

Metro Area Transit (MATBUS)

North Dakota State University

On-vehicle Survey Winter 2010

An on-vehicle survey of MATBUS riders on two NDSU campus routes was conducted in the winter of 2010. The objective of the survey was two-fold. The primary goal was to test mobile technology and processes to conduct on-vehicle and other rider intercept surveys. The second goal was to collect information for transit operations and planning purposes.

The survey was conducted as part of the Transit, Technology, and Public Participation Project. The project is evaluating the benefits of a diverse set of technologies on public participation in transit planning. The project is part of the Public Transportation Participation (PTP) Pilot Program, which is administered by the Federal Transit Administration.

This report presents a description of the survey design and methodology as well as the results of the survey. Information on participants concerns about privacy and other issues regarding the use of mobile devices to conduct on-vehicle surveys will be included in a later report.

Survey Design

The survey was developed by the Small Urban & Rural Transit Center (SURTC) under the direction of Metro Area Transit (MATBUS) staff. Development of the base survey was guided by existing rider surveys which were modified to meet MATBUS needs. As members of the North Dakota State University (NDSU) community were identified as the target population of the survey, additional questions about MATBUS service that affect the NDSU campus and its riders were added.

Riders were intercepted as they boarded the bus and invited to participate in the survey. They were provided with a handout describing the project as required by the project's protocol as approved by the NDSU Institutional Review Board (IRB). Participants were provided a mobile device or paper and pen to complete the survey. Upon completion, participants were offered a MATBUS koozie in recognition of their participation.

On-vehicle rider surveys were conducted on Route 33 on November 26th and Route 32 on December 7th. A total of 120 surveys were completed. Of these, 57 were completed using mobile devices and 63 using paper. The November 26th survey employed four surveyors using mobile devices and one surveyor using traditional paper surveys. The December 7th survey was conducted using two surveyors with mobile devices and two surveyors with paper surveys.

Route 32 serves the NDSU main campus as well as residential areas south and northeast (University Village) of the main campus. Route 33 serves the NDSU main campus as well as Klai and Barry Hall in Downtown Fargo and residential areas northeast of campus. Barry Hall is home to the College of Business and Department of Agribusiness and Applied Economics. Klai Hall is home to the Department

of Architecture. Many students attend classes and participate in other activities in these buildings which do not have student parking. Maps of Routes 32 and 33 are presented in Figure 1.

