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*An Evaluation of Transportation Needs
of the Disadvantaged in North Dakota*

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An Evaluation of Transportation Needs of the Disadvantaged in North Dakota

Gary Hegland and Jill Hough

ABSTRACT

The disadvantaged population have barriers to a normal lifestyle. Mobility is one of these barriers. Approximately 15.4 percent of North Dakota's population is disadvantaged. These individuals live in the metropolitan areas and in the rural, low-population-density counties, which have limited transportation.

The Upper Great Plains Transportation Institute (UGPTI) developed a survey to identify the transportation needs of the disadvantaged population and measure how those needs are being met. The UGPTI worked with four Centers for Independent Living that serve the state of North Dakota. Each of the centers selected a random sample of their clients and mailed the survey to them.

The results of the study are based on a 21 percent response rate. Results showed that more people would use transit if it were available to them. Almost 60 percent of the disadvantaged use transit either daily or weekly, and the majority perceived they rode less than five miles per trip. Most respondents use transit for medical appointments and shopping. The respondents indicated they primarily use demand-response transit, which usually is provided by taxi, senior bus, and paratransit. Riders think the drivers are well-trained to accommodate their needs and times at bus stops are adequate. The weekend and holiday hours of services were the most inadequate followed by scheduling and number of trips provided.

This study found that a higher percentage of North Dakota disadvantaged reported problems with transportation than the national average.

1. INTRODUCTION

This section points out that members of the disadvantaged population have many barriers to a normal lifestyle. One barrier is transportation. This section will identify the research problem, the objectives of the study, and how the balance of the report is organized.

Whether disabled from birth, from an accident, or deterioration from age, the disabled often require some specialized transportation.¹ In North Dakota, there are differences between a resident with and without disadvantages in areas of income, employment, health care, life satisfaction, and transportation. A large percent of the disadvantaged population is made up of the elderly (over 65) and that segment of the population continues to grow.

Upper Great Plains Transportation Institute (UGPTI) conducted a survey to identify the extent to which transit service providers serve the disadvantaged living in North Dakota. This survey was conducted to measure the service from the clients/customers point of view.

Four independent living centers serve all the counties in the state with the exception of Sheridan County. Centers for Independent Living are run and operated by people with disabilities for people with disabilities regardless of age, race, or any other discriminatory category.

The UGPTI provided the surveys to the four centers and they distributed the surveys to a random sample of clients who live throughout North Dakota. There are 25 different transit system operations covering the state of North Dakota and the four tribal nations located in the state. The clients served by the four centers for independent living use these transit systems for their mobility.

1.1 Characteristics of North Dakota Disadvantaged

This section has some facts about the North Dakota disadvantaged population, including the state's ranking with the rest of the nation, their distribution throughout the state, and the male and female proportions.

North Dakota has a disadvantaged population of about 98,718 citizens, or about 15.4 percent of the total population; the United States has 49,746,248 disadvantaged citizens or 17.4 percent of total population.² North Dakota ranks 47th in the nation for the total number of disabled above the age of five years old, and ranks 43rd for disabled as a percent of the total population. This may

¹ There is a body of literature specific to transportation of the elderly. However, for this survey we have combined the elderly with the total (five and older) population who have disabilities.

² U. S. Census : U.S. Bureau of the Census. 2000. *State and County Quick Facts*, Washington DC. 21 July 2003 < <http://quickfacts.census.gov/qfd/states/00000.html> >

increase because North Dakota's population older than 65 is 14.7 percent, ranks fifth in the nation.

In North Dakota 64 percent³ of the disabled age 21 to 64 are in the labor force, while in the general population, 77.6 percent⁴ of those age 20 to 64 are employed. Many of the counties with a high percentage of disadvantaged also have low population densities. The counties with the 10 largest North Dakota cities have a relatively low percentage of disadvantaged populations. According to census data, counties with lower population totals have a higher percentage of disabled individuals.

For this report, the disadvantaged are divided into three age groups: the "young" (age five to 20 years), the "working" class (age 21 to 64 years) and "seniors" (age 65 and older). The number of males exceeded females in the young and working age groups within the state population.

