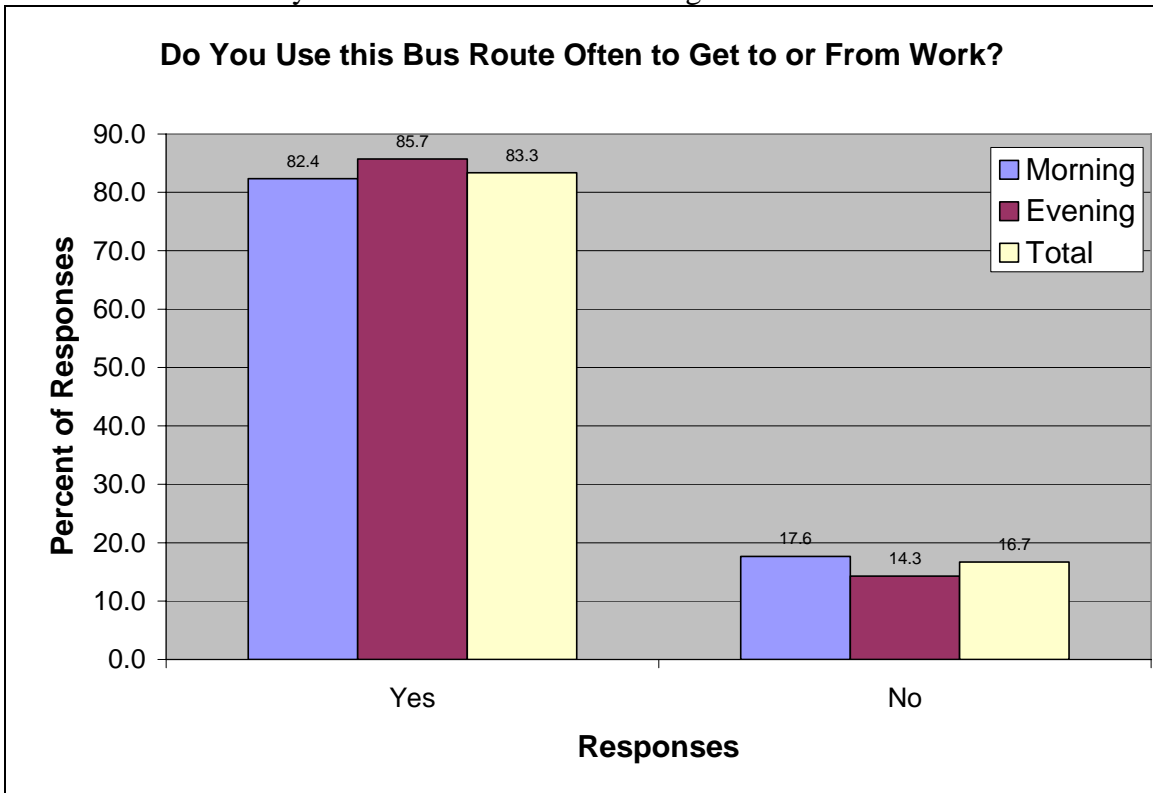




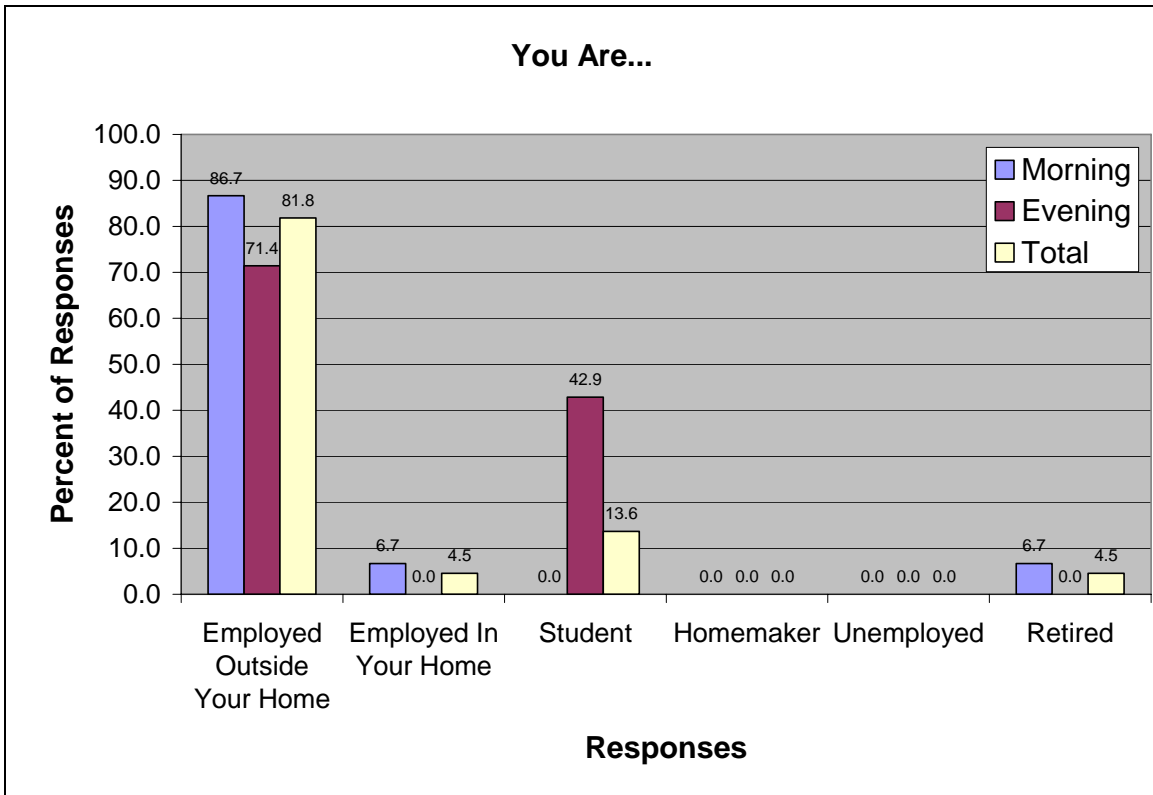
2. Are you *going to* or *coming from* the main purpose of your trip?



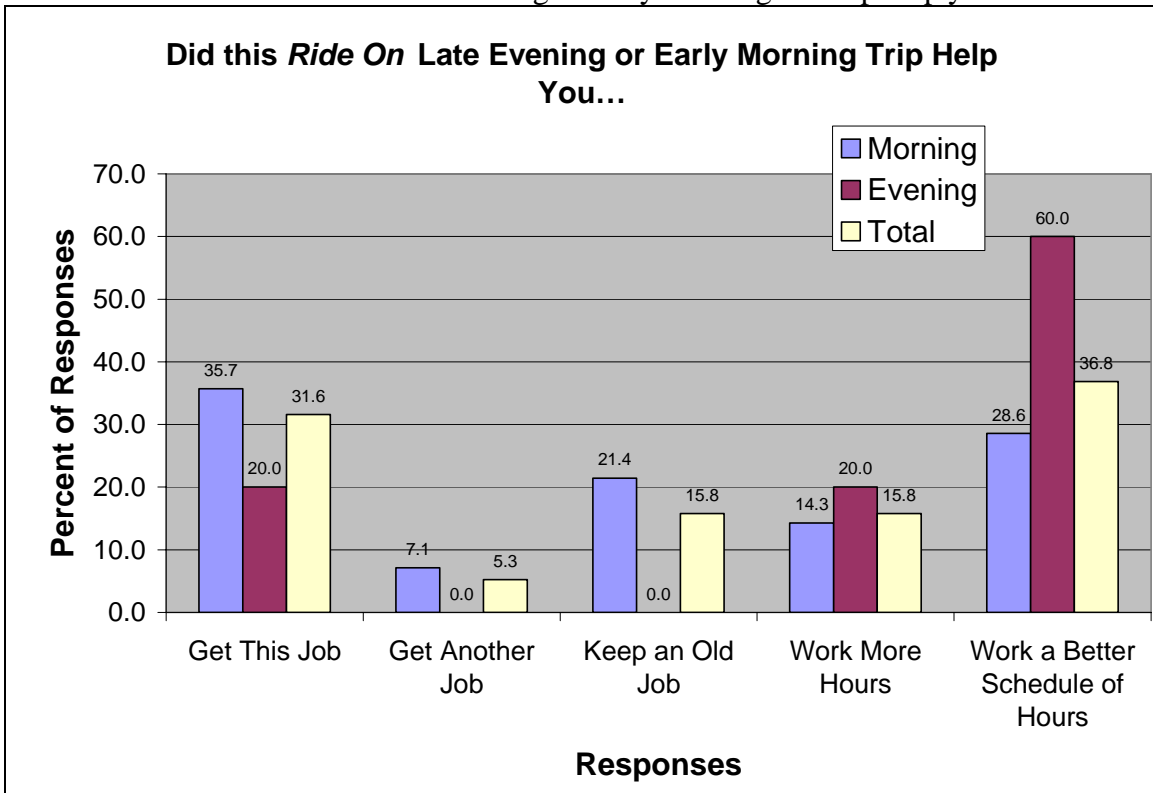
3. Do you use this bus route often to get to or from work?



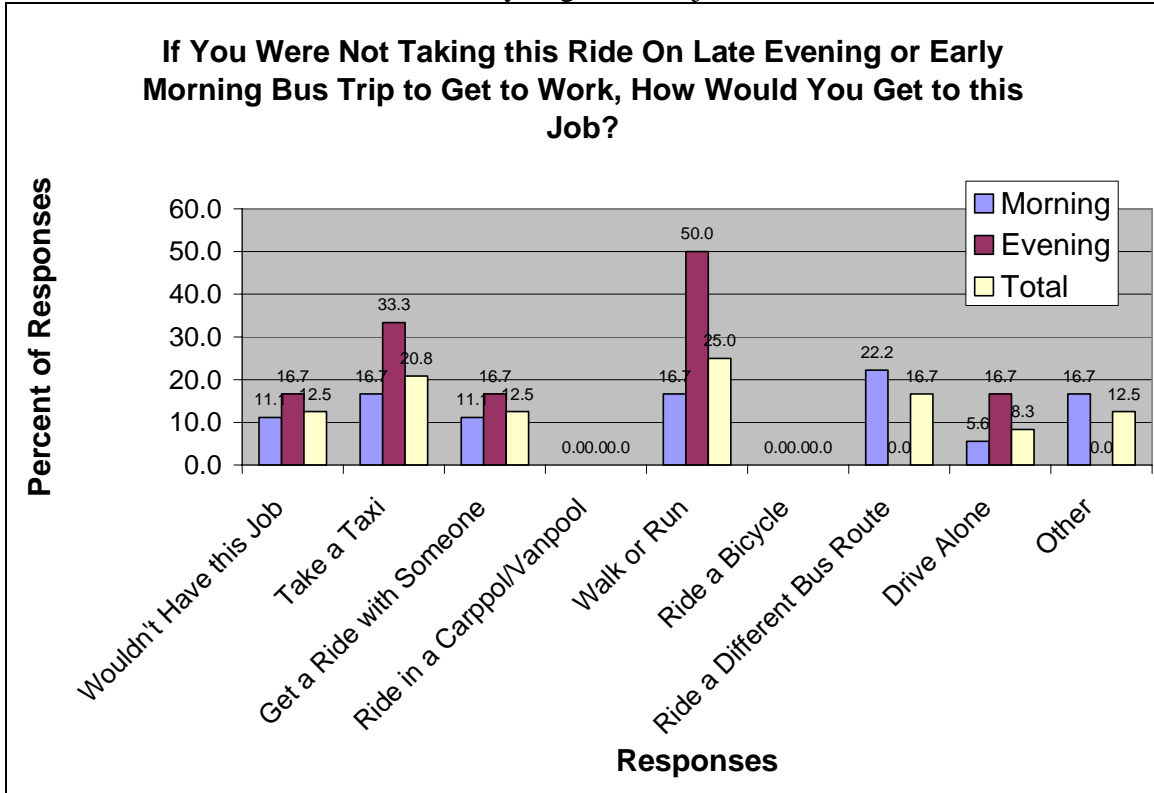
4. You are:



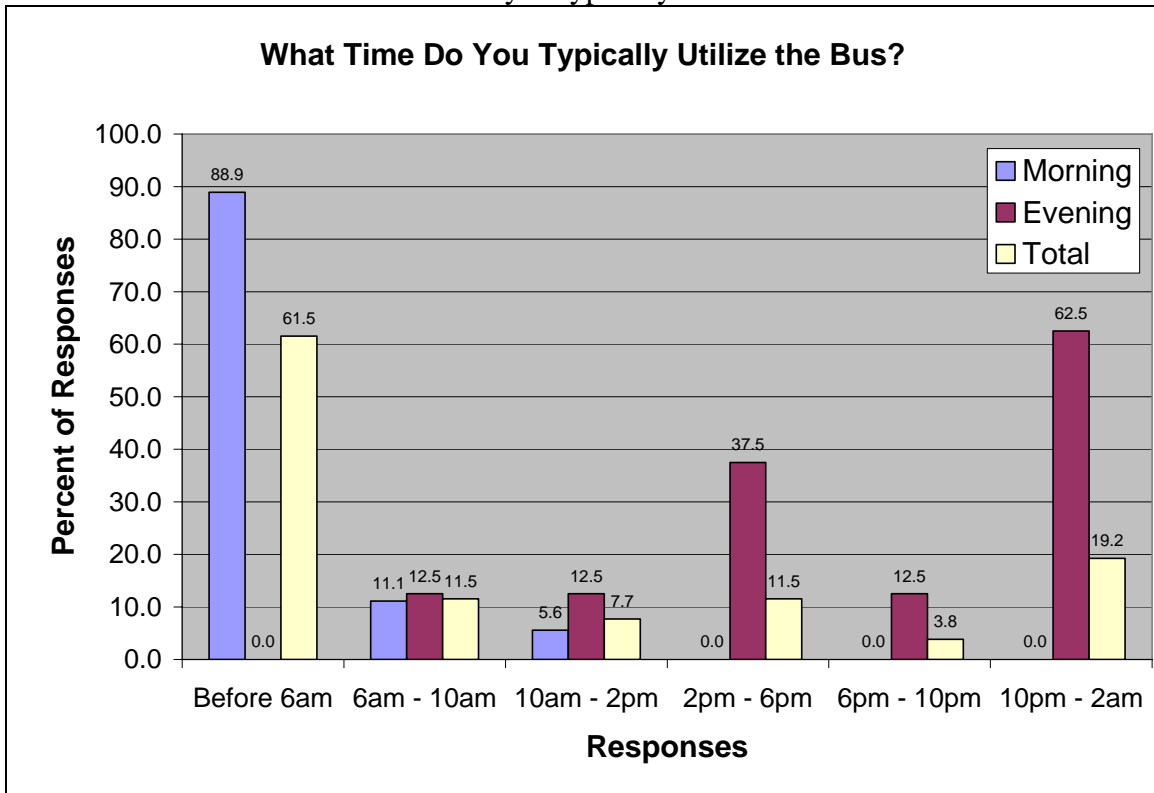
5. Did this Ride On late evening or early morning bus trip help you...



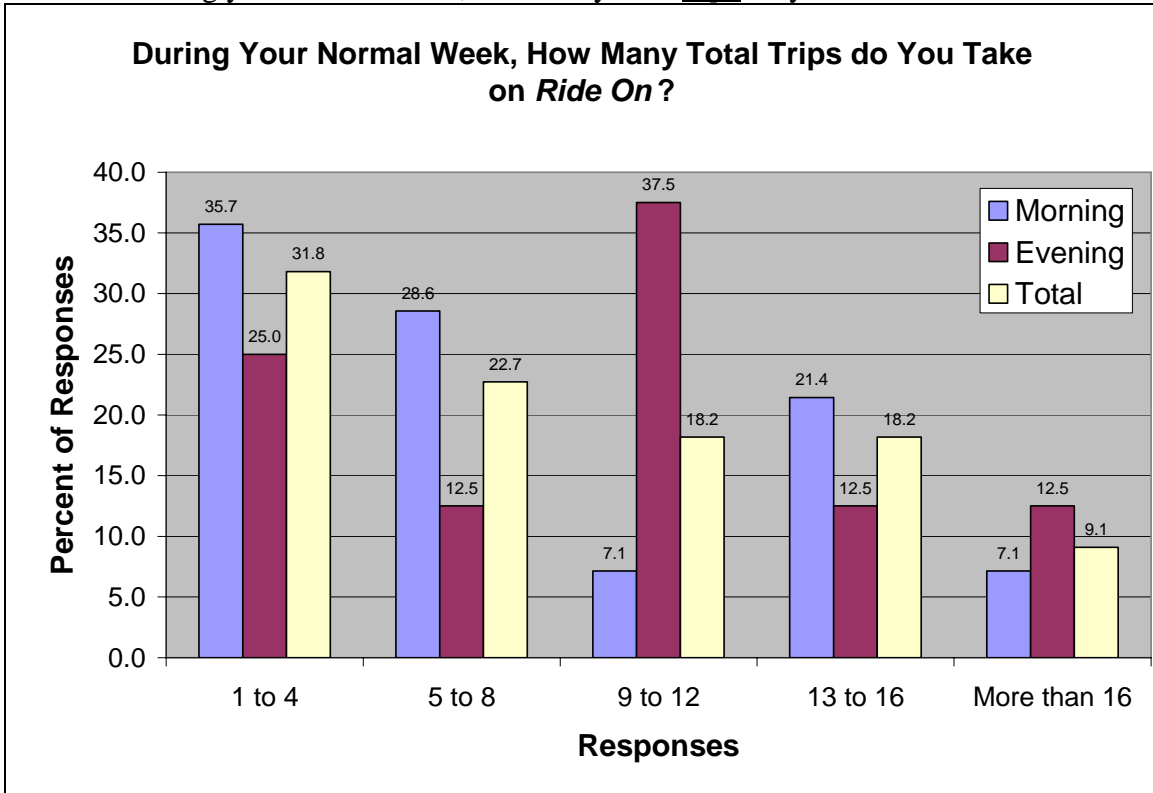
6. If you were not taking this Ride On late evening or early morning bus trip to get to work, how would you get to this job?