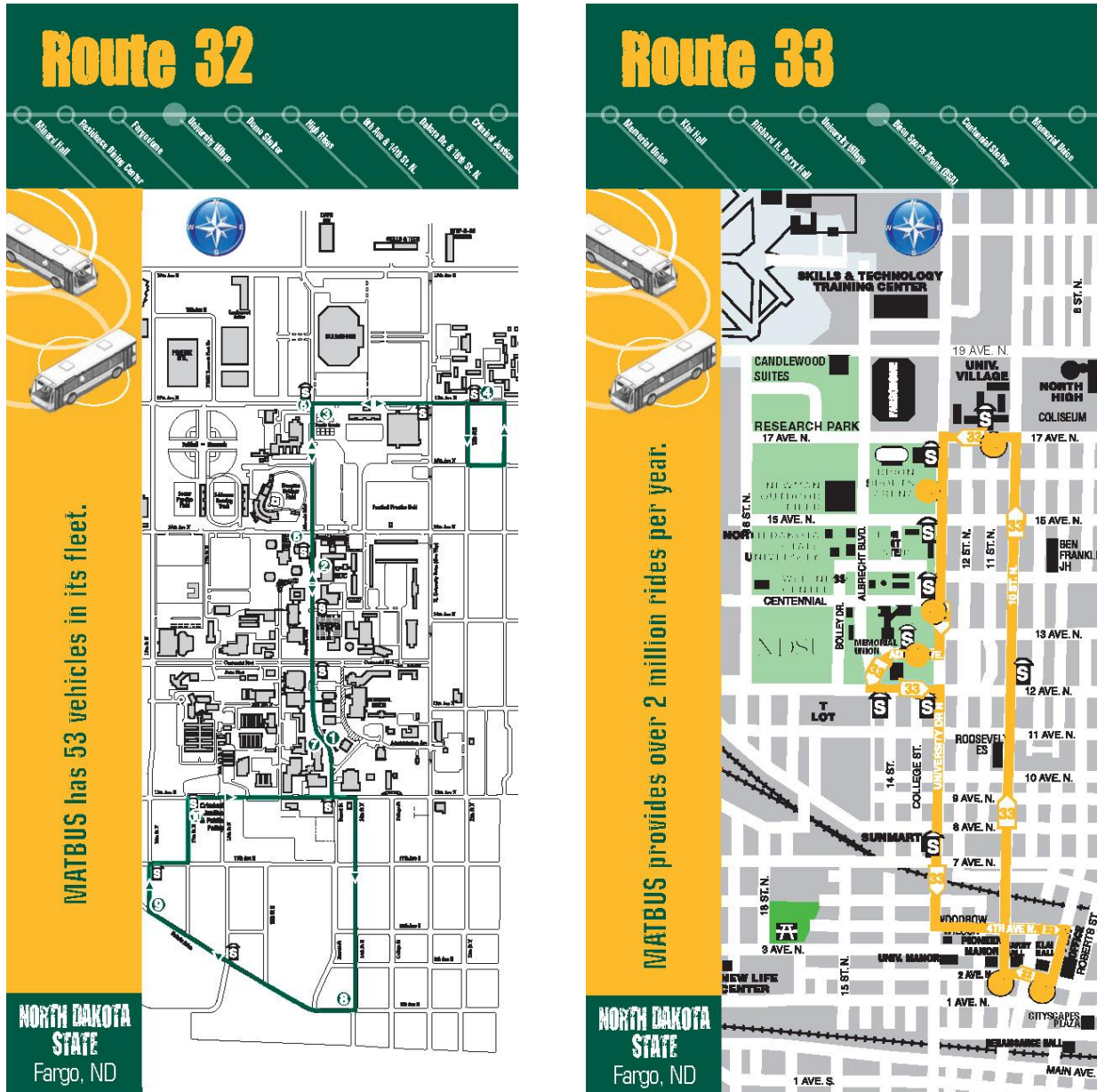


Figure 1. Route 32 and Route 33 Maps

The November 26th survey was conducted from 8:15 am to 10:30 am. A total of 74 surveys were completed: 40 using mobile devices and 34 using paper. Six declined taking the electronic survey, one declined to take the paper survey, and one individual asked to take the paper as opposed to the electronic survey (which they were allowed to do). During the post-survey debriefing, the surveyors who had used mobile devices all agreed that they would have been willing and able to manage two mobile devices.

Seventeen electronic and 29 paper surveys were completed on Route 32 on December 7th between 8:11 am and 10:15 am. Although surveyors stated that they were willing and able to manage two mobile devices following the November 26th survey, surveyors using mobile devices managed only one device as the distance between traveler origins and destinations was expected to be much shorter than those on Route 33. Two individuals declined to take the electronic survey, the same number that declined to take the paper survey.

Demographics

Survey participants were slightly more likely to be male, 54%, than female 46%. Response rate by gender is presented in Figure 2.

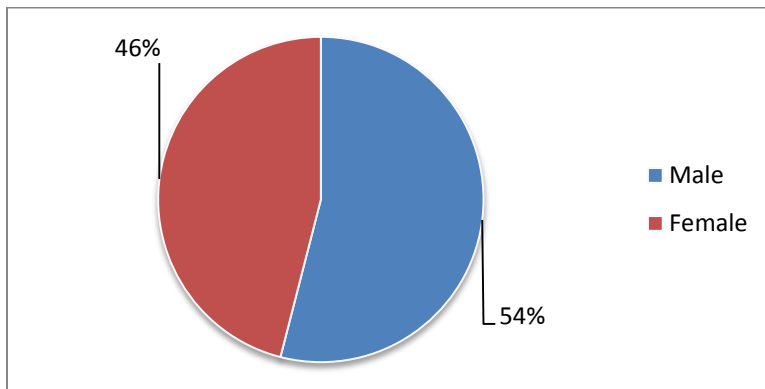


Figure 2. Response Rate by Gender

Most participants, 85%, were between the ages of 18 and 22. Eight percent were between the ages of 23 and 29, and 5% were aged 30 to 45. Response rate by age is presented in Figure 3.