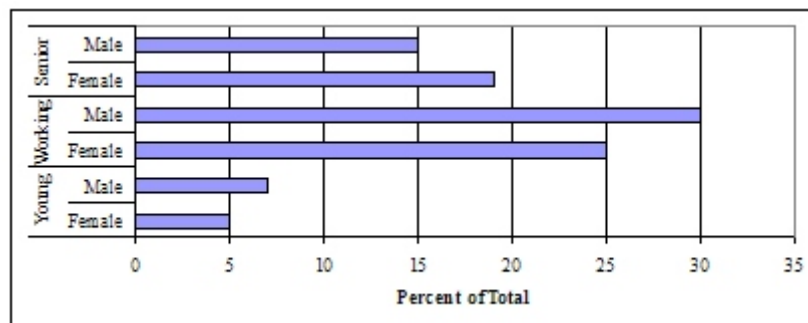


Figure 1.2 The number of disadvantaged by gender in the three age groups. According to 2000 Census, North Dakota's disadvantaged population is 97,718.

However, that ratio reverses for the senior age group, where the number of females exceeded the males (Figure 1.2). North Dakota's disadvantaged population older than 64 at 34 percent is higher than the nation's average of 28 percent older than 64.

1.2 The Research Problem

Life for those individuals without the transportation necessary to join in life activities is severely degraded at best. The two primary types of federally subsidized transportation services available to the disadvantaged are fixed route and demand response. The type utilized is dictated by the type and severity of the individual's disability. The disadvantaged need the right service at the

³North Dakota State Data Center. *The Population Bulletin*, Vol 19 No. 1 January 2003

⁴U. S. Census : U.S. Bureau of the Census. 2000. *QT-P24. Employment Status by Sex: 2000. Summary Files 3 (SF 3) - Sample Data*. Washington DC. 21 July 2003
< http://factfinder.census.gov/servlet/QTTable?_ts=76842470452>

right time. They need service during business hours, and also may need assistance after business hours, such as evenings, on weekends, or on holidays.

1.3 Objectives of the Study

The objectives of this study are:

1. Identify the primary transportation needs of the disabled residents of North Dakota.
2. Determine the degree to which their needs are being met or not being met by measuring quality of service and availability of service.

1.4 Report Organization

Section two describes the methodology of the report. Section three contains the results of the survey. Section four contains the conclusions and recommendations.

2. *RESEARCH METHODS*

This paper is based on data collected from disadvantaged clients in North Dakota who are served by four Centers for Independent Living. The four centers are: Dakota Center for Independent Living, Bismarck, N.D.; Freedom Resources Center for Independent Living, Inc., Moorhead, Minn.; Independence, Inc., Minot, N.D.; and Options Interstate Resource Center for Independent Living, East Grand Forks, Minn.

2.1 Survey Instrument Design

The questionnaire contained 34 questions. The first eight questions were designed to gather demographic information. The next five questions related to the respondents ability to drive, the type of transportation they use, if public transportation is available to them, and if they use public transportation. The individuals not using public transportation were asked to stop completing the survey and to mail back their responses in a postage-paid envelope.

The next section of questions related to public transportation use, such as how frequently the respondent rides public transportation, the number of years they have been using public transit, purpose of their trips, and typical length of ride in minutes and miles. We also asked about how much they pay for a one-way trip. The last 11 questions were developed to better understand the respondents level of satisfaction with the transportation services available to them. Each of the questions is presented in greater detail in the next chapter. Finally, respondents were given an opportunity to write other comments.

2.2 Mailings

The Centers for Independent Living selected a random sample from their mailing list of clients and mailed the surveys directly from their centers. The survey recipients were asked to complete the survey or if they were unable to complete it themselves they were asked to have someone in their household help them complete it. There were 1,360 surveys mailed to the random sample selected by the centers (Table 2.1). Two hundred and eighty-five surveys were returned. Complete confidentiality was ensured as none of the names of the clients was released at anytime.

Table 2.1. Surveys Mailed to Respondents

Mailings	Total Sent	Total Received	Response Rate %	Transit Users	Transit User Response Rate %
All	1360	285	21	103	36.1

For analytical purposes, the survey data were separated and compared by age group, including, “young” for ages five to 20, “working” for ages 21-64, and “senior ” for respondents older than age 65. The analysis was conducted primarily developing frequencies and mean values. Some chi-square tests were used to identify statistical significance between age groups. The next chapter contains the results from this questionnaire.

3. SURVEY RESULTS

We will cover the following topics to the extent that they are covered in the survey:

- the demographics of all the survey respondents,
- the special needs of all the disadvantaged,
- assessment of the use of public transportation by the disadvantaged who ride transit, and
- assessment of the quality of services provided by the transportation providers.