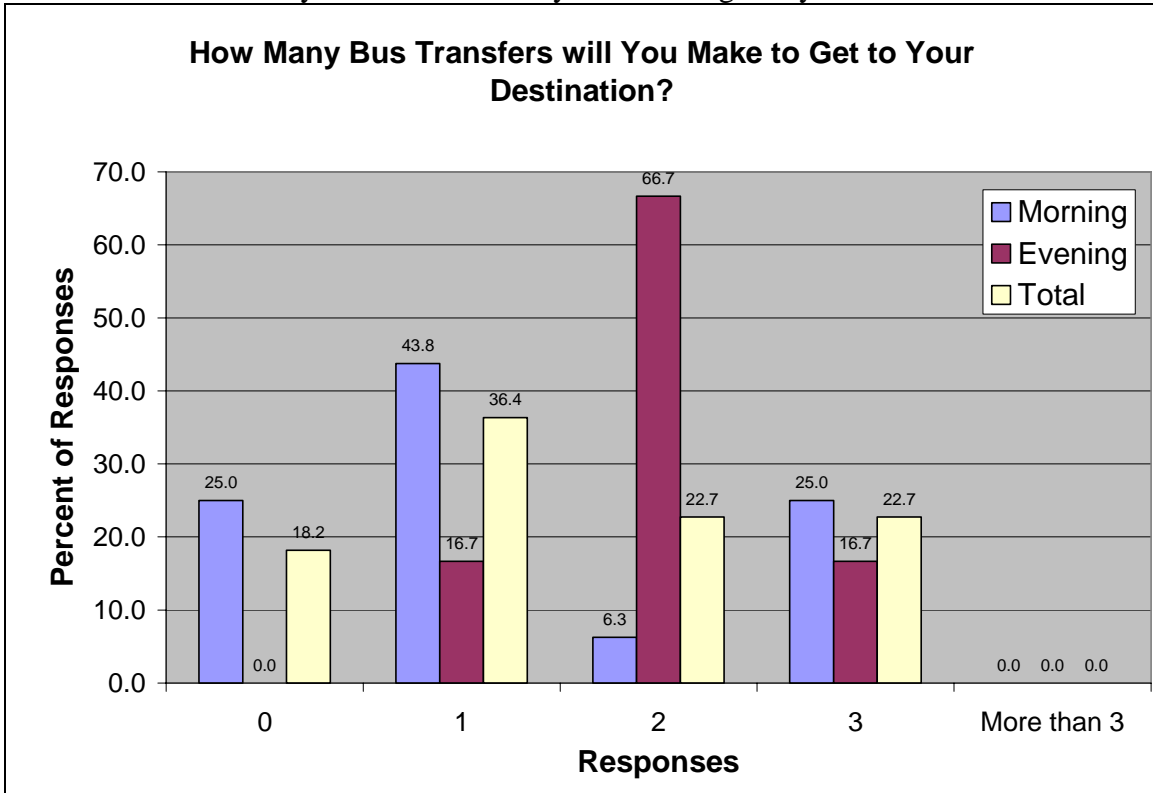
7. What time do you typically utilize the bus?



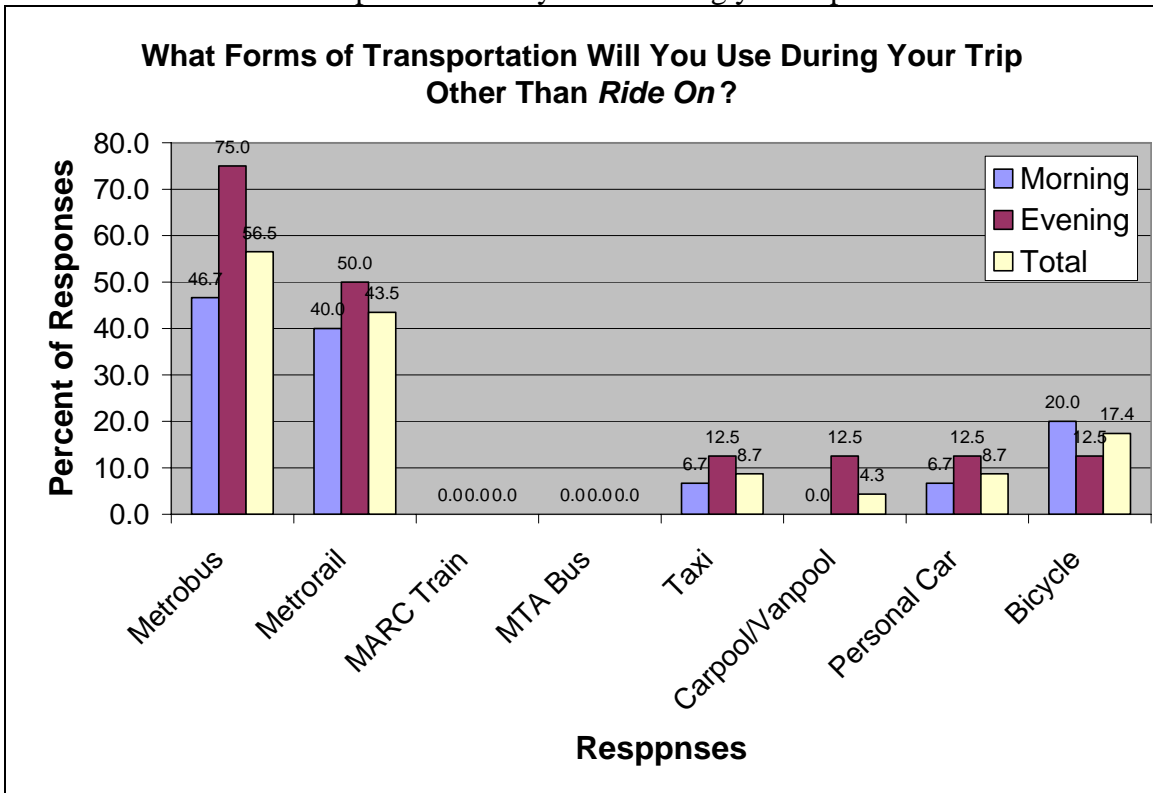
8. During your normal week, how many total *trips* do you take on Ride On?



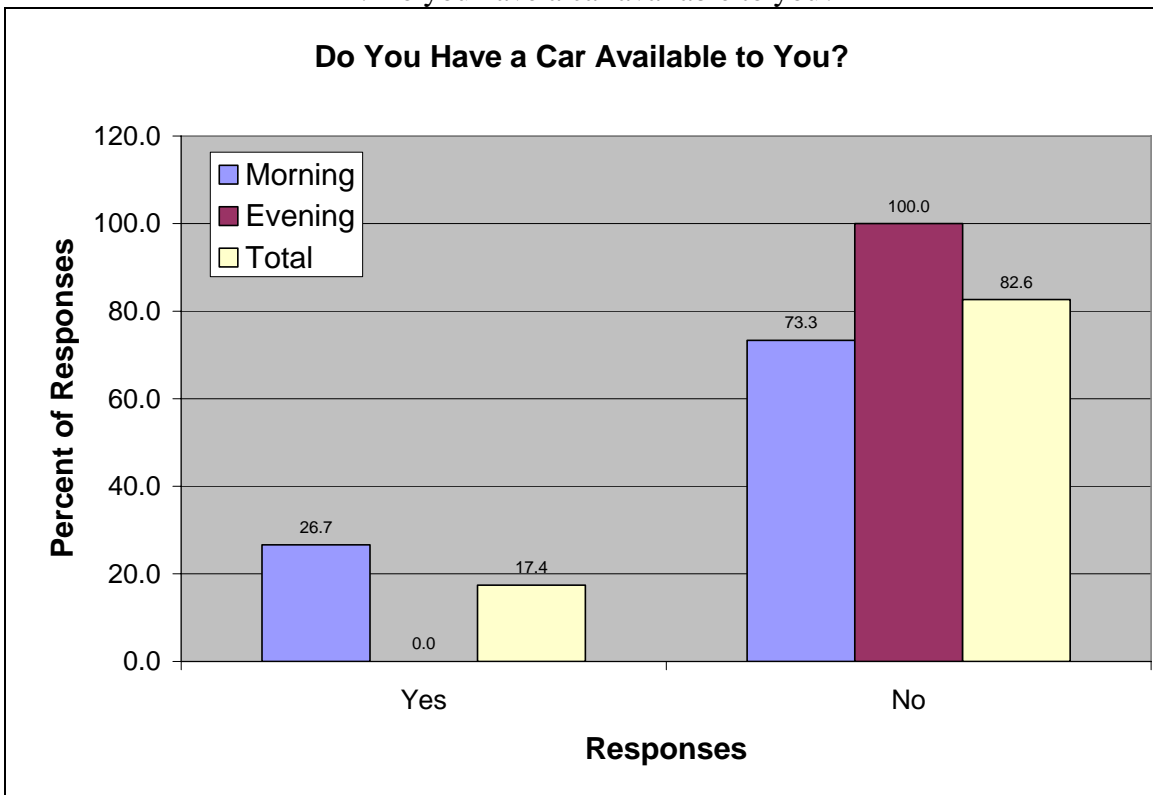
9. How many bus transfers will you make to get to your destination?



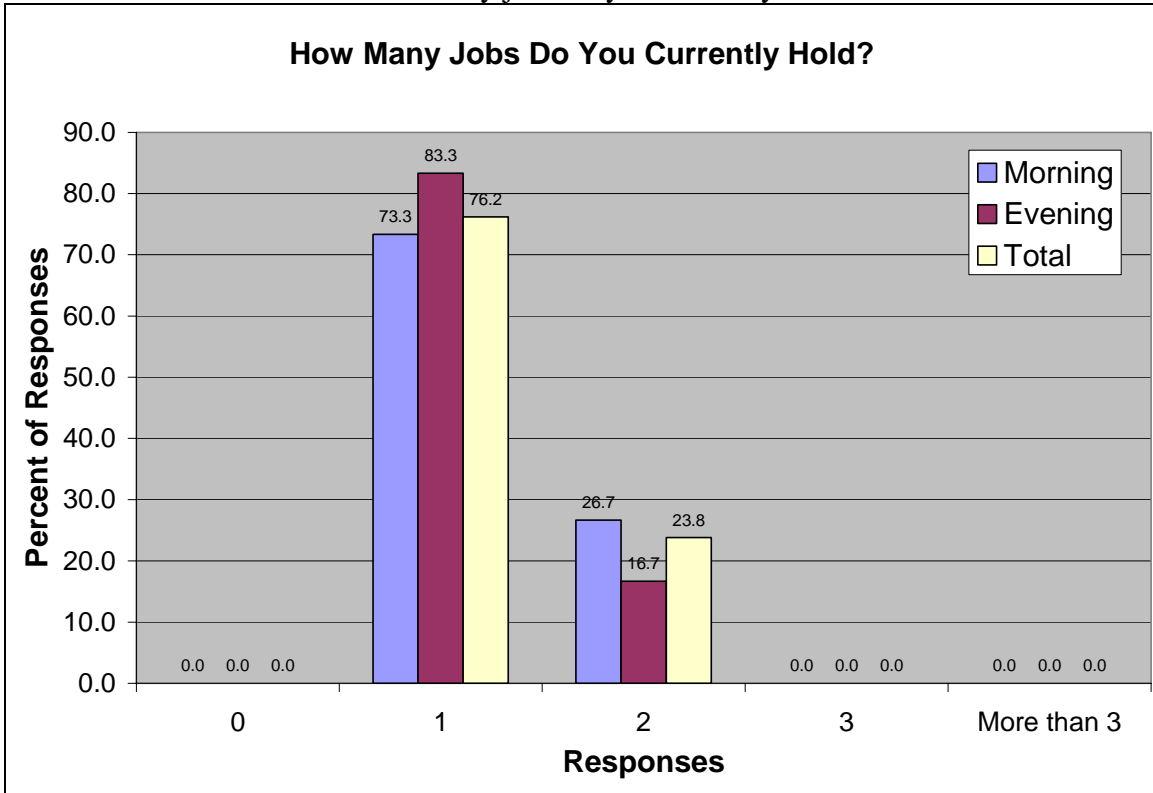
10. What forms of transportation will you use during your trip other than Ride On?



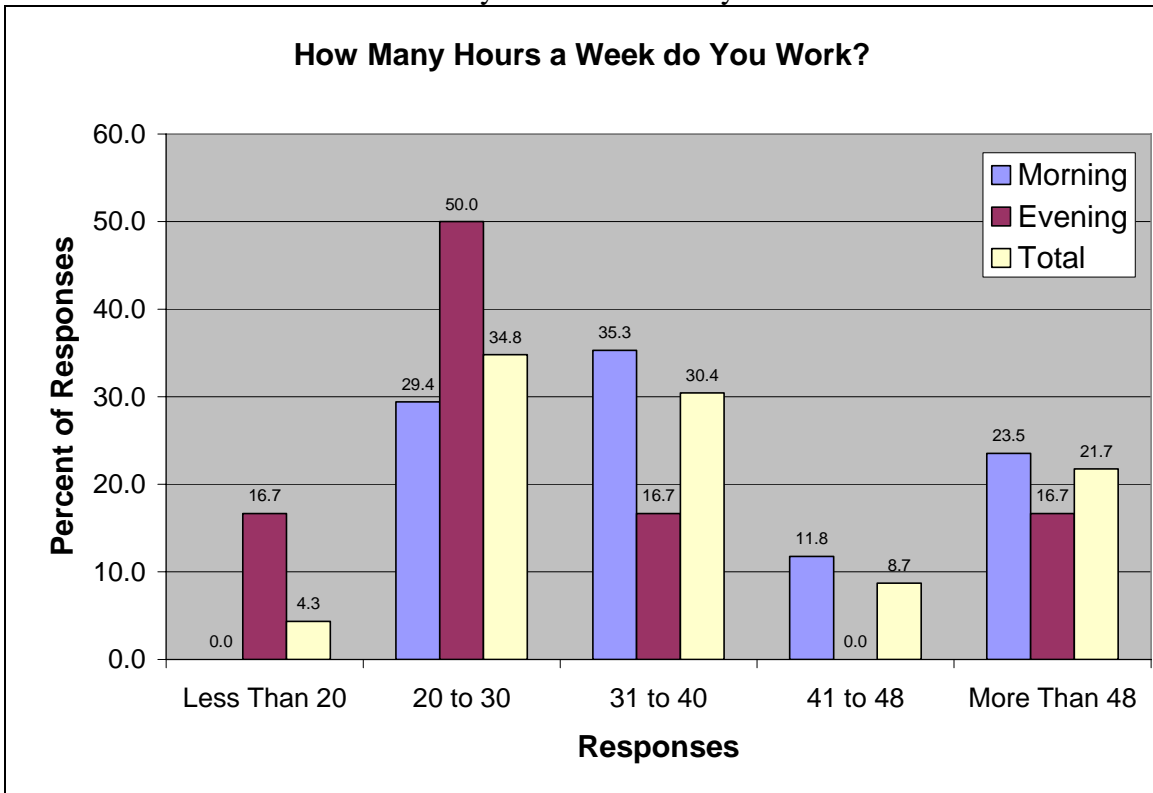
11. Do you have a car available to you?



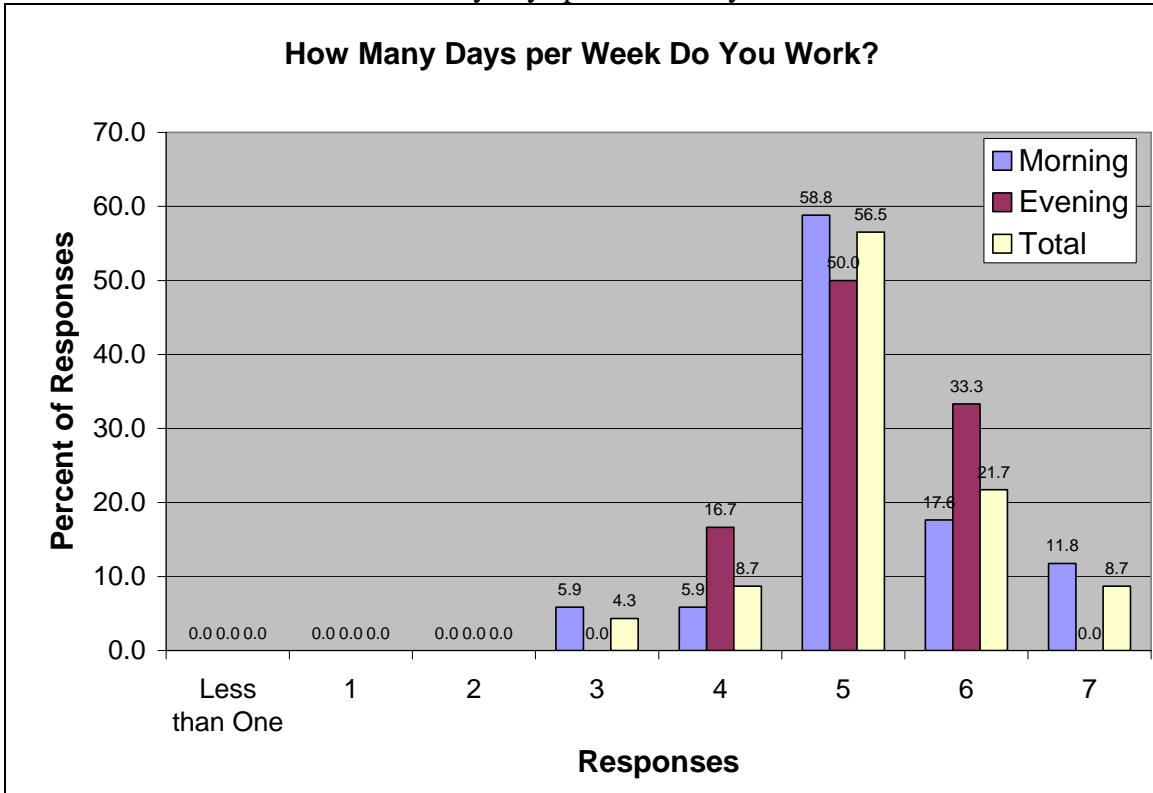
12. How many jobs do you currently hold?