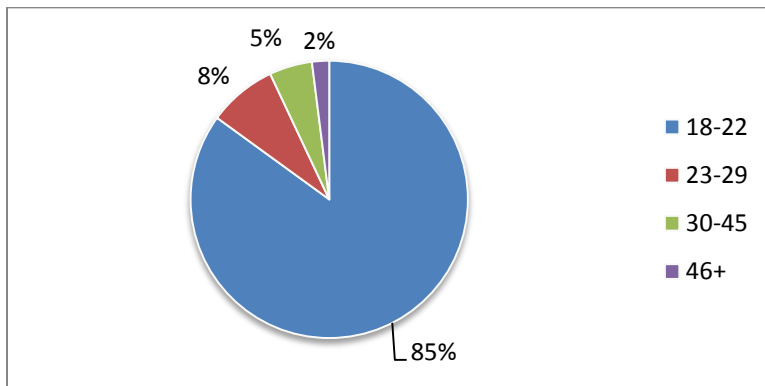


Figure 3. Response Rate by Age

Almost all participants, 94%, reported being North Dakota State University students. Most of these, 89%, stated that they were undergraduates.

Survey participants were asked to identify their race and ethnicity. The survey allowed for the identification of more than one race/ethnicity; however, no participant selected more than one. About three-fourths of participants, 77%, identified themselves as white. The second most reported race was Asian at 15%. Hispanic ethnicity and black were reported by 3% of participants.

Most participants, 88%, reported that they have access to a vehicle.

Survey participants were asked to identify if they had any conditions that require assistance to use MATBUS service. Hearing difficulty was reported by 3% of participants, trouble walking was reported by 2% of participants. Visual impairments that affected MATBUS use was reported by 1% of respondents.

Travel Behavior

MATBUS riders were asked the main reason why they used transit for the specific trip they were currently making. The most reported response was convenience, which was identified by 58% of riders. Weather was identified by 12% of participants. Eleven percent of participants stated that they used transit because they had no car. Saving money was reported by 6% of participants.

Participants were asked how they would have made the trip if MATBUS service was not available. Walking was reported by 48% of those surveyed. Just more than one-third of participants stated that they would have driven alone. Four percent of participants stated they would have biked while six percent said they would have carpooled. Two percent would not have made the trip, the same percentage that would have used a taxi.

MATBUS riders were asked what times of day they normally ride the bus. The highest response was from 6 am to 9 am, which was made by 56% of participants. This was followed close by 9 am to noon, which was reported by 53% of those surveyed. The responses fell dramatically after noon and even more in the evening. Only 29% stated they ride from noon to 3 pm, 21% from 3 to 6pm, and 9% from 6 to 10 pm. Regular transit use times are presented in Figure 4.