3.1 Demographics of All Survey Respondents

Some general demographics of the respondents are important to identify how the survey respondents compare to the disadvantaged in the general population. Statewide, the disadvantaged population is 51.5 percent male and 48.5 percent female.⁵ The total number of female respondents (58 percent) was greater than the number of male respondents (42 percent). For the group who have ridden transit, the percent of females (63.7 percent) over males (36.3

⁵ U. S. Census : U.S. Bureau of the Census. 2000. *QT-P24. Employment Status by Sex: 2000. Summary Files 3 (SF 3) - Sample Data*. Washington DC. 21 July 2003
< http://factfinder.census.gov/servlet/QTTable?_ts=76843114218 >

percent) is even greater; they are the group who completed the second part of the survey. However, Julia Bommelman, general manager of Metro Area Paratransit, Fargo, N.D., said that organization's ridership is very close to even among male and female riders.⁶

When the respondents are divided by age, the "young" (ages five to 20 years), the "working" class (ages 21 to 64 years) and "seniors" (ages 65 and older), women outnumbered men in both the working group class and senior citizens group. However, for the group of five to 20 year olds, men outnumber women in the survey.

The percent of disadvantaged increases with age. At 75 and older the disadvantaged make up about 50 percent of the population. The working age group had the largest percent of respondents and also covers the largest span of years (Figure 3.1). The age distribution of the survey respondents was close to the same as the age distribution in the North Dakota general population, the largest difference being in the senior group of 9.3 percent (Figure 3.2). The young age group was under-represented and the seniors were over-represented. The senior group was over-represented in the survey by 9.3 percent, while the young group was under-represented by 6.6 percent.

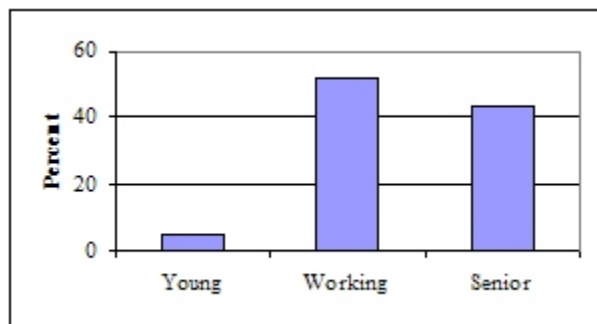


Figure 3.1 The age breakdown of the survey respondents. N=277

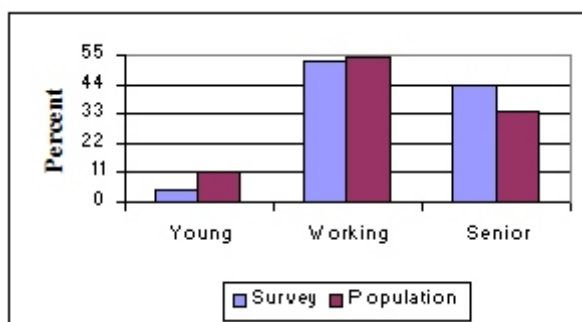


Figure 3.2 Comparing the age distribution of the survey respondents (N=285) with disadvantaged in the state population (N=97,817)

The respondents were closely proportionate to the general population, as the survey respondents were Caucasian (91 percent), followed by Native American at 7 percent, and the balance 2 percent. By comparison the general population was 92.4 percent Caucasian, 4.8 percent American Indian or Alaskan Native and the balance was 2.6 percent.⁷

⁶ Bommelman, Julie telephone interview. May 2003.

⁷U. S. Census: U.S. Bureau of the Census. 2000. *P6. Race [8]- Universe: Total Population, Census 2000 Summary Files 3 (SF 3) - Sample Data*. Washington DC. 21 July 2003
<http://factfinder.census.gov/servlet/DHTMLTable?_ts=76840671295>

In the lower two income levels (\$0 - \$15,000 and \$15,000 to \$24,000), women outnumbered men. At the second two levels (\$24,001 - \$36,000 and \$36,001 - \$45,000), men outnumbered women, (Figure 3.3). The higher income levels did not have enough individuals to establish a pattern.