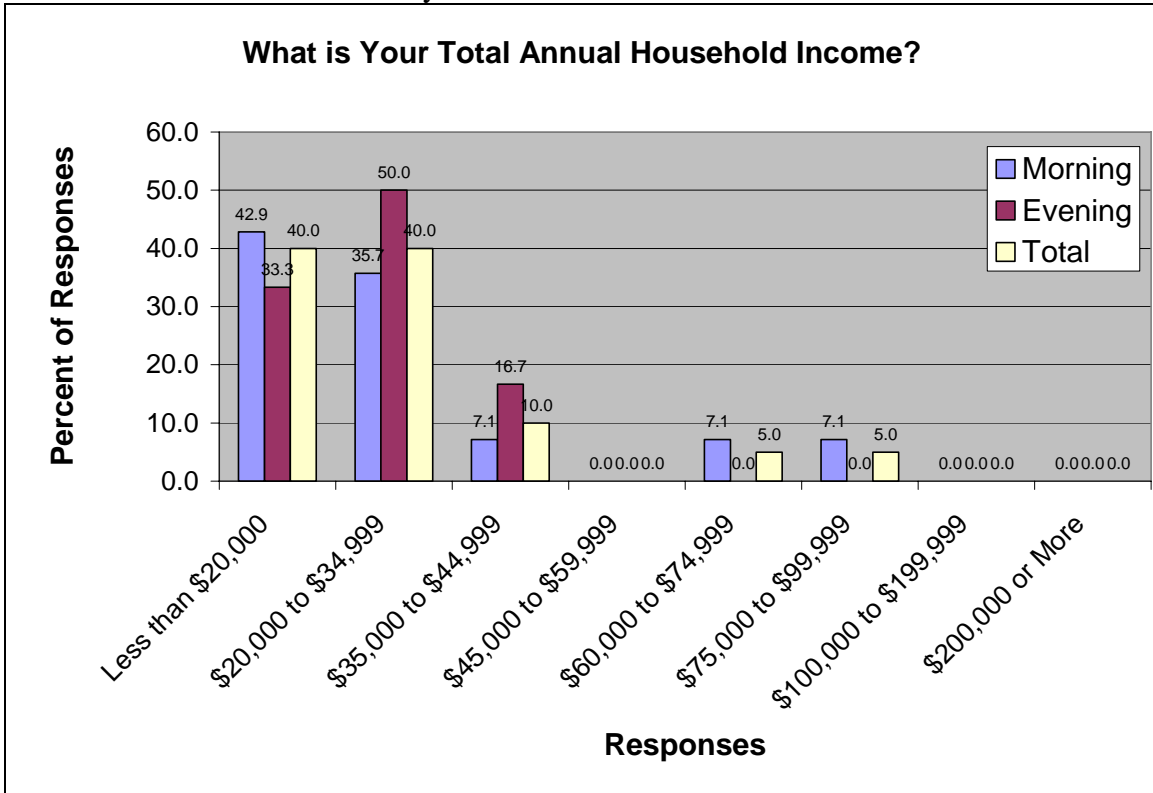
13. How many hours a week do you work?



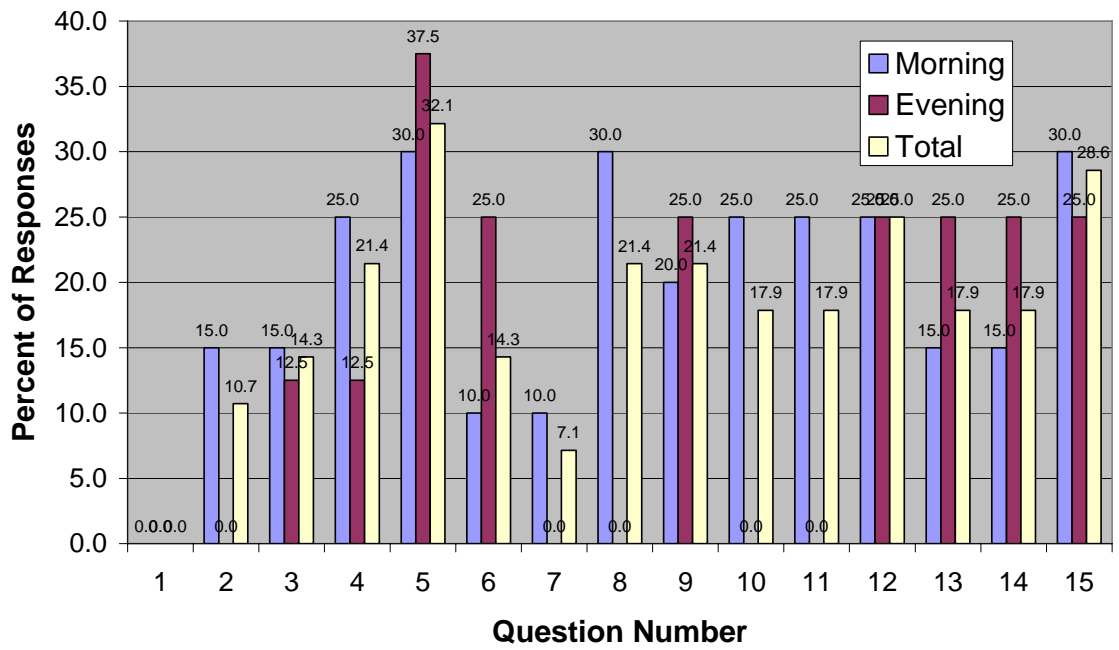
14. How many days per week do you work?



15. What is your total annual household income?



Omitted Responses by Question

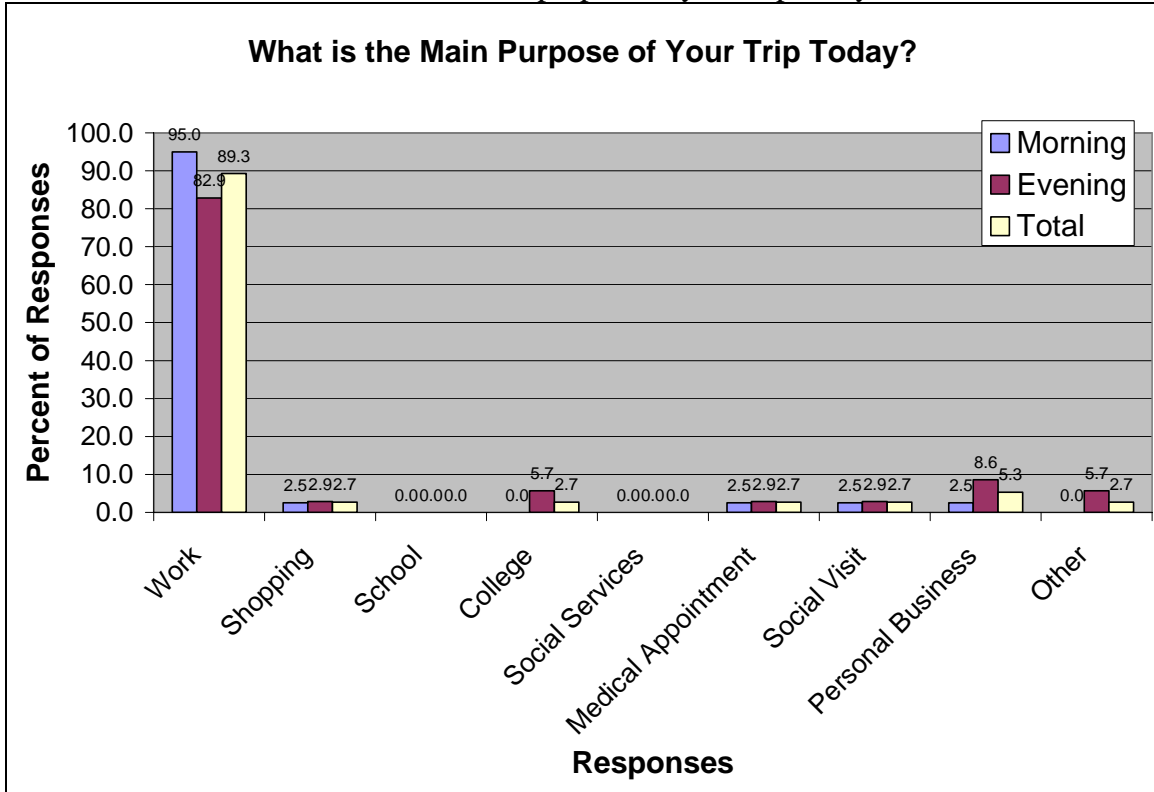




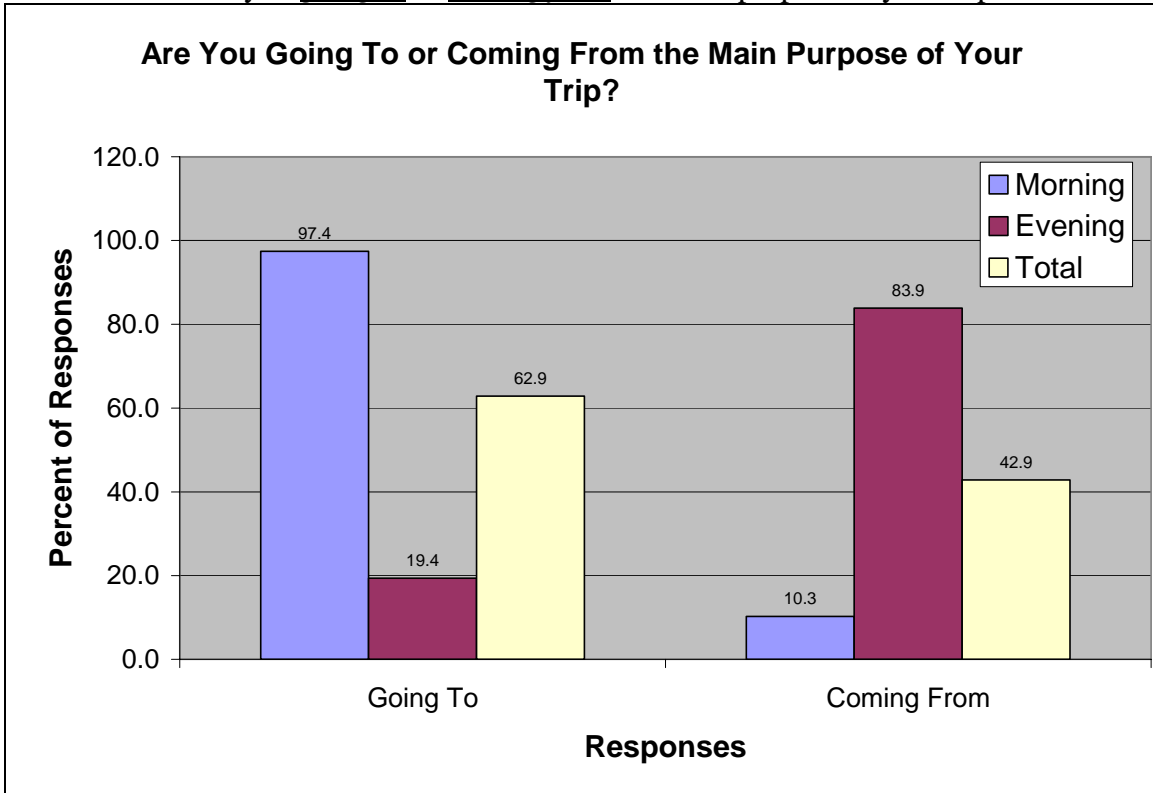
# Route 55

	Morning	Evening	Total
Spanish Surveys	10	2	12
Total Responses	43	36	79
Total Riders	78	56	134

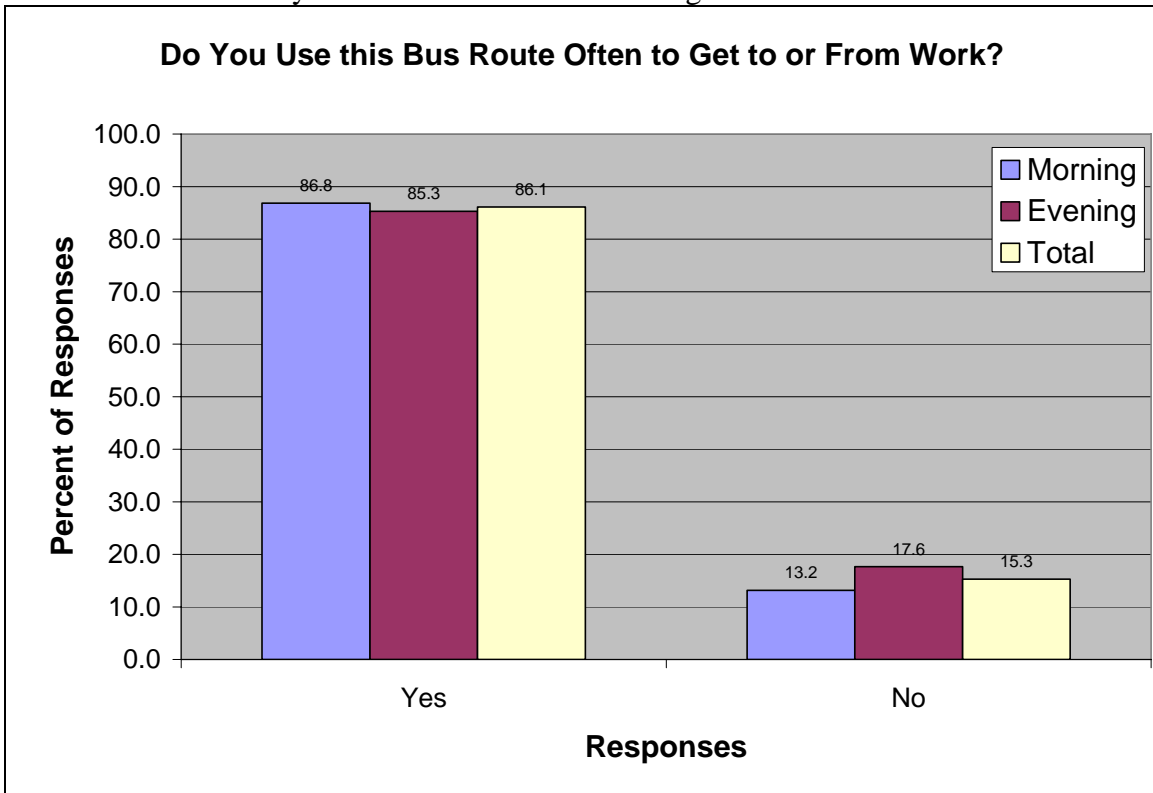
1. What is the main purpose of your trip today?



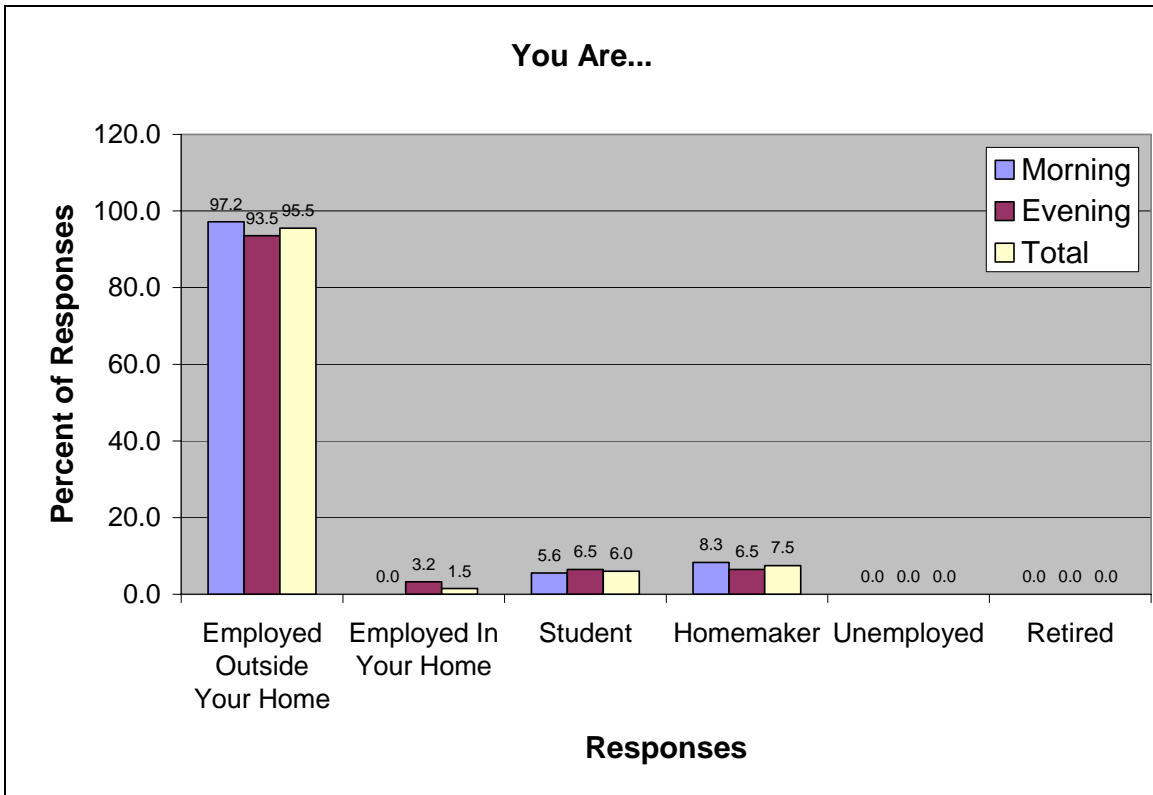
2. Are you *going to* or *coming from* the main purpose of your trip?