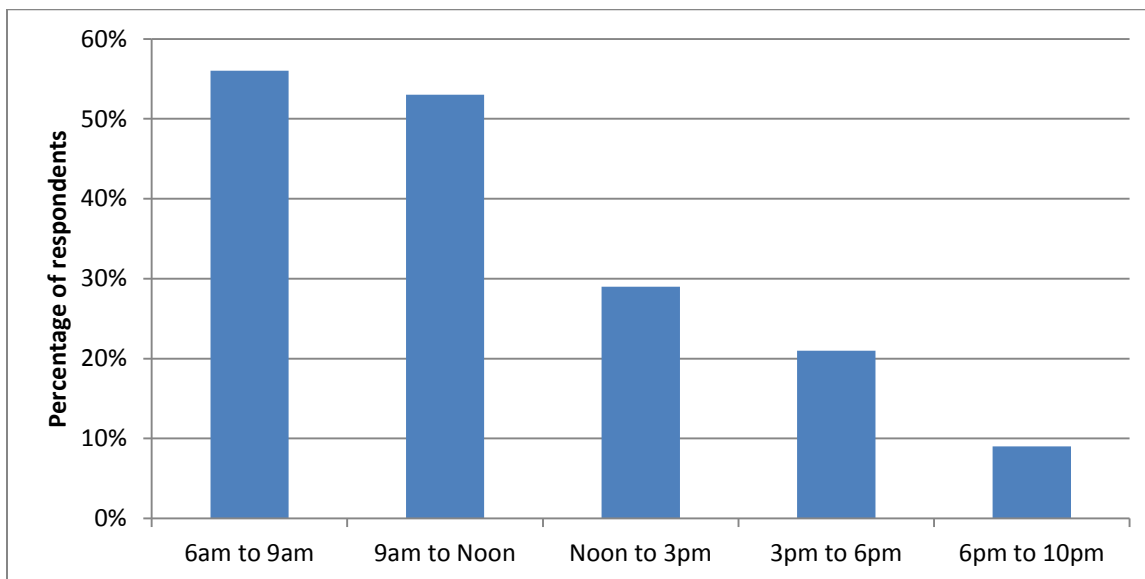


Figure 4. Regular Transit Use Times

Just more than half of survey participants stated that they have been riding transit for between one and five years. Riders who have ridden less than a year made up 43% of survey respondents.

Participants were asked for what purposes they use MATBUS. Ninety-six percent identified using transit to travel to or from school, and 85% stated school was the only reason they rode.

Two-thirds of those surveyed stated they would wait 10 minutes for the next bus. One-in-six would wait twenty minutes, the same amount that stated they would only wait five minutes.

Riders were asked how they typically spend their time when riding MATBUS. Just less than half of survey participants said that they relax when riding MATBUS. The second most common response was talking with friends, which was reported by 37% of those surveyed. Listening to music was reported by 29% of riders, while one-fourth reported texting while riding. Reading was identified by 15% of MATBUS riders. Figure 5 presents activities of MATBUS riders.

About one-third, 35%, said they would use wireless service on MATBUS if it were available.