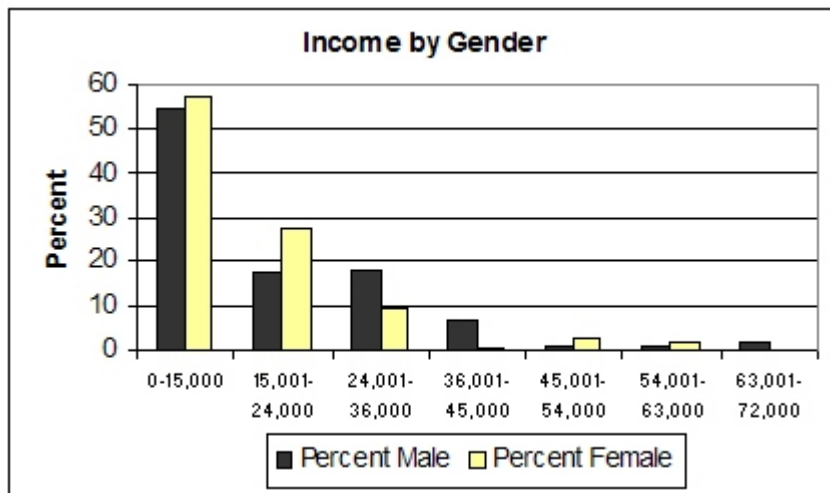


Figure 3.3 Shows Income of Respondents by Gender Grouping. N=244

Level of education attained by respondents is detailed in figure 3.4

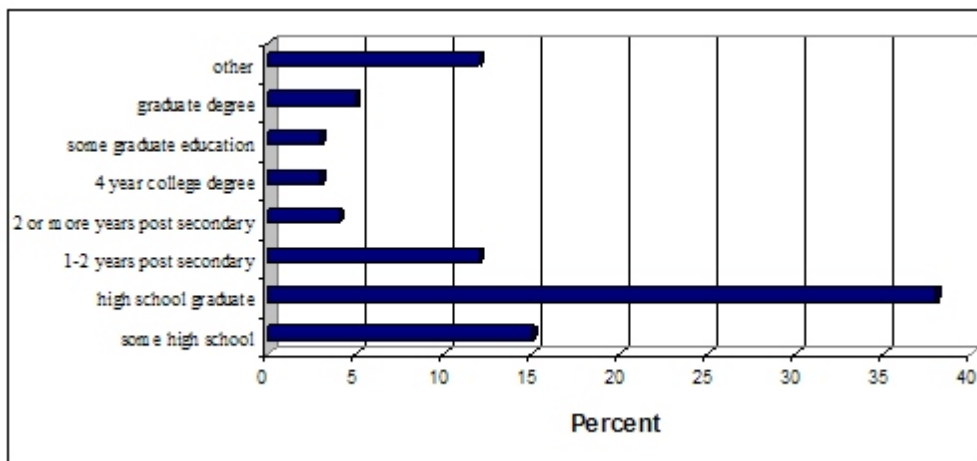


Figure 3.4 Reported educational attainment of respondents. N=267

By the chi test we found no statistical significance between gender and educational attainment. The working class age group had 17 percent who completed college or more education, while the senior age group had 10.8 percent who completed four years of college or more.

3.2 Special Needs of Surveyed Respondents

This section will review some special needs of the disadvantaged, such as whether they can operate a vehicle, if they need lift assistance to enter a vehicle, and their preferred mode of transportation. Some federal funding programs designed to assist the disadvantaged also are reviewed comparing North Dakota to other states for federally assisted dollars for transit support. Sixty percent of respondents indicated they could operate a vehicle (Figure 3.5). The ability to operate a vehicle may affect the income potential of the disadvantaged person, as only 2.5 percent of the disadvantaged who cannot operate a vehicle reported earned income over \$24,000 per year (Figure 3.6).