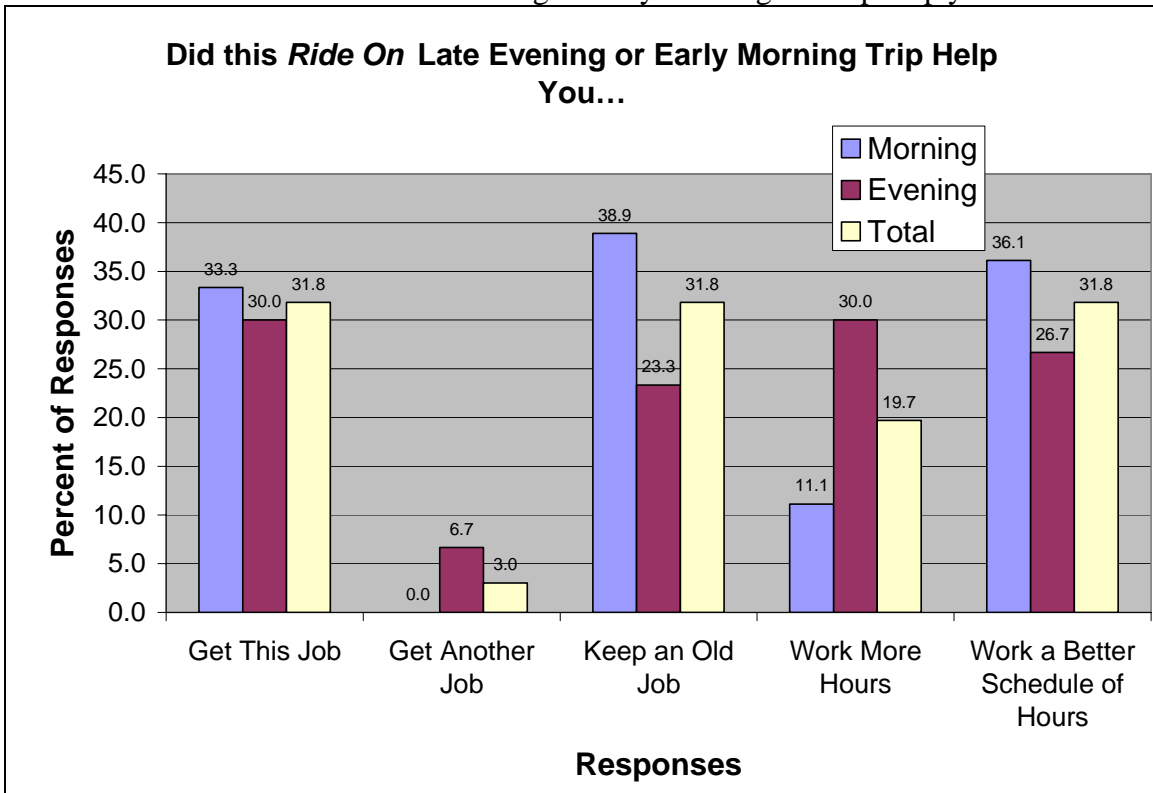
3. Do you use this bus route often to get to or from work?



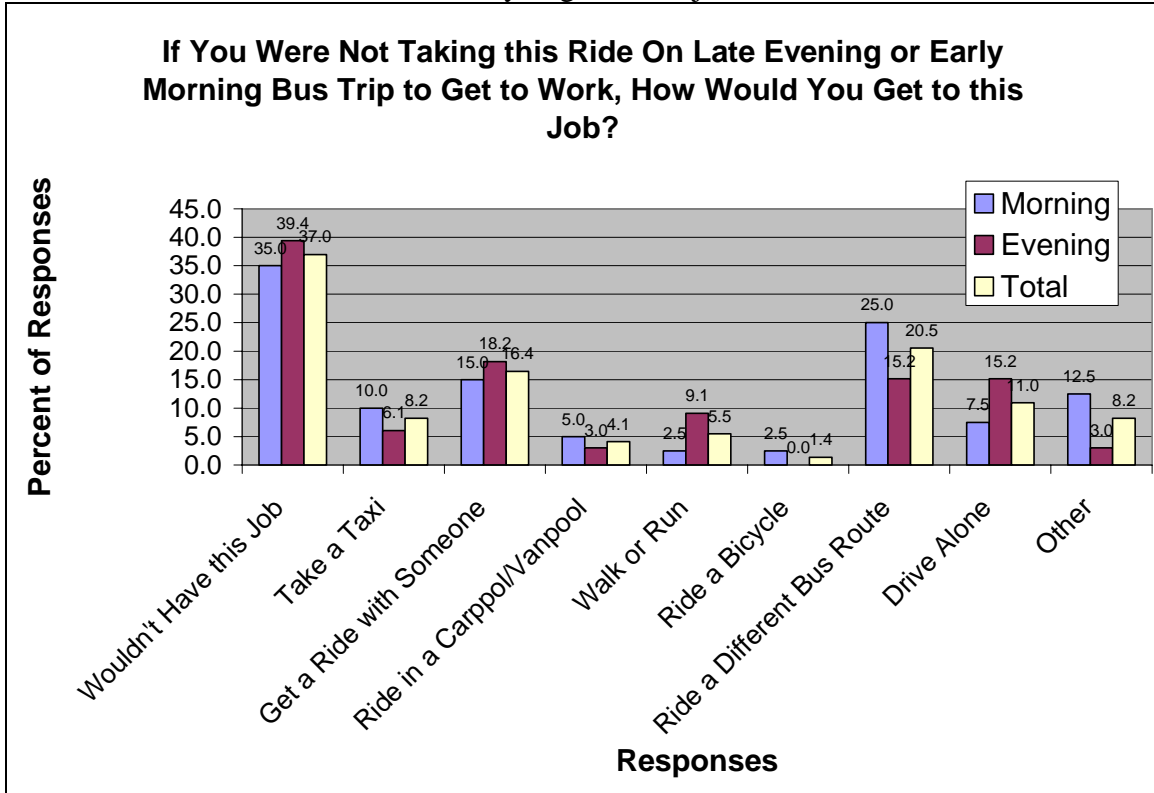
4. You are:



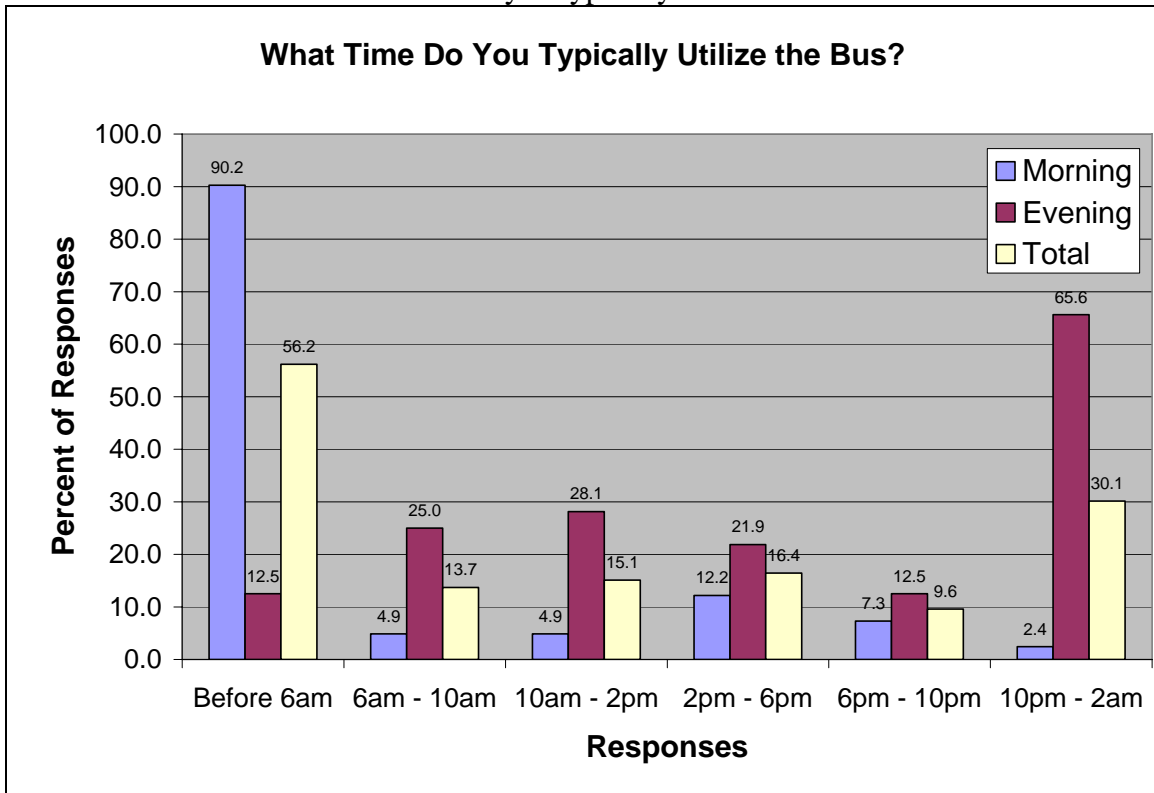
5. Did this Ride On late evening or early morning bus trip help you...



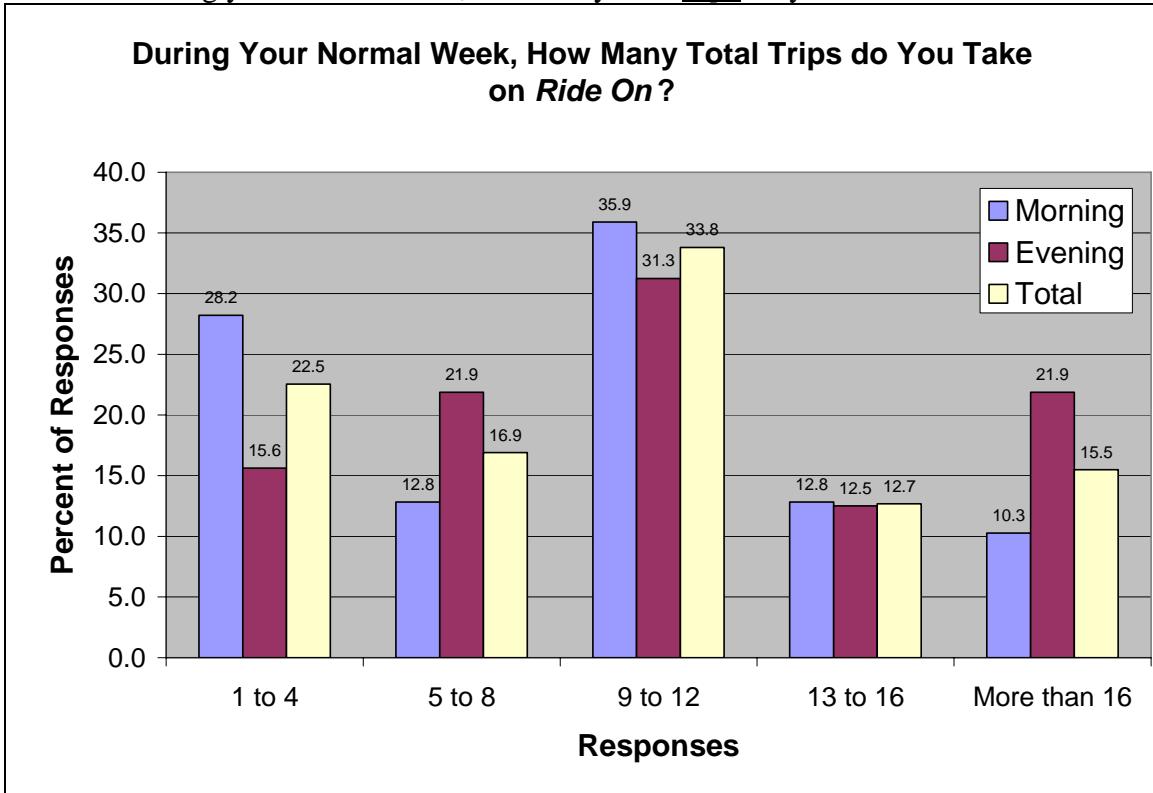
6. If you were not taking this Ride On late evening or early morning bus trip to get to work, how would you get to this job?



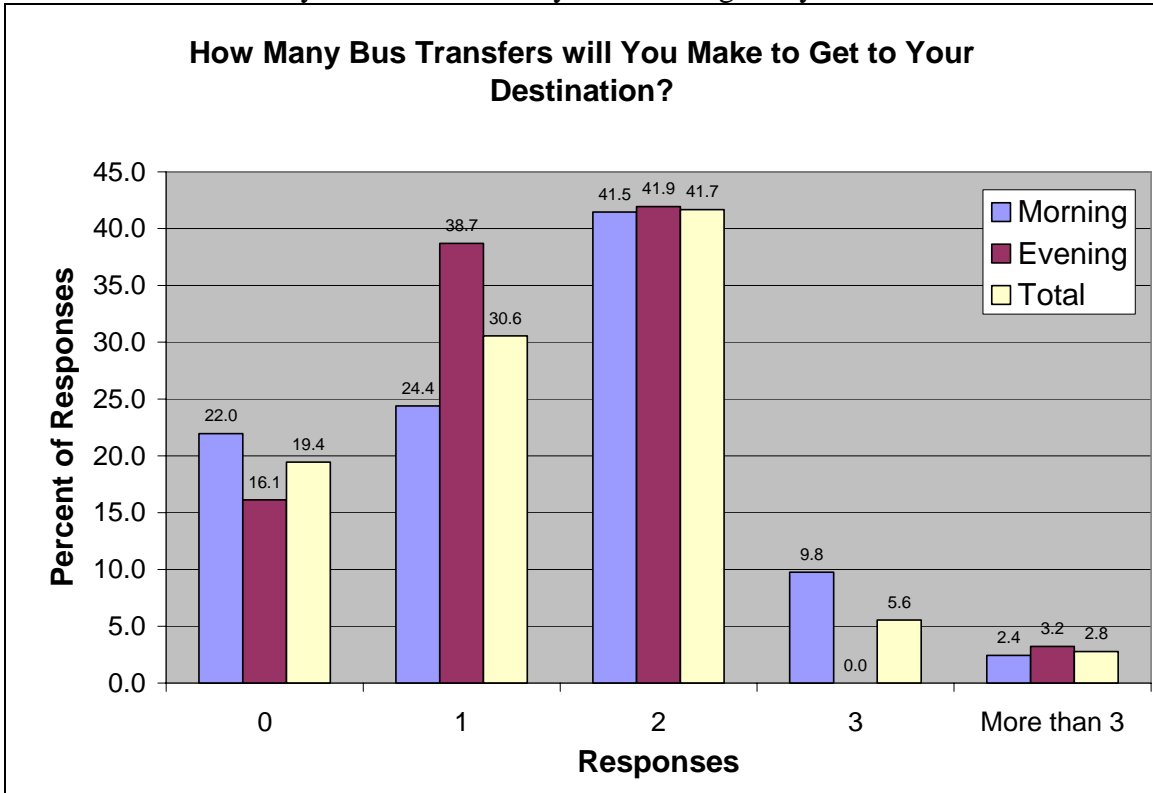
7. What time do you typically utilize the bus?



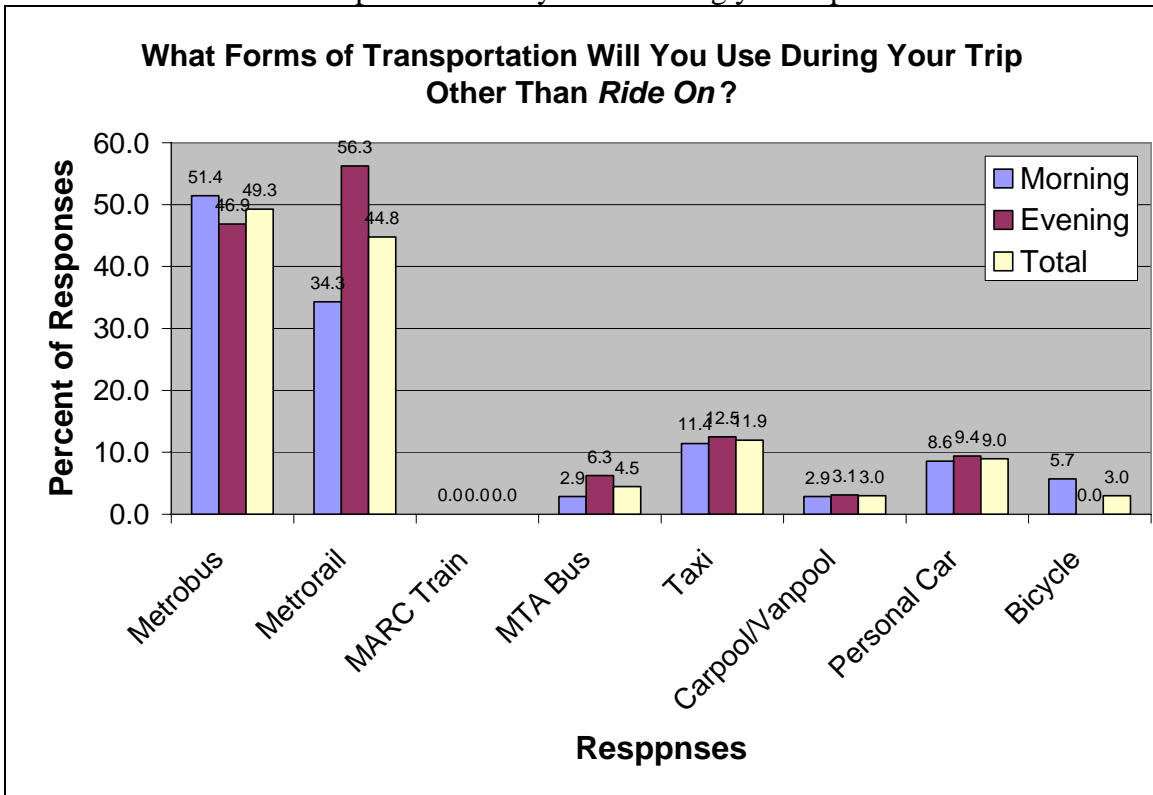
8. During your normal week, how many total *trips* do you take on Ride On?