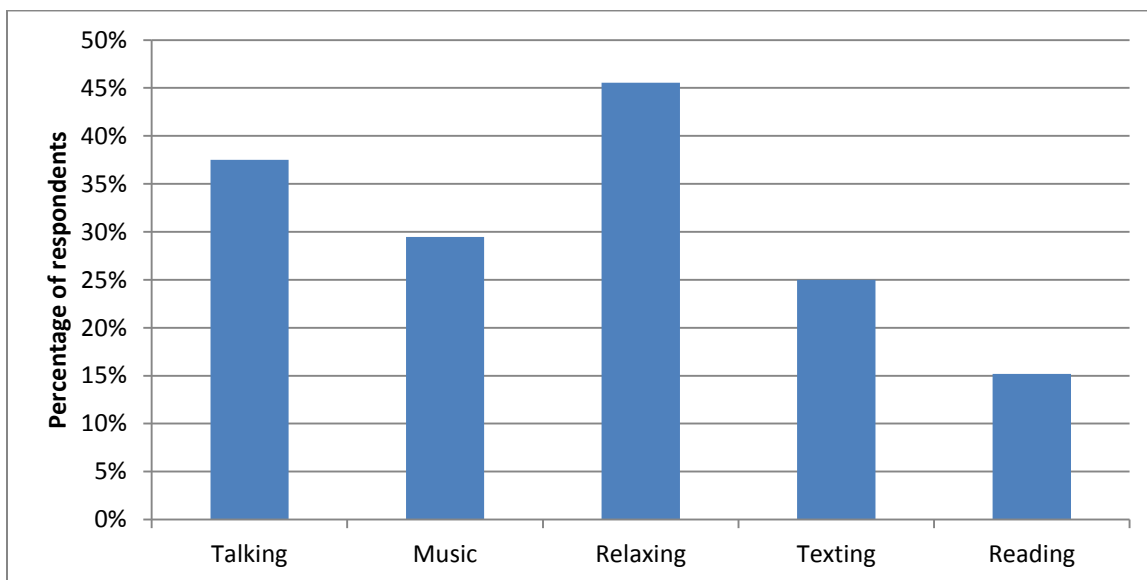


Figure 5. Time Use while Riding

Riders Opinions of MATBUS

Participants were asked questions about their opinions on MATBUS quality, driver attitude, and driver skill and safety. Eighty-nine percent rated overall MATBUS quality as good or excellent, 88% rated driver attitude as good or excellent, and 87% rated driver skill as good or excellent. Rider opinions of MATBUS are presented in Figure 6.

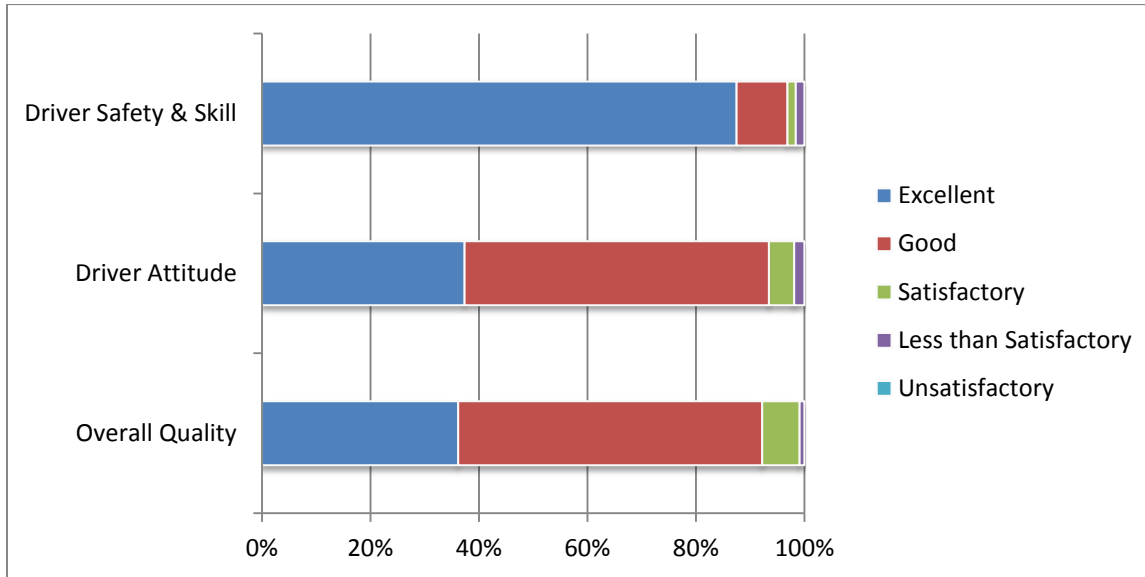


Figure 6. MATBUS Rider Opinions

More than three-fourths of survey participants, 77%, stated that MATBUS is occasionally late, and 8% reported that it is often late.

Of participants, 77% stated that there is an adequate number of buses in service. Approximately the same number of respondents, 78%, stated that the hours of service are adequate. Forty-one percent of participants, meanwhile, stated that they have been unable to board a bus because it was full.

Riders were asked to identify ways they thought MATBUS service could be improved. Comments included having more buses on each route, adding additional routes, and extending hours. Riders also stated that MATBUS needs to increase on-time arrivals, have warmer shelters, and safer, more considerate drivers.

Information Sources

Nearly all participants, 93%, stated that information on MATBUS is readily available. Respondents were asked to identify which methods they prefer to receive information about MATBUS services from, and they were allowed to choose more than one source. The results show that student riders get their information from a number of sources, with email being the most preferred, but no single method is preferred by a majority of riders. Just less than half stated that they prefer to receive information via email (Figure 7). The NDSU and MATBUS webpages were preferred by 31% and 22% of respondents, respectively. Facebook, Twitter, texts, and other mediums were preferred by smaller percentages of respondents.