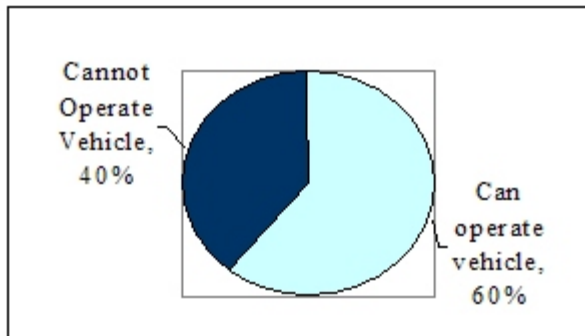


Figure 3.5 Percent of respondents who can and cannot operate a vehicle. N=277

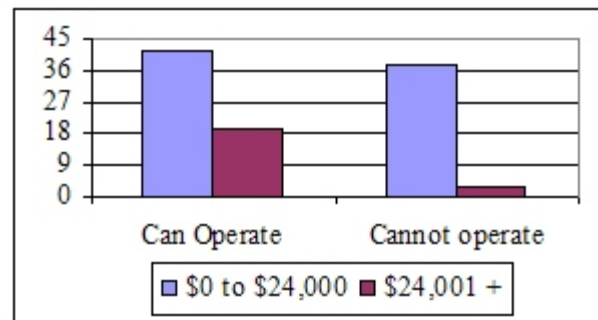


Figure 3.6 Income based on whether individual can operate a vehicle or not. N=241

Only 18 percent of respondents reported they need a lift for vehicle access (Figure 3.7). The need for a lift to get into a vehicle was not a major deterrent to operating a vehicle. The majority of people who cannot operate a vehicle do not need a lift to access a vehicle (Figure 3.8).

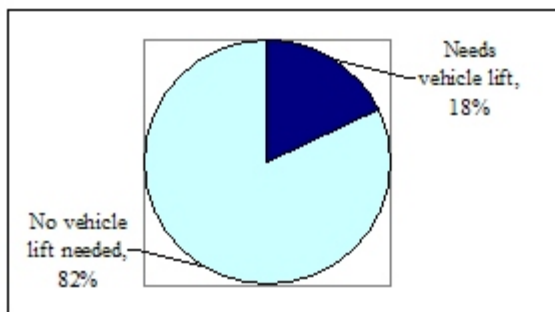


Figure 3.7 Percent of individuals needing a lift to access a vehicle. N=278

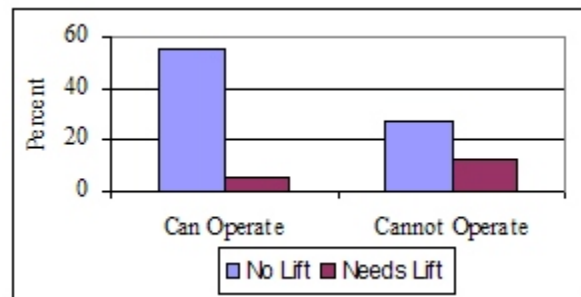


Figure 3.8 Compares needing a lift and operating a vehicle. N=272

Disadvantaged people have various sources for transportation; the respondents chose from among five types of transportation including: personal auto with a driver, driving themselves, public transportation, ride with friends, ride with family members, and an “other” choice was given (Figure 3.9). Driving themselves (50.5 percent) or riding with a family member (43.7 percent)

were the two most common means of commuting. Public transportation seems to be the third choice for mode of travel and is used by 31.6 percent of the respondents.

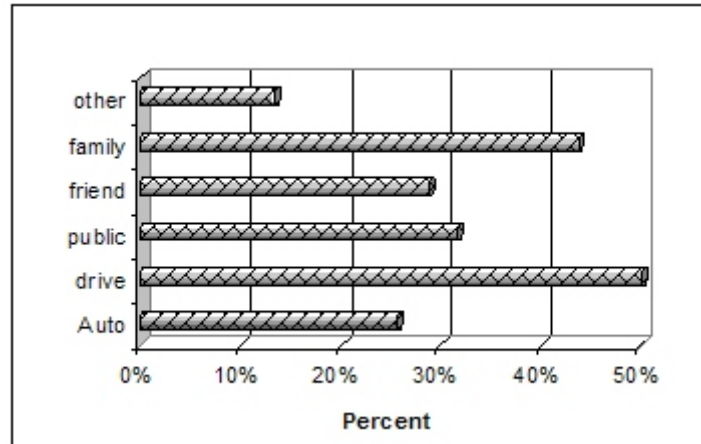


Figure 3.9 Mode of travel used by respondents, they could choose more than one. N=285

3.3 Assessment of the Utilization of Public Transit from Users

This section explores the extent to which public transportation is used in North Dakota, how long the disadvantaged have been using it, and the time and distance riders travel. North Dakota has subsidized public transportation available in every county, but in some counties it may be limited, especially in rural areas. There were 170 respondents (62 percent) from the survey who reported they had public transportation currently available to them (Figure 3.10). Later in the survey fewer people responded to the question, “Do you have transit available to you?” One hundred forty-eight of the 213 respondents (69.4 percent) who responded reported they would use public transportation if available (Figure 3.11). Almost 15 percent of the respondents who reported they would use public transportation also reported that public transportation is not available to them.