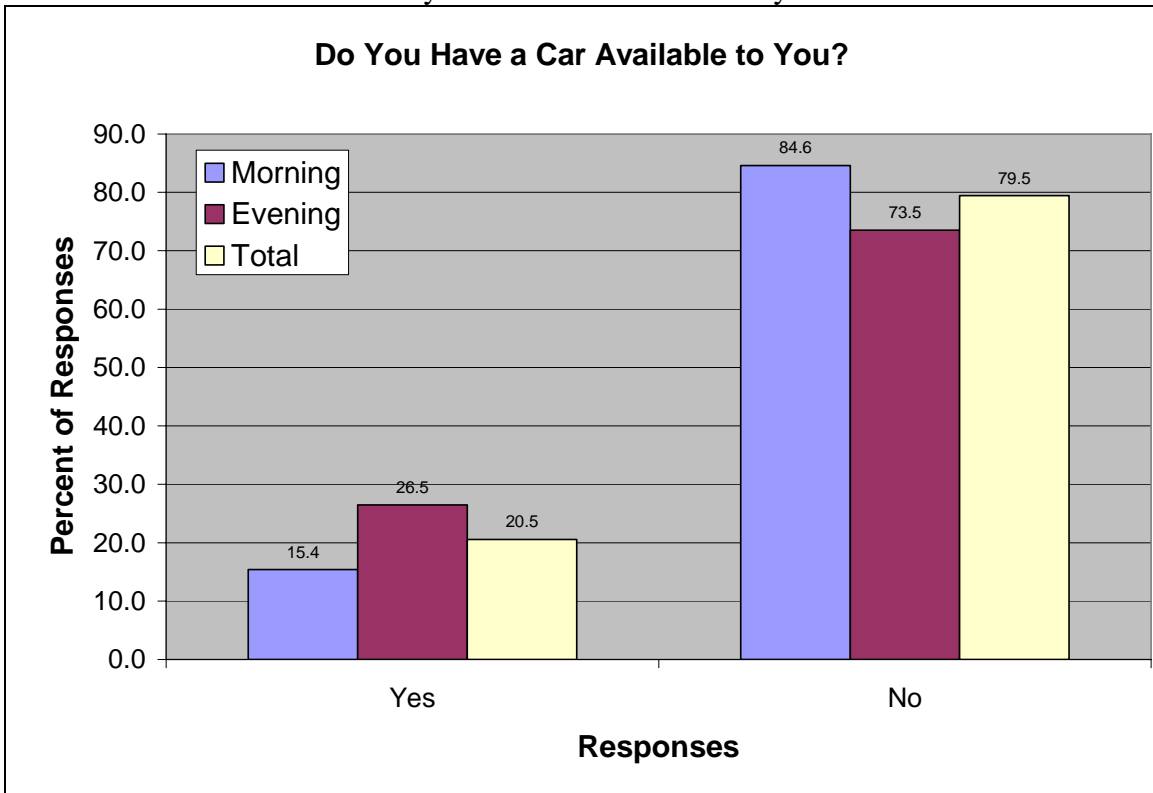
9. How many bus transfers will you make to get to your destination?



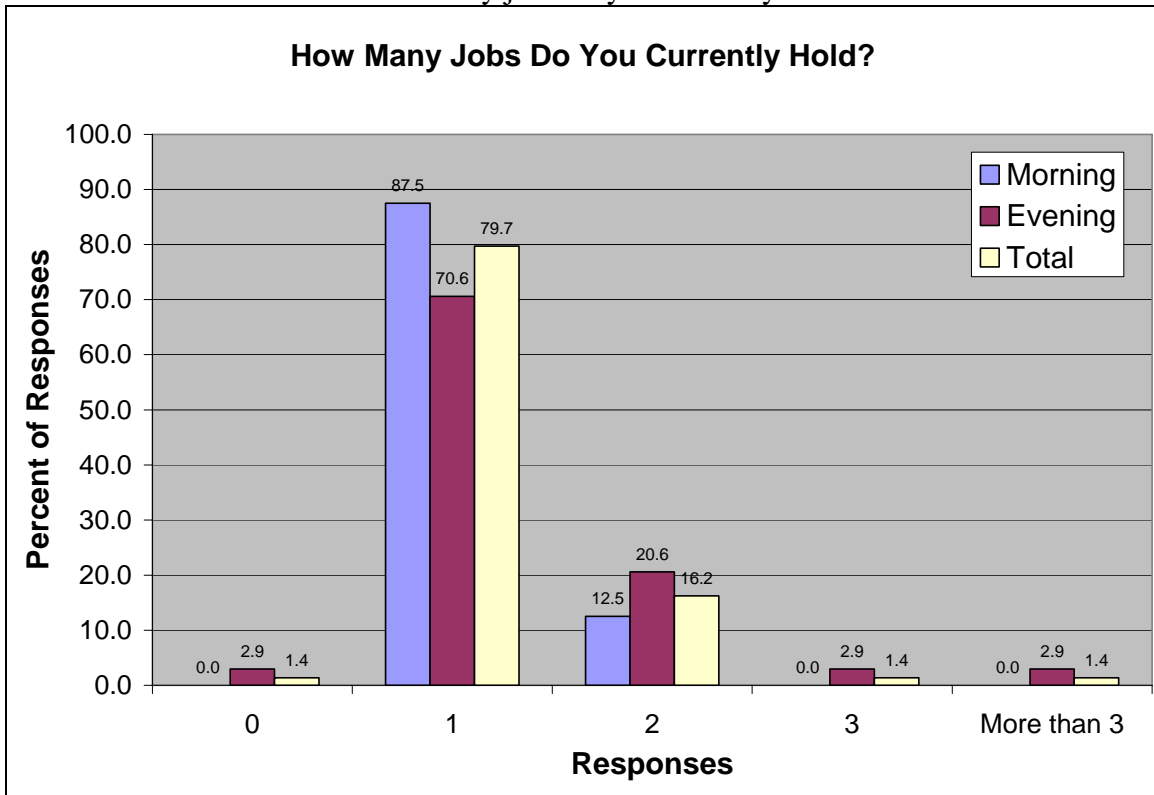
10. What forms of transportation will you use during your trip other than Ride On?



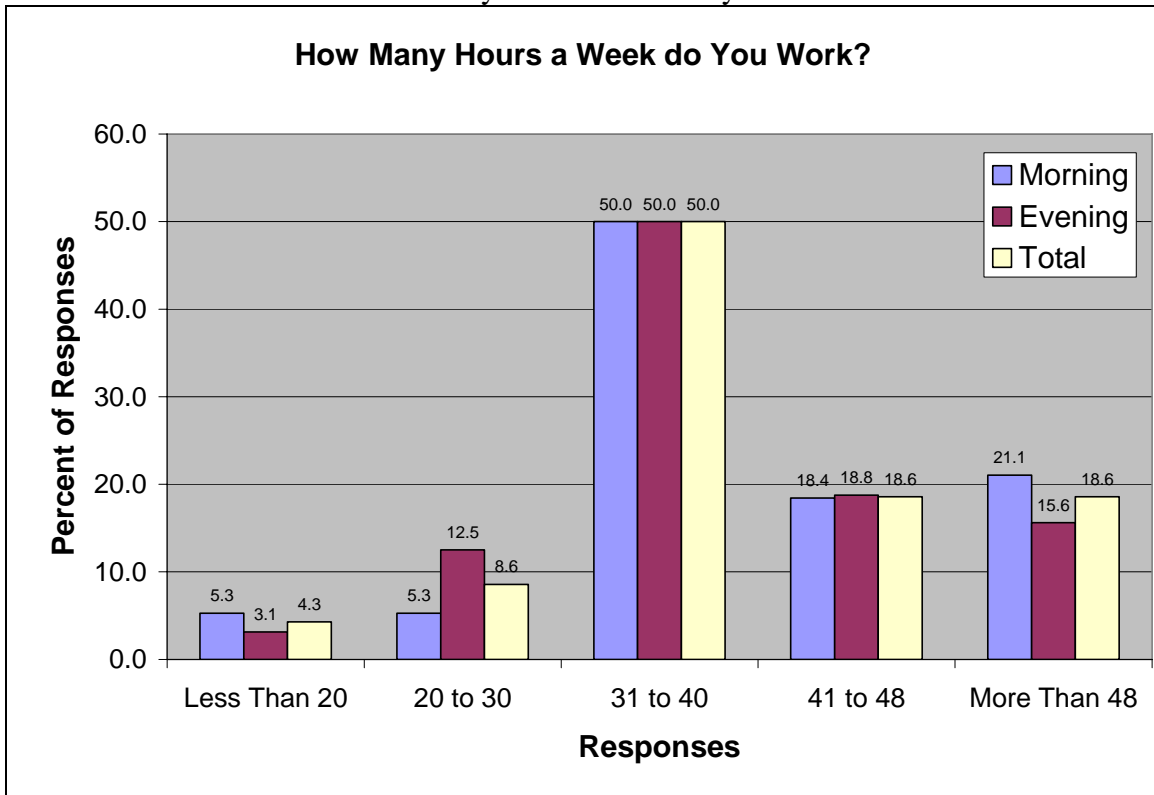
11. Do you have a car available to you?



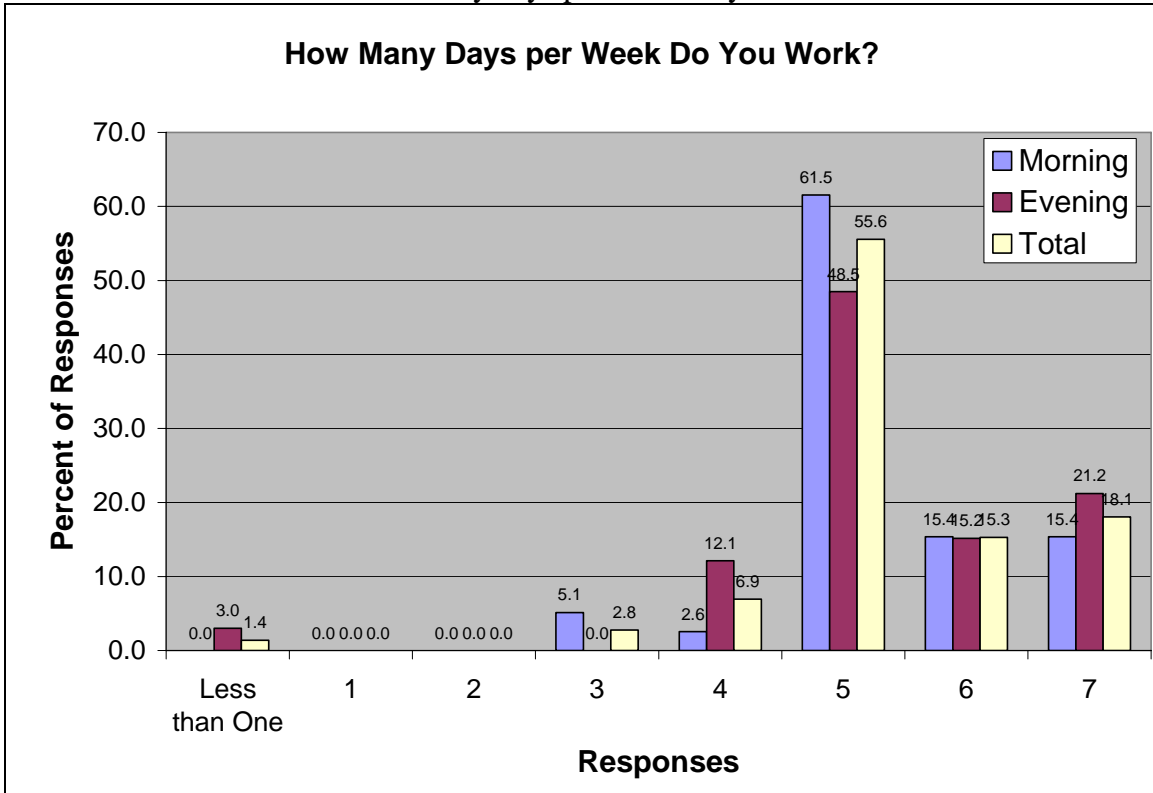
12. How many jobs do you currently hold?



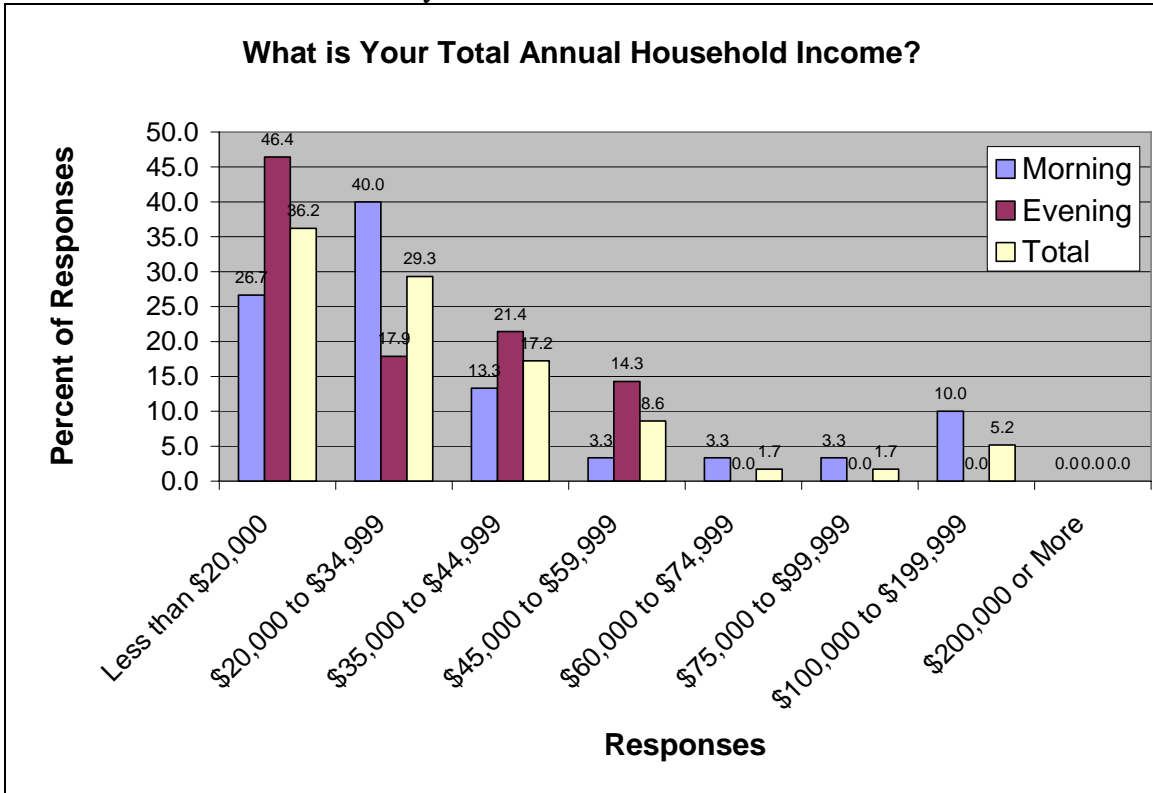
13. How many hours a week do you work?