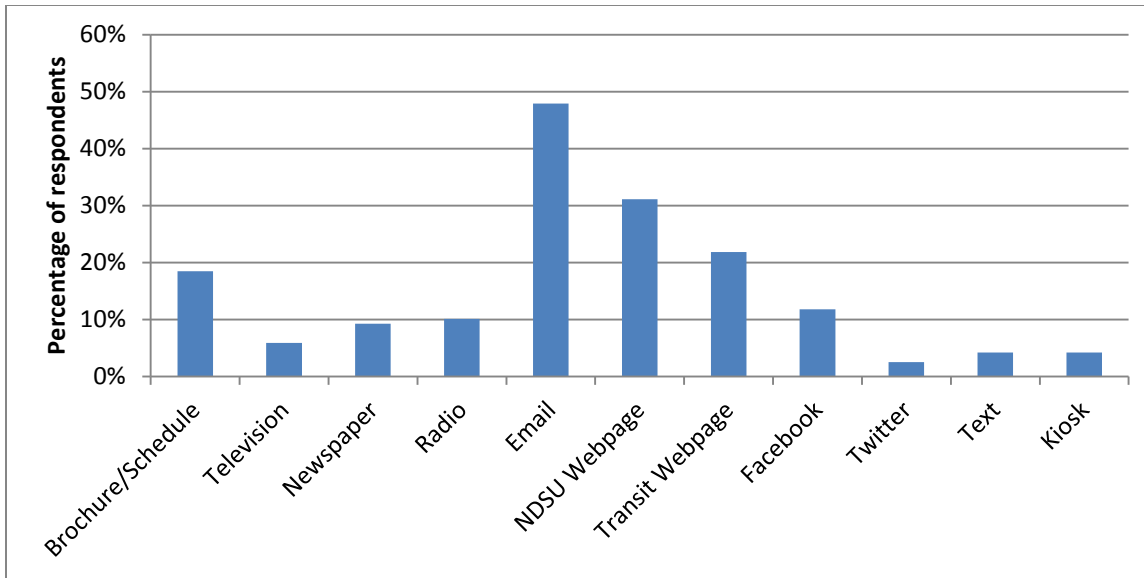


Figure 7. Preferred MATBUS Information Sources

Two-thirds of those riders surveyed stated that they use the MATBUS schedule to plan trips, and 62% reported using informational kiosks to do so; 45% would use travel information that was texted to them.

Three-fourths of survey participants stated that they had noticed recent MATBUS advertisements. Two-thirds of these stated that they had seen them on MATBUS shelters, 28% in the Spectrum (NDSU’s student newspaper), and 8% of them on Facebook. The location of MATBUS advertisements, as noticed by riders, is presented in Figure 8. Of those that noticed the advertising, 21% stated it impacted their travel behavior while 61% said it positively impacted their perception of transit.