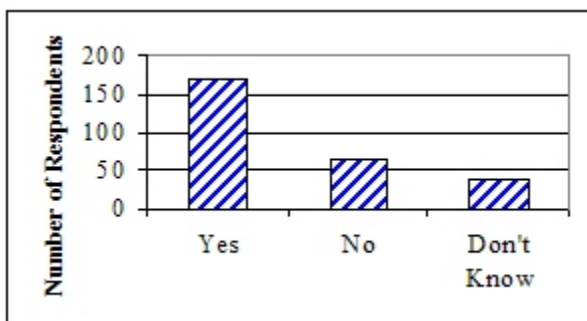


Figure 3.10 Shows the number of respondents who have transit available to them. N=274

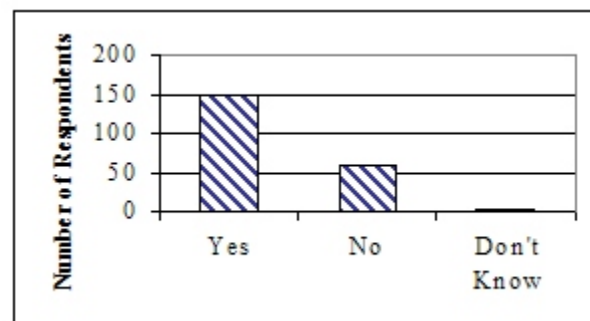


Figure 3.11 Show the number of respondents who said they would use transit if available. N=213

Survey respondents who did not have any experience in riding public transit were asked not to complete the balance of the survey dealing with the extent to which they use transit and the quality of service from transit.

Public transportation is used daily and weekly by 59 percent of the 98 survey respondents. A majority (60 percent) use public transit at least daily or weekly and almost 22.5 percent use it daily (Figure 3.12).

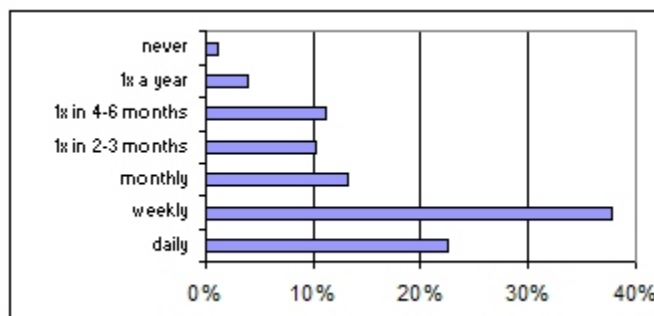


Figure 3.12 The frequency respondents use transit.
N=98.

The amount of time people have been using public transit ranges between less than one year to more than 11 years, with the smallest group (11 percent) being less than a year, (Figure 3.13). However, the trend line seems to be decreasing, meaning a lower percent of newcomers are using public transit (the group riding for one to two years is outside the trend line).

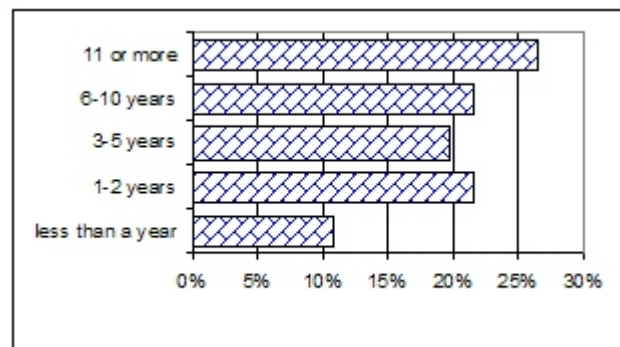


Figure 3.13 The number of years individuals have been using public transportation.
N=102

Most of the respondents (88 percent) have a short distance to travel via transit, five miles or less, to a community where they conduct most of their business. This may imply there is limited public transit available to the survey respondents who live in the rural areas.