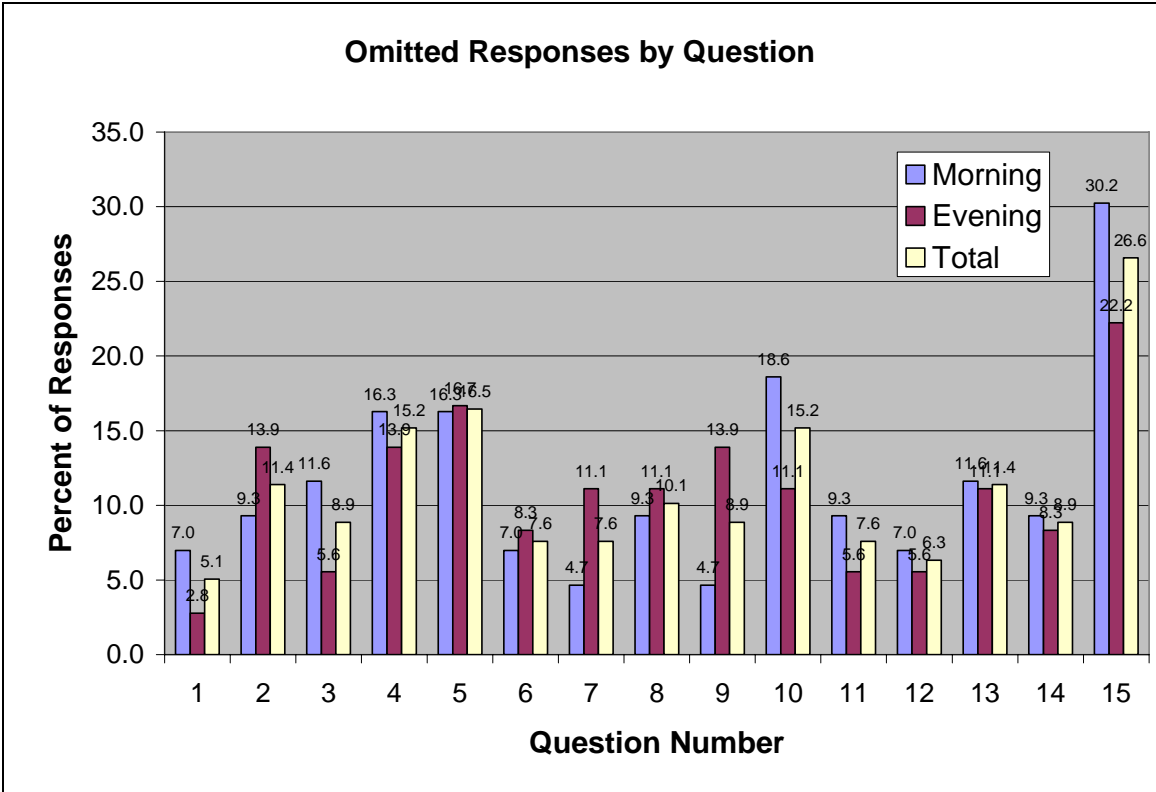
14. How many days per week do you work?



15. What is your total annual household income?



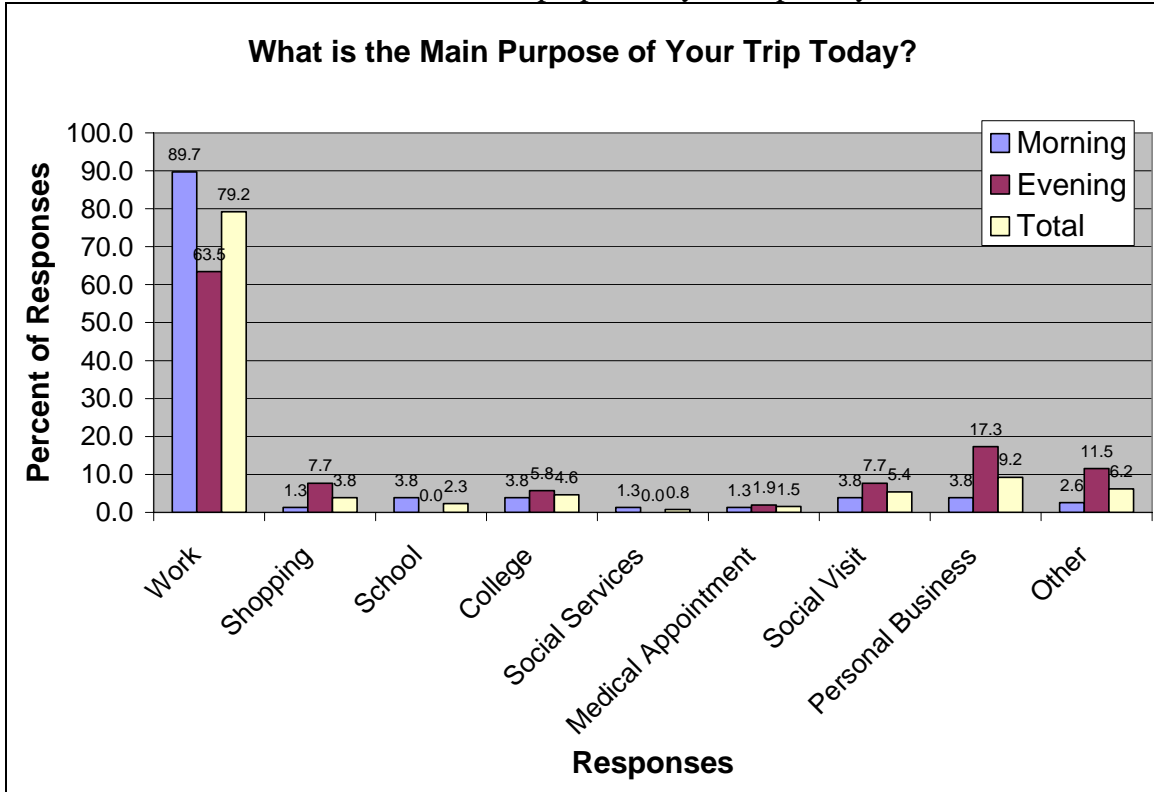




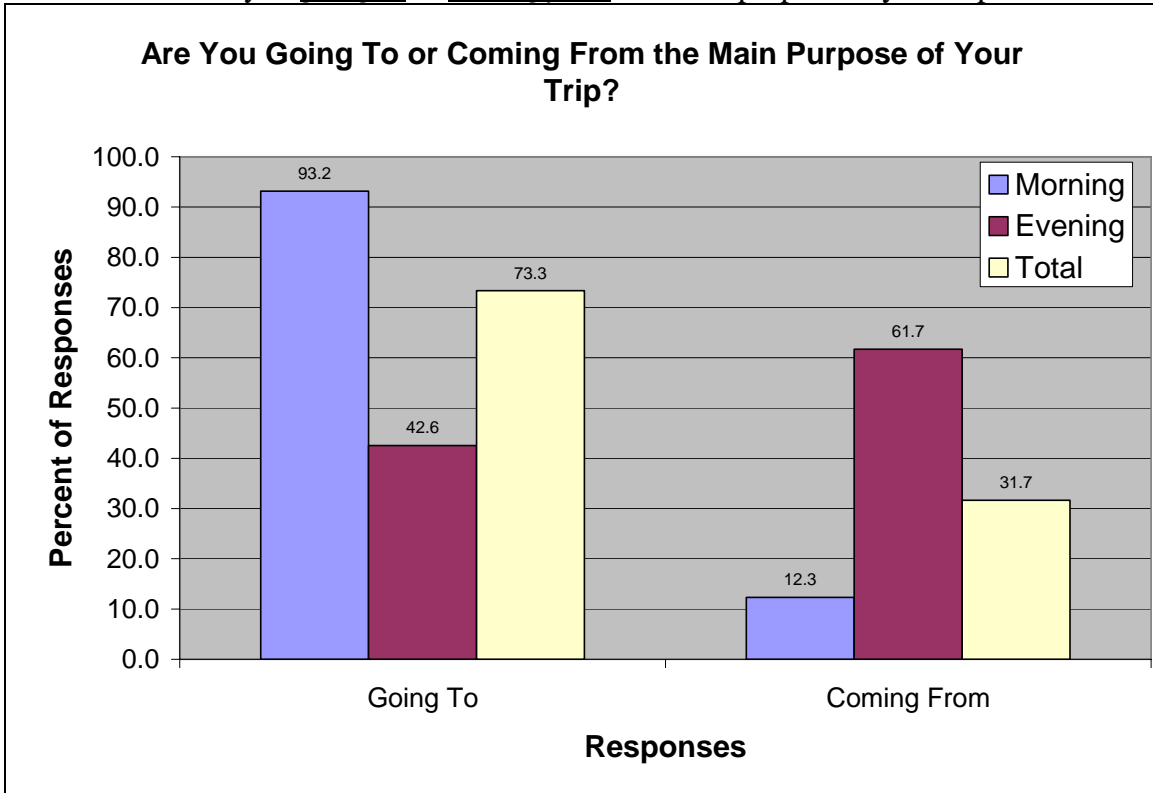
# Route 59

	Morning	Evening	Total
Spanish Surveys	30	6	36
Total Responses	84	52	136
Total Riders	172	100	272

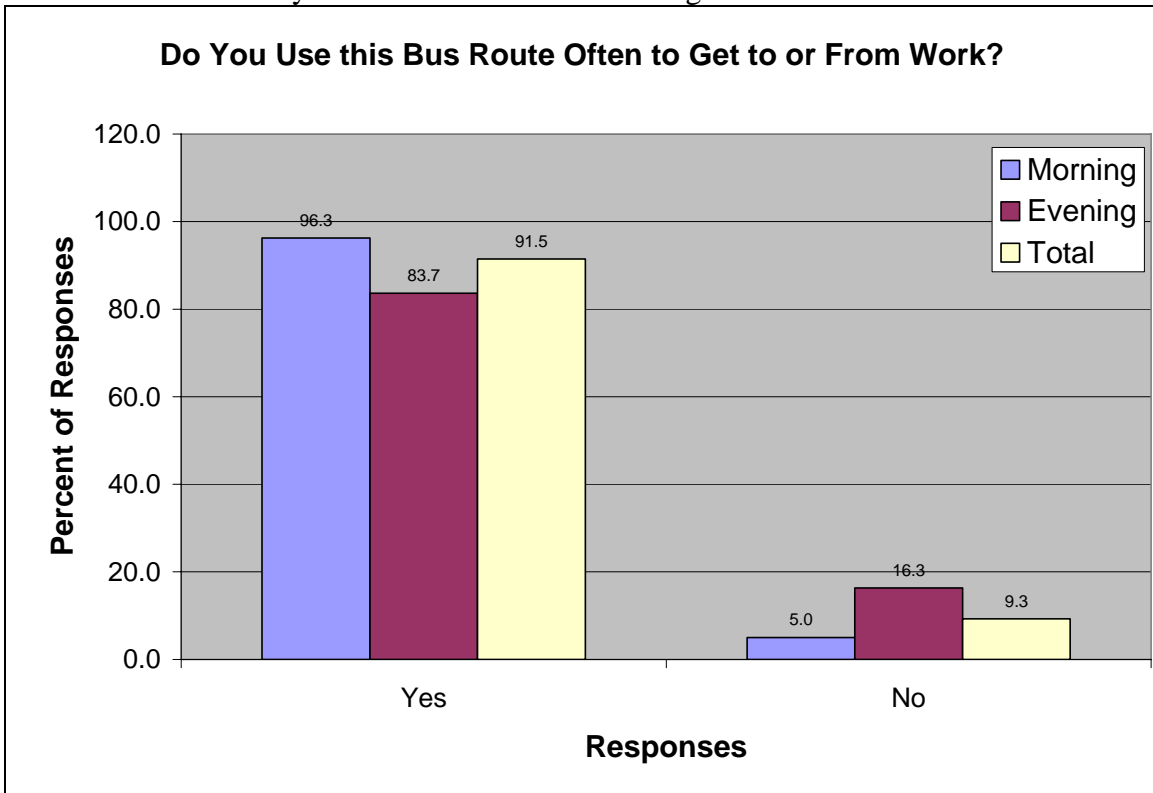
1. What is the main purpose of your trip today?



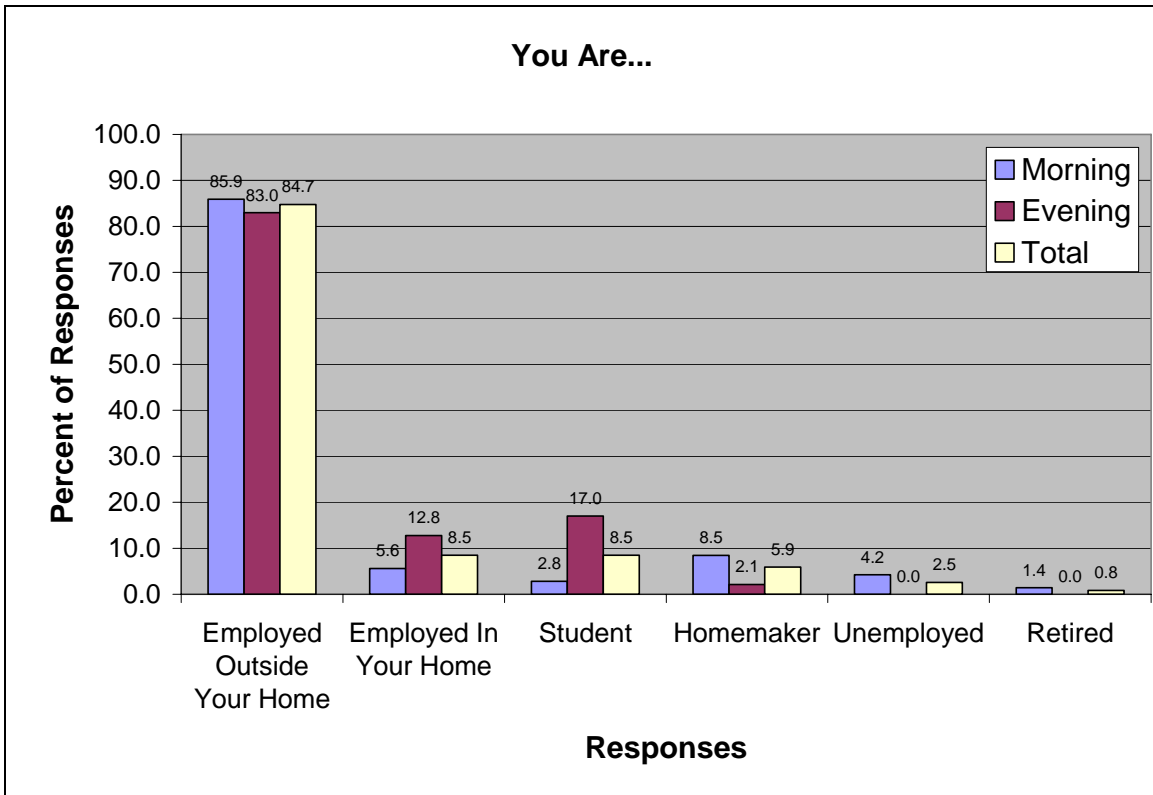
2. Are you *going to* or *coming from* the main purpose of your trip?



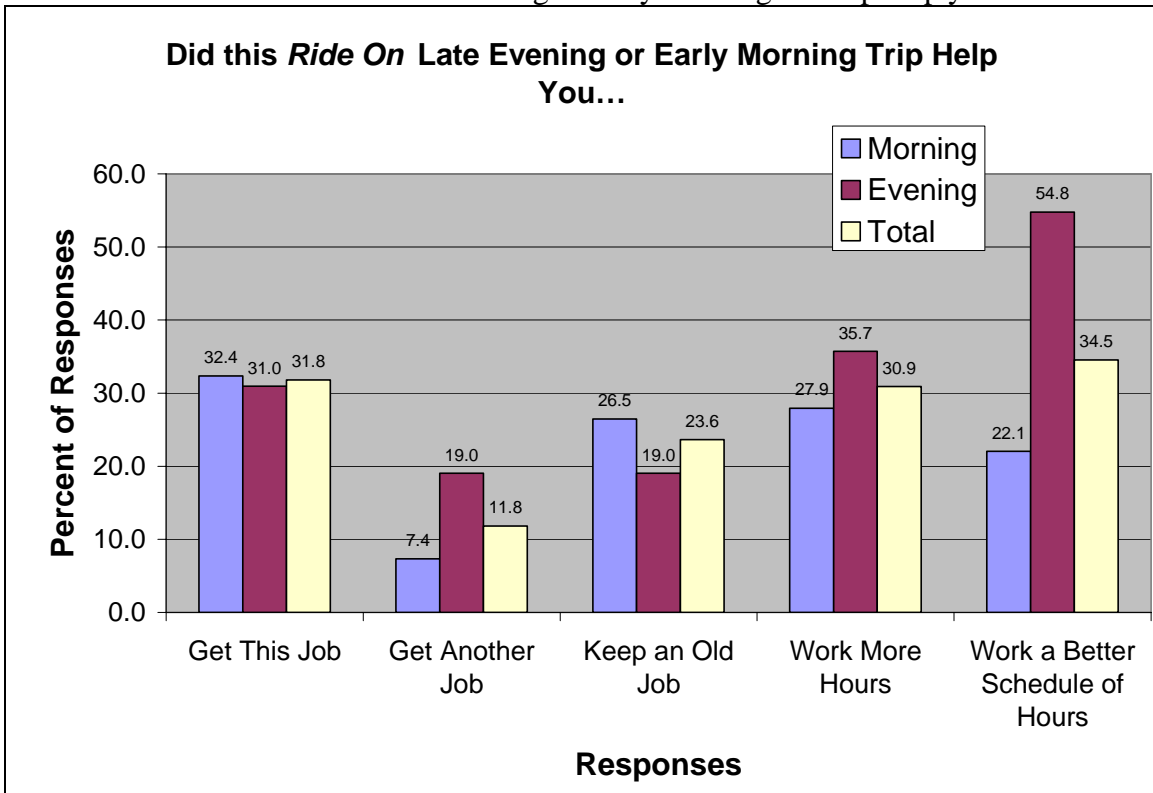
3. Do you use this bus route often to get to or from work?