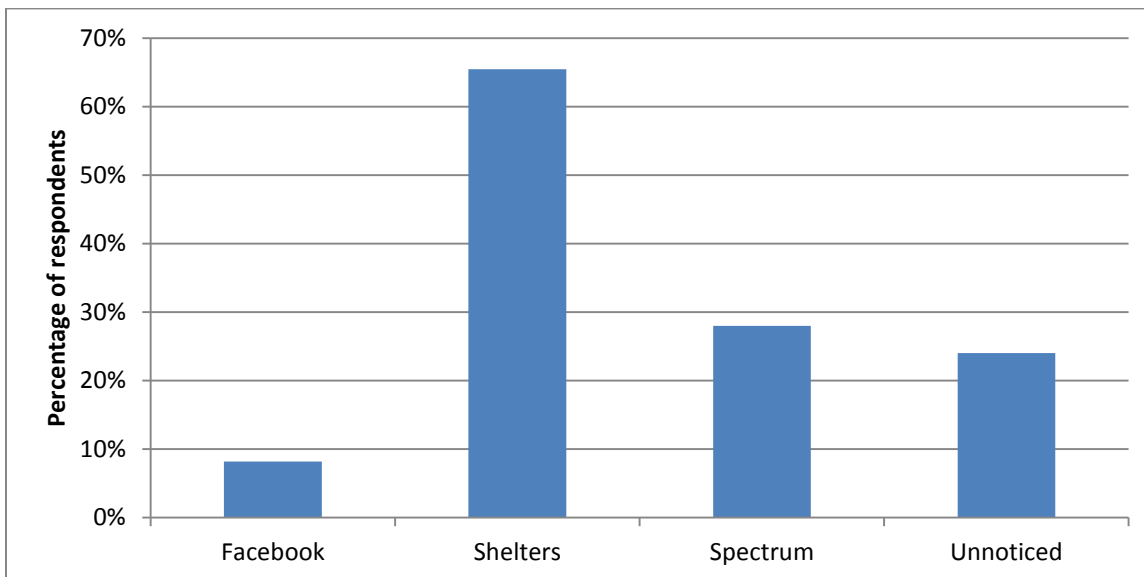


Figure 8. MATBUS Advertising Locations Noticed by Student Riders

Willingness to Pay for UPASS

North Dakota State University students were asked about their willingness to keep MATBUS service fare free by paying a semester fee. Twenty-three percent stated that they were unwilling to pay a semester fee (Figure 9). Twenty-nine percent said they would pay up to \$10 per semester, and 26% said they were willing to pay more than \$10 but not more than \$20 per semester. That leaves 22% who said they were willing to pay more than \$20 per semester, including 11% who are willing to pay more than \$30 and 7% who would pay more than \$50 per semester.

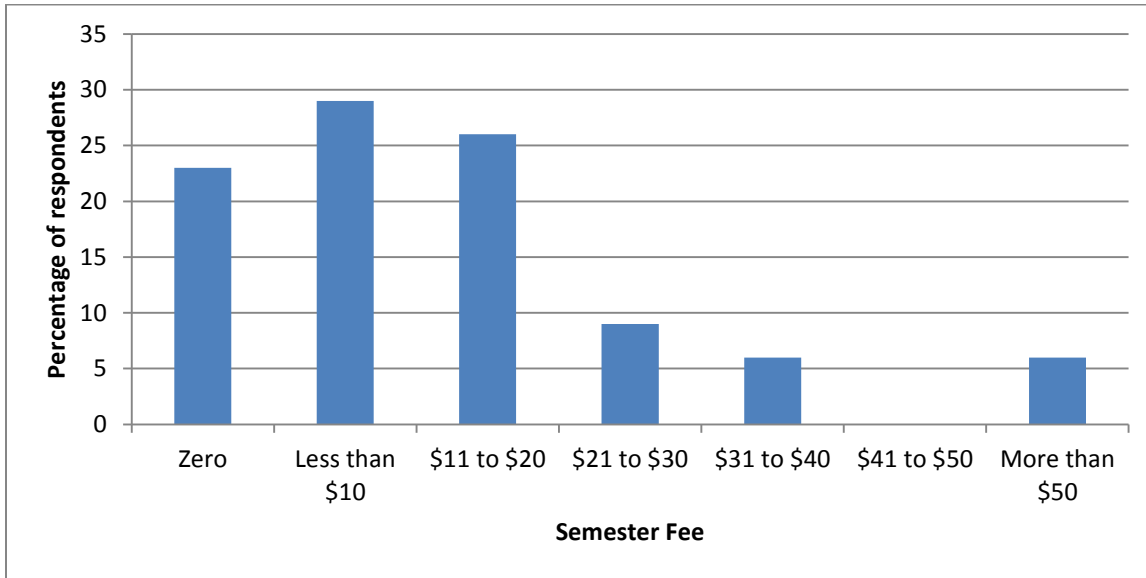


Figure 9. Willingness to Pay for UPASS