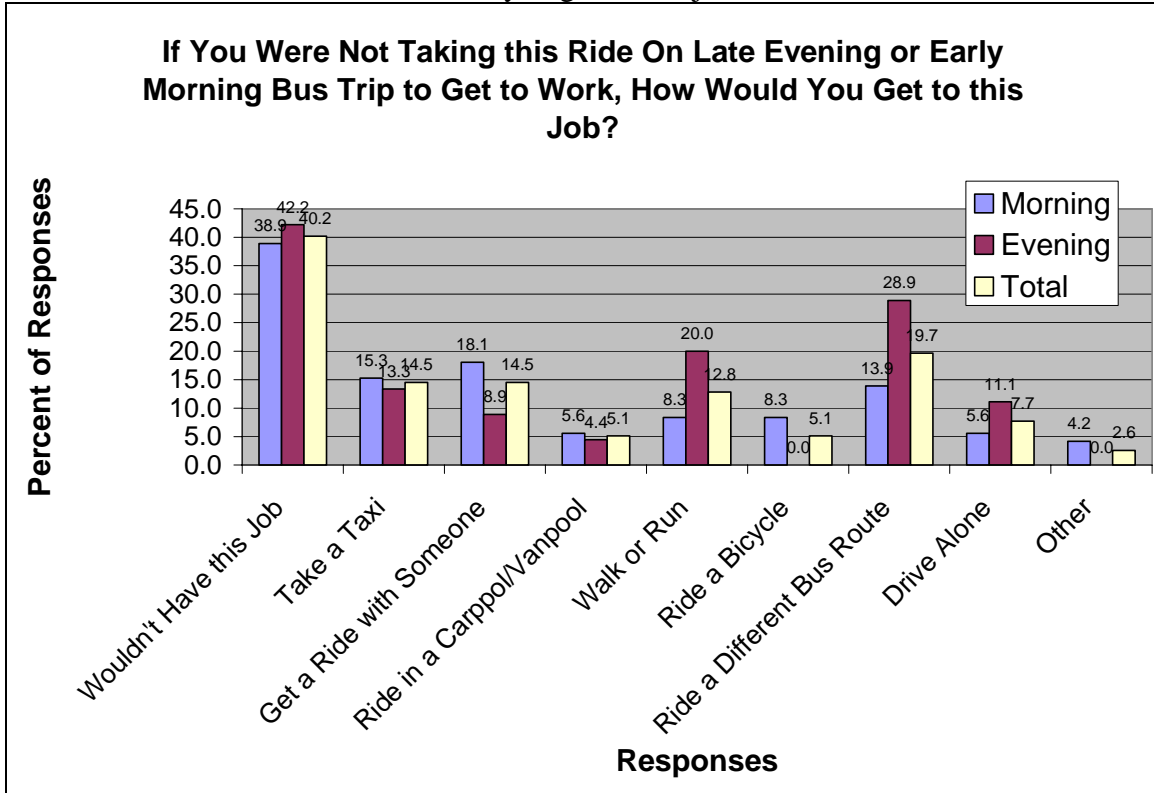
4. You are:



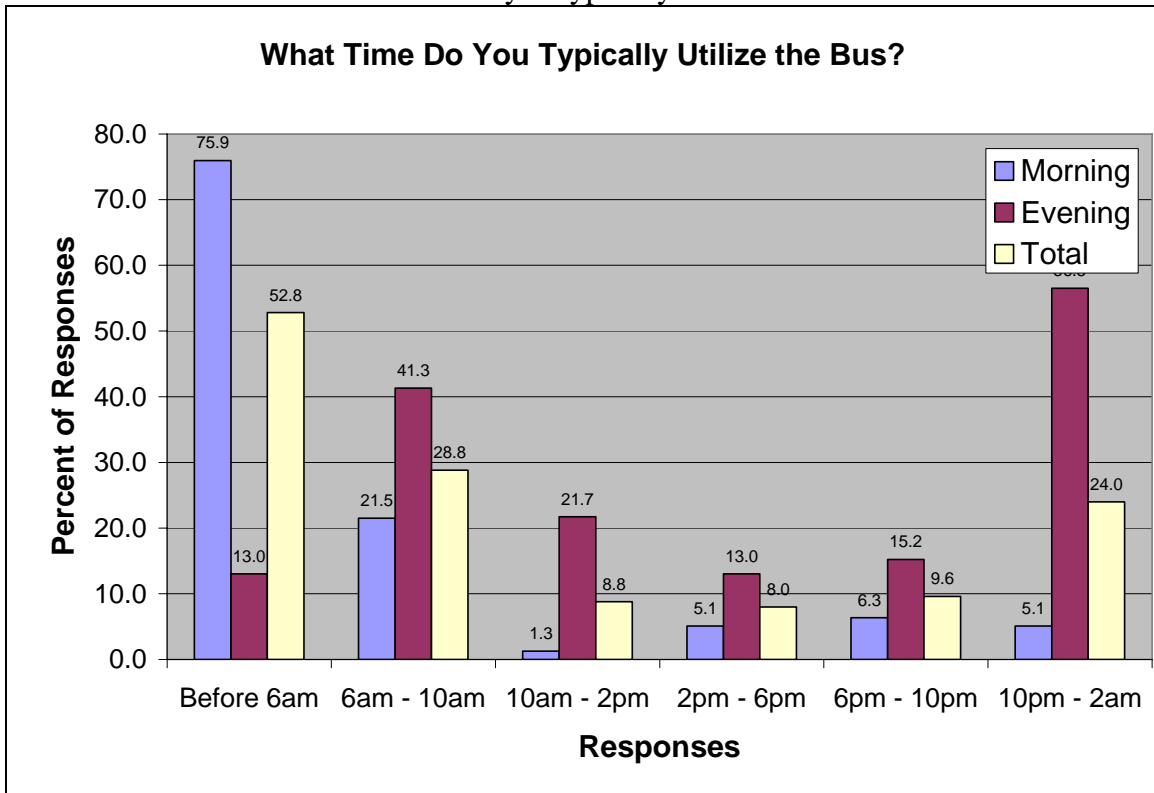
5. Did this Ride On late evening or early morning bus trip help you...



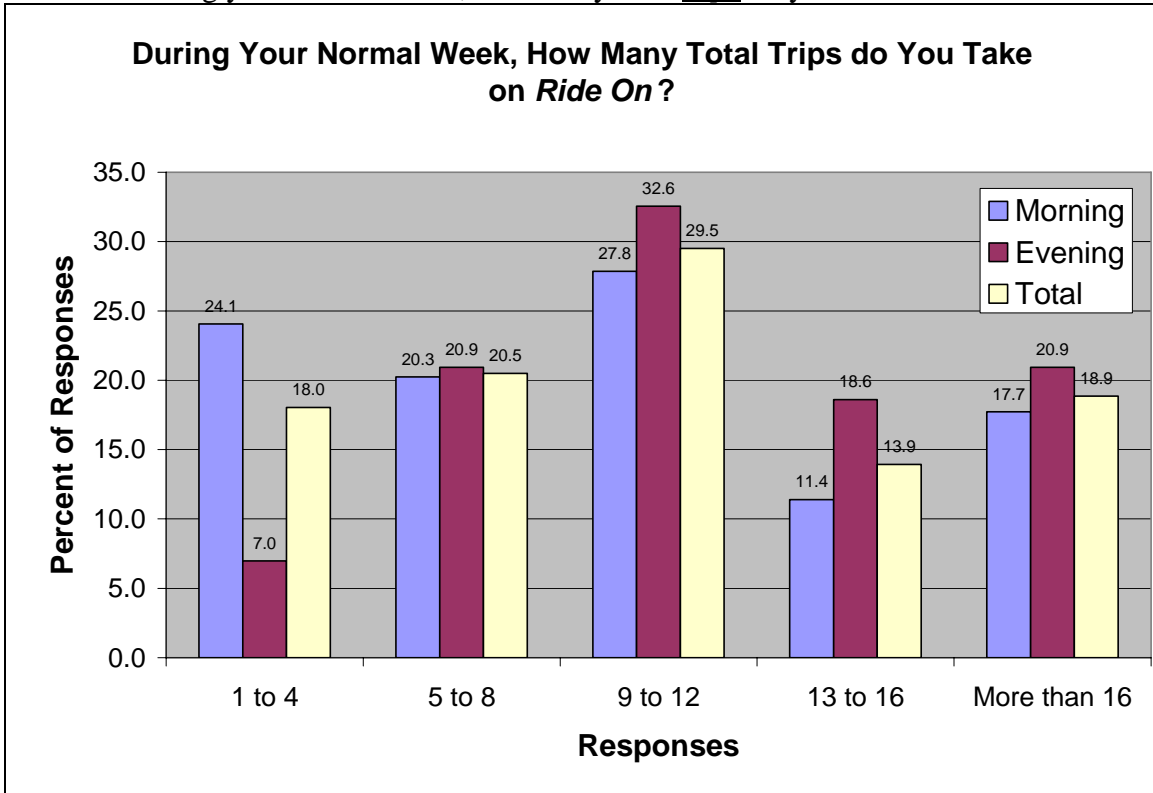
6. If you were not taking this Ride On late evening or early morning bus trip to get to work, how would you get to this job?



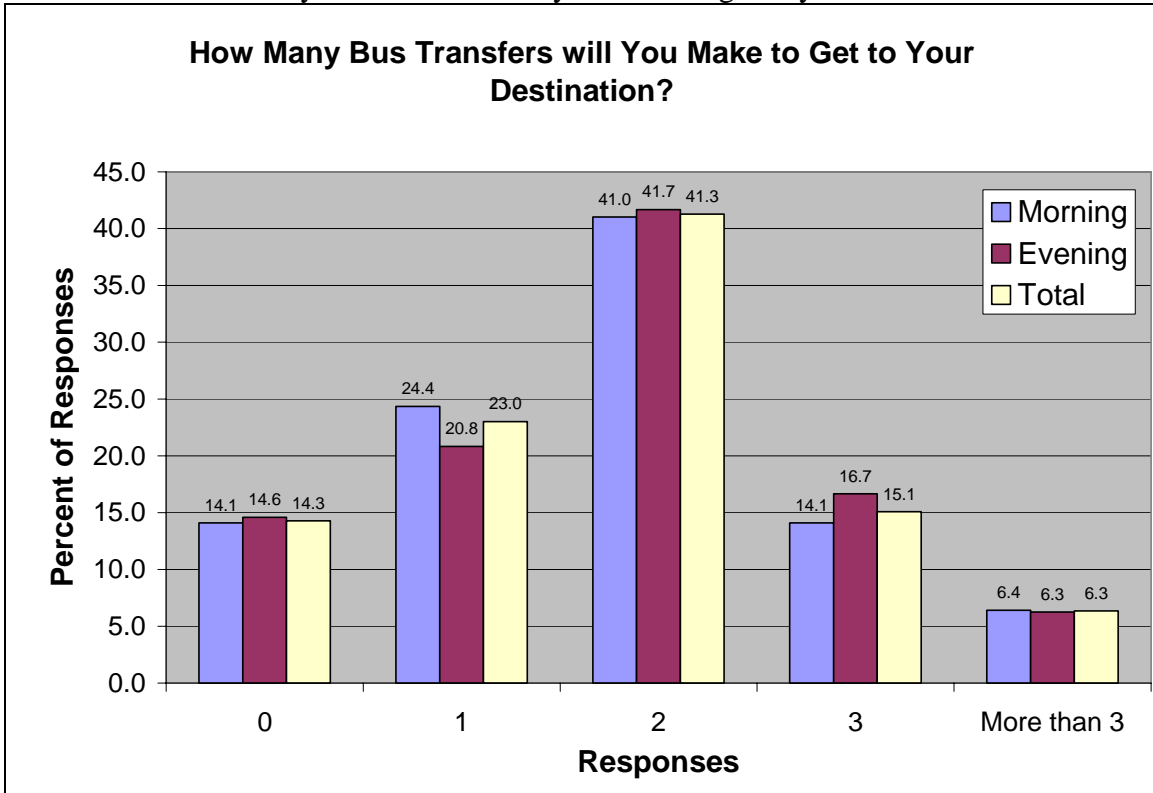
7. What time do you typically utilize the bus?



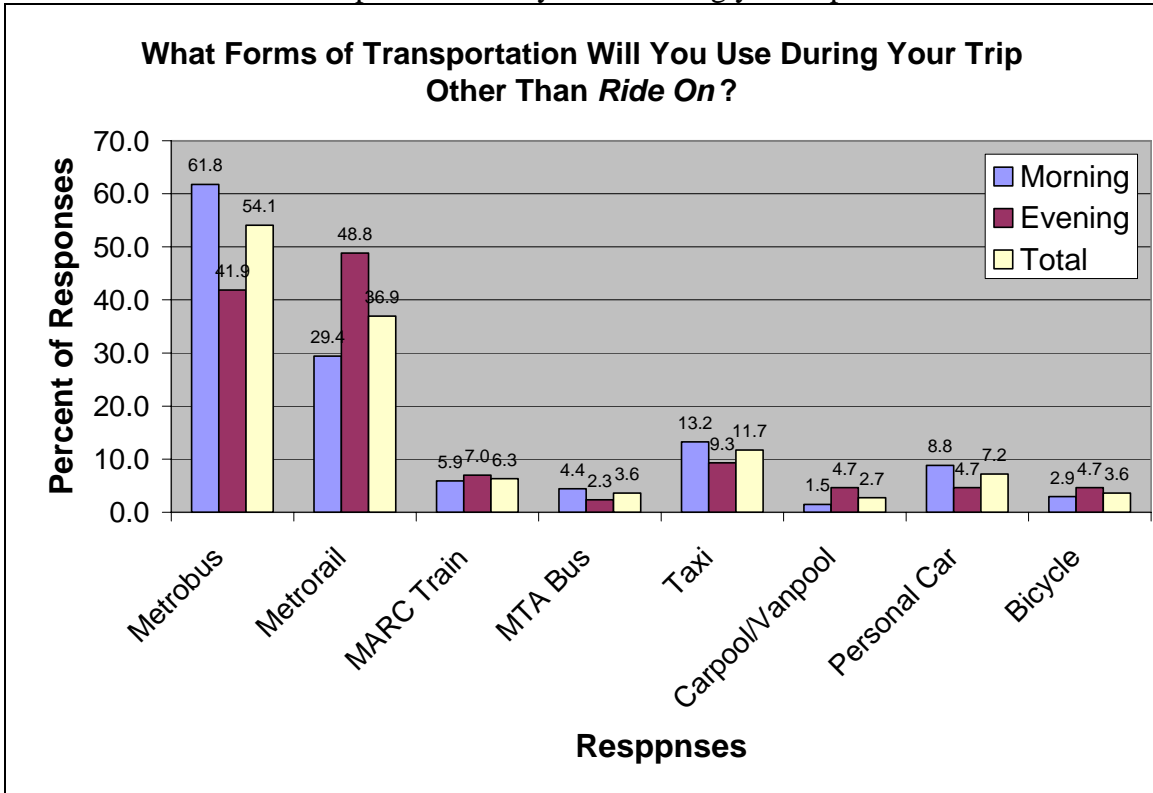
8. During your normal week, how many total *trips* do you take on Ride On?



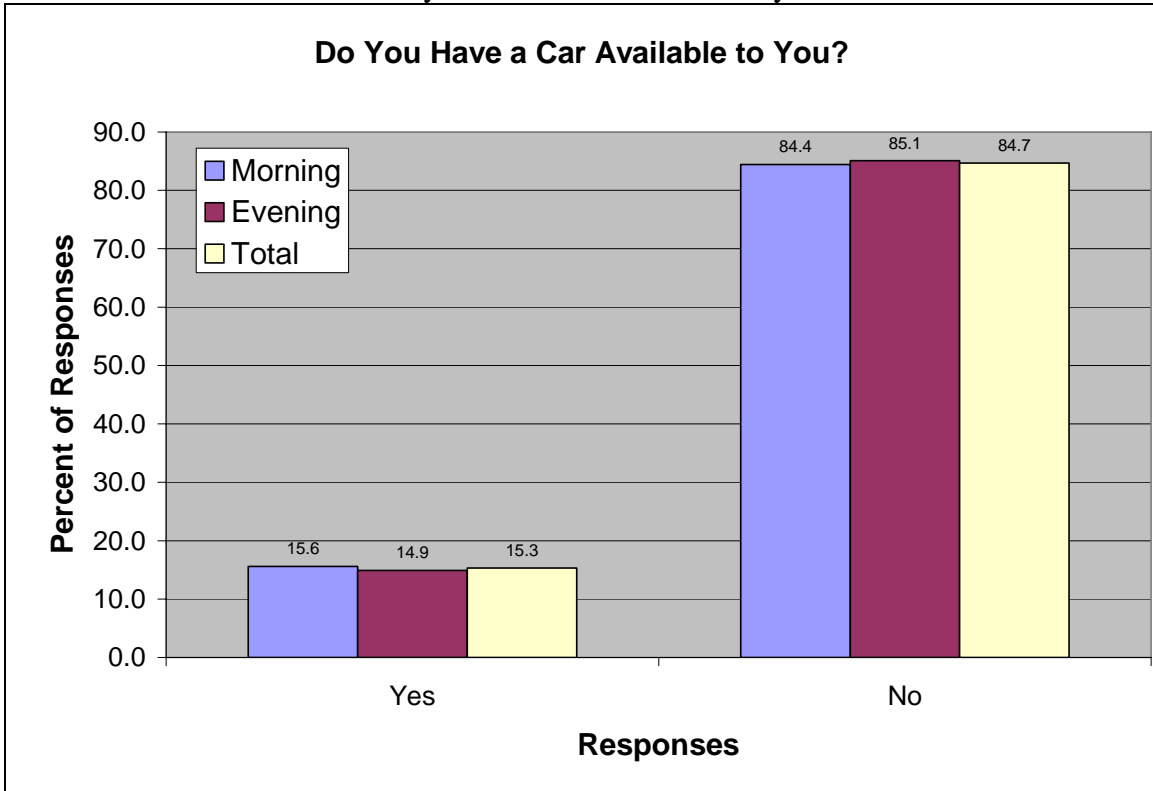
9. How many bus transfers will you make to get to your destination?



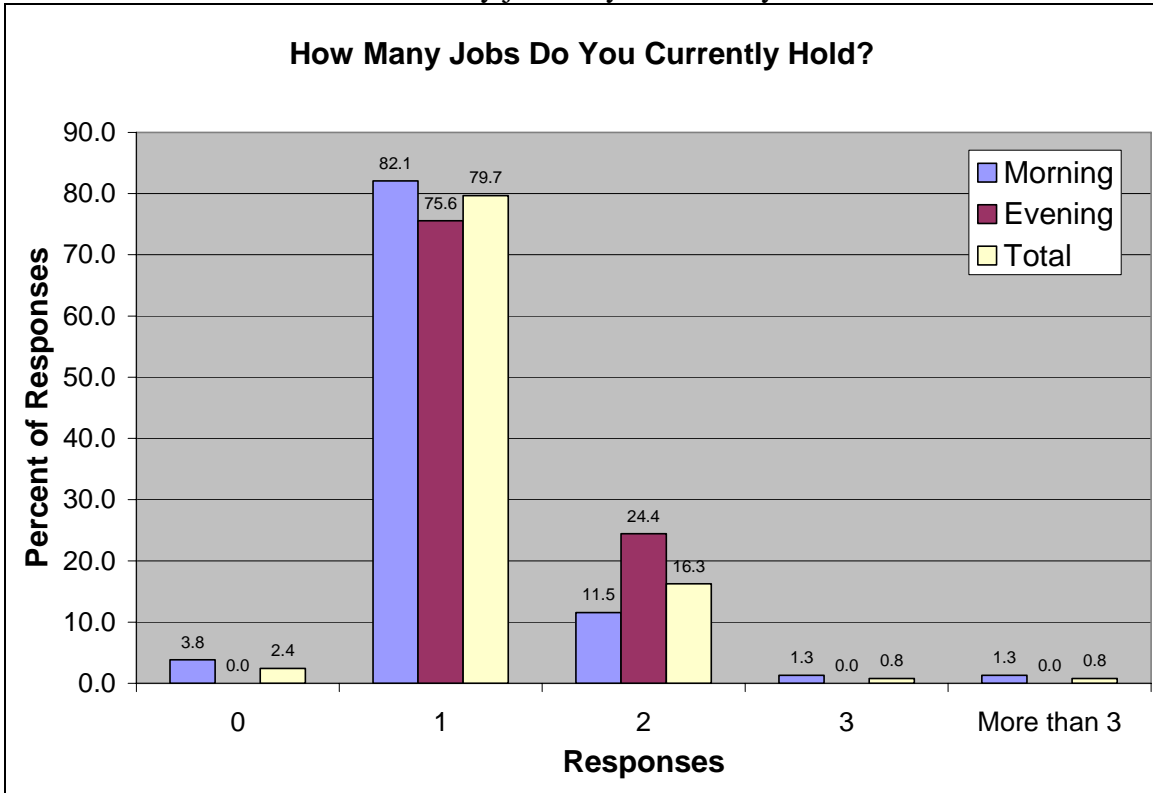
10. What forms of transportation will you use during your trip other than Ride On?



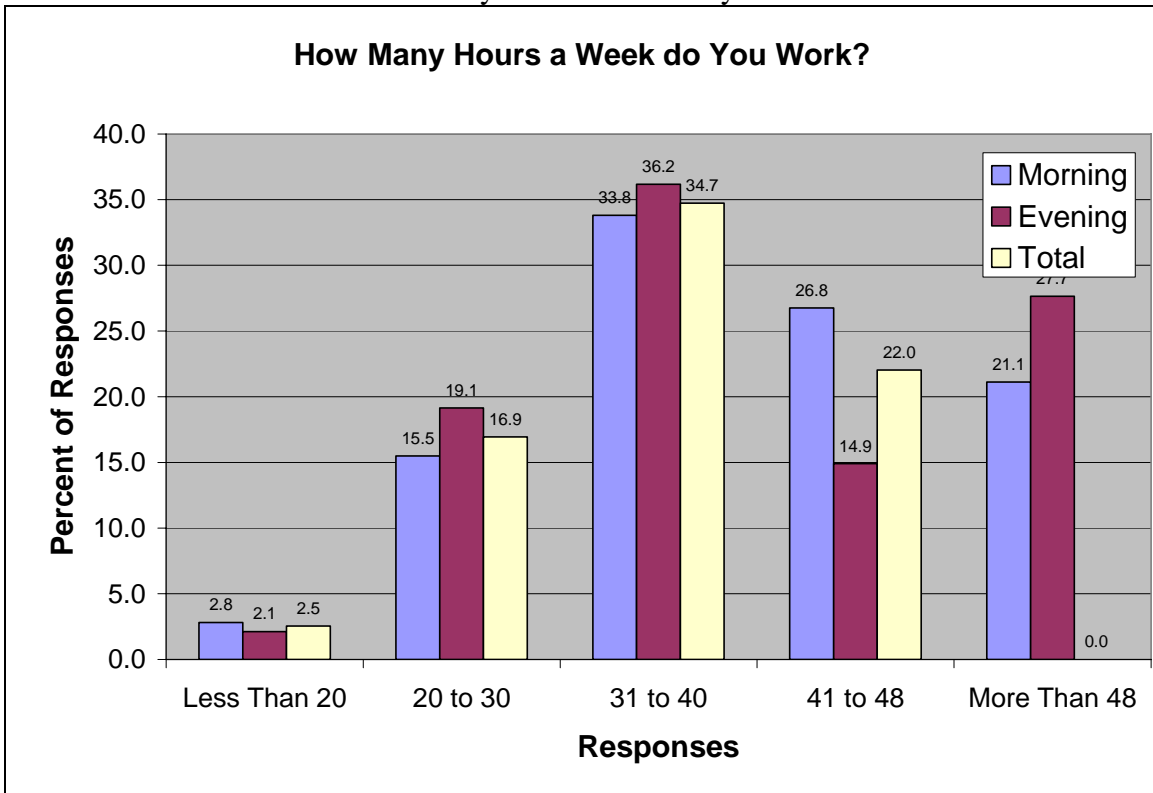
11. Do you have a car available to you?



12. How many jobs do you currently hold?

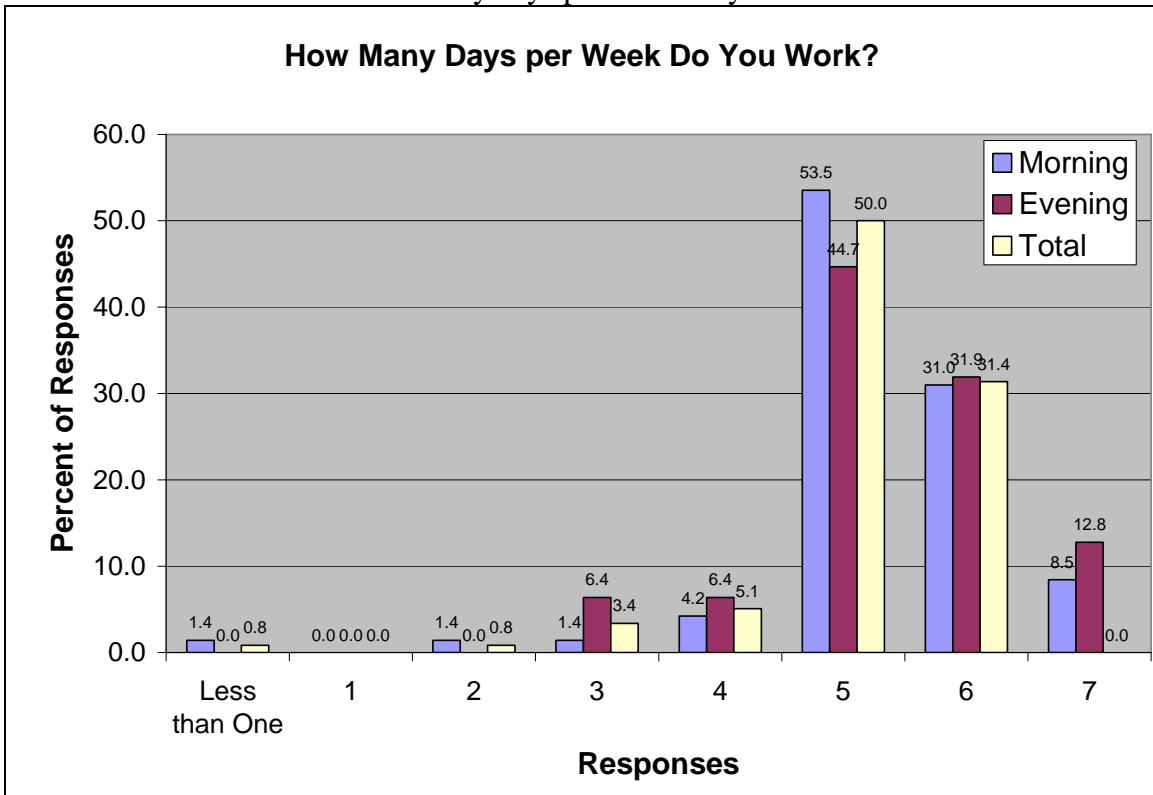


13. How many hours a week do you work?

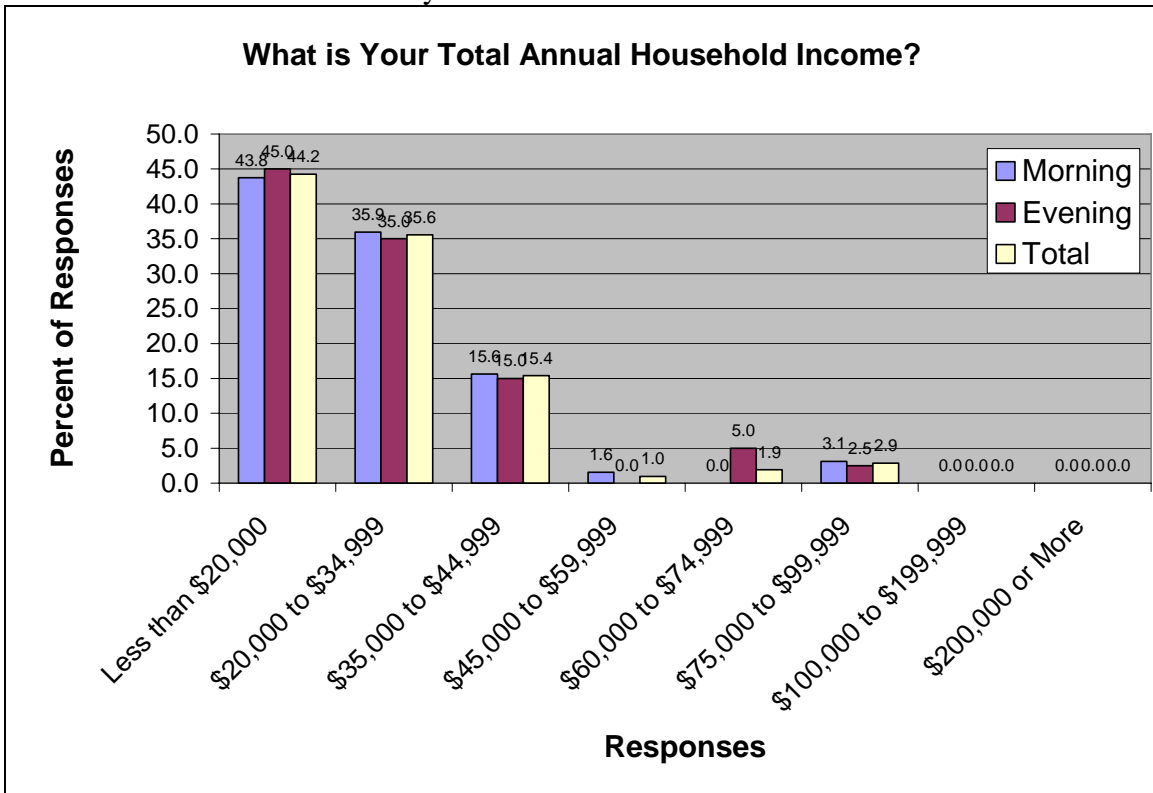




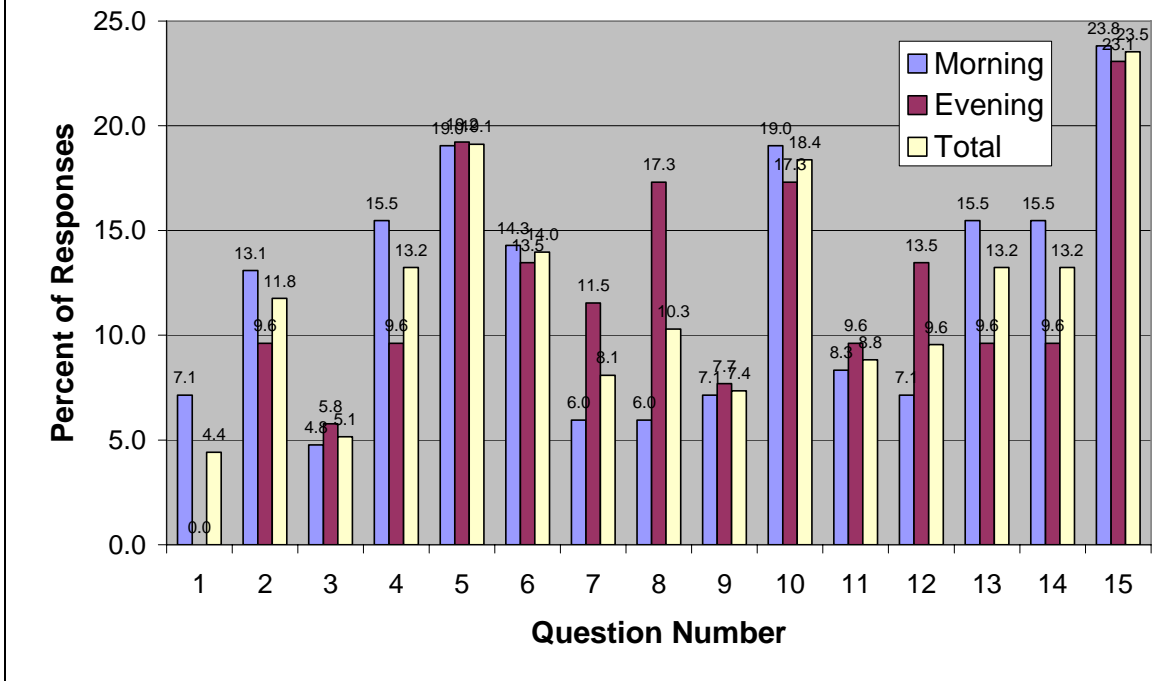
14. How many days per week do you work?



15. What is your total annual household income?



Omitted Responses by Question



### Appendix E: Comments

Comment	Route 5		Route 16		Route 20		Route 26		Route 46		Route 55		Route 59		All Routes	
	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish
1 more late bus from Twinbrook	1														1	
24 hour service											1		2		3	
add one more late trip to Sunday 57													1		1	
Be on time	4	1	10	2	9	1	11	8	1		10	1	17	4	62	17
better coordination with other buses and trains	1		1												2	
bigger buses on 26 at evening rush hour							1								1	
continue service							2								2	
coordinate schedules to decrease missed connections													2		2	
decrease crowding											1				1	
doing better			1												1	
Earlier Services		1			3	1		2	2	2	3	2	3	9	11	17
Every 10 minutes			1				1								2	
Every 15 minutes		1					1		1		1		2		5	1
every 20-25 minutes on 26 & 49. cut route in half							1								1	
Every 30 minutes		1													0	1
every bus stop should have a posted schedule, bench, protection from elements													1		1	
express lake -> shady grove; skip mont coll; more buses on 55											1				1	
Extend Hours	2														2	
extend hours on 26, 46 & 48; should run Glenmont->ss & west red line							1								1	
Extend Route # 10	1														1	
extend route 16 to 3am			1												1	
Extend the service	1					1									1	1
extend times on weekends									1						1	
have 58, 64, 59 run later													1		1	
have holiday service at 6 am													1		1	
Have schedules								1								1
have the 16 run until midnight on Sunday			1												1	

Comment	Route 5		Route 16		Route 20		Route 26		Route 46		Route 55		Route 59		All Routes	
	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish
if more busses on 16 and 24			1												1	
increase buses at rund house													1		1	
increase frequency	1	1	1		3	1	3	2	1		4		2		15	4
increase night trips											1				1	
increase service on 64; add another route on the goshen road													1		1	
keep dana on this trip	1								1						1	
keep earliest run on holidays															1	
langley park to bethesda					1										1	
later buses in germantown											1				1	
Longer hours, more routes	1			1											1	1
lower fares			1						1				1		3	
make 58 & 64 run to midnight seven days a week													1		1	
Making better the schedule for Route 58 -Saturdays and Sundays														1		1
more after midnight			1												1	
more buses on route	1	2	2	1	1		1				2		6		13	3
more destinations; better schedule							1								1	
more express routes; one going down 355 or GTC -> lakeforest											1				1	
More frequently on Saturday and Sundays													1			1
More late hour busses from 1 to 2 am	1														1	
more rush hour and late evening service, and more lit bus shelters	1														1	
more shuttles					1										1	
more timetables at all stops									1						1	
move bus										1					1	
operate until 1 am					1						1				2	
operate until 2 am			1								1				2	
return to old routes											1				1	
run later			5		3		4	1	1		4		7		24	1
run later on weekends esp. 75											1				1	
Serving better or passing latter												1				1

Comment	Route 5		Route 16		Route 20		Route 26		Route 46		Route 55		Route 59		All Routes	
	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish	English	Spanish
That the route 54 change schedule later for the night and earlier in the morning								1					1			1
The bus operator to be polite								1								1
use more direct routes					1										1	
use the SmartTrip	1														1	
watch out for passengers									1						1	
Weekday schedules on Weekends	1	1	2		1								1		5	1

All comments are taken from surveys exactly as they were written, though similar ones were combined to get a total.

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