When analyzing the time and distance for the people using public transportation, 40 percent claimed they traveled less than a mile in less than 15 minutes, while 30 percent claimed they traveled one to five miles in less than 15 minutes; 20 percent claimed they traveled six to 10 miles in the same time. There are factors that contribute to the varying times for given distances traveled, such as number of times the bus stops during the trip, condition of the roads, and weather. For some disadvantaged it may be difficult to spend extended periods of time on a bus.

The most common reasons for people to use transit for travel was medical (68.9 percent) and shopping (47.6 percent) (Figure 3.14).

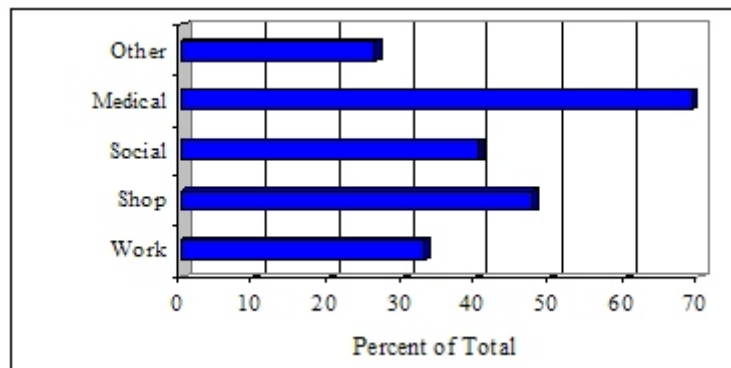


Figure 3.14 Reasons people with disabilities use transit for travel. N=103

When the respondents are broken down by age group the results were similar. Both the working age group and seniors travel mostly for medical reasons (Figure 3.15). The working age group travels more for work than does the senior age group. There are only four in the young age group; two used transit and two did not.

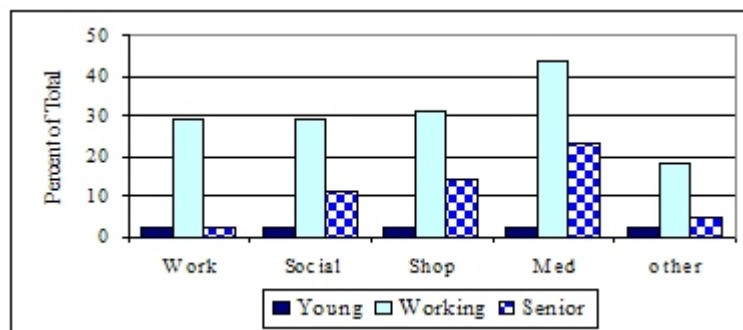


Figure 3.15 The reasons that disadvantaged people travel, by age group. N=103

Respondents were asked what the required lead time was for reserving a ride. The majority (57 percent) responded that one to three days was required (Figure 3.16).

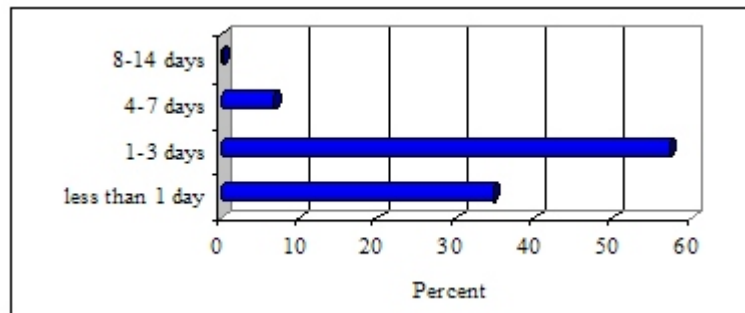


Figure 3.16 Lead times for scheduling rides with transit. N=89

Choices and options for the type of public transit (e.g. taxi, paratransit, and as identified in figure 3.17) available for many North Dakota disadvantaged varies with the location of their residence. The N.D. Department of Transportation (NDDOT), through their public transit program, subsidizes many different types of public transit throughout the state. The county or metropolitan area of residence determines options for subsidized travel. The choice varies by county because different entities in different counties have sought out federal assistance funding. The disadvantaged are eligible, in all counties, for subsidized travel assistance. In some counties, that includes taxi. Taxis are the most frequently used mode of travel (Figure 3.17). Demand response (rather than fixed route) is the most common type of transit throughout the state and may occur as senior center bus, paratransit, county bus, social services and vans, which were identified in this survey. This service has the flexibility to offer curb-to-curb or door-to-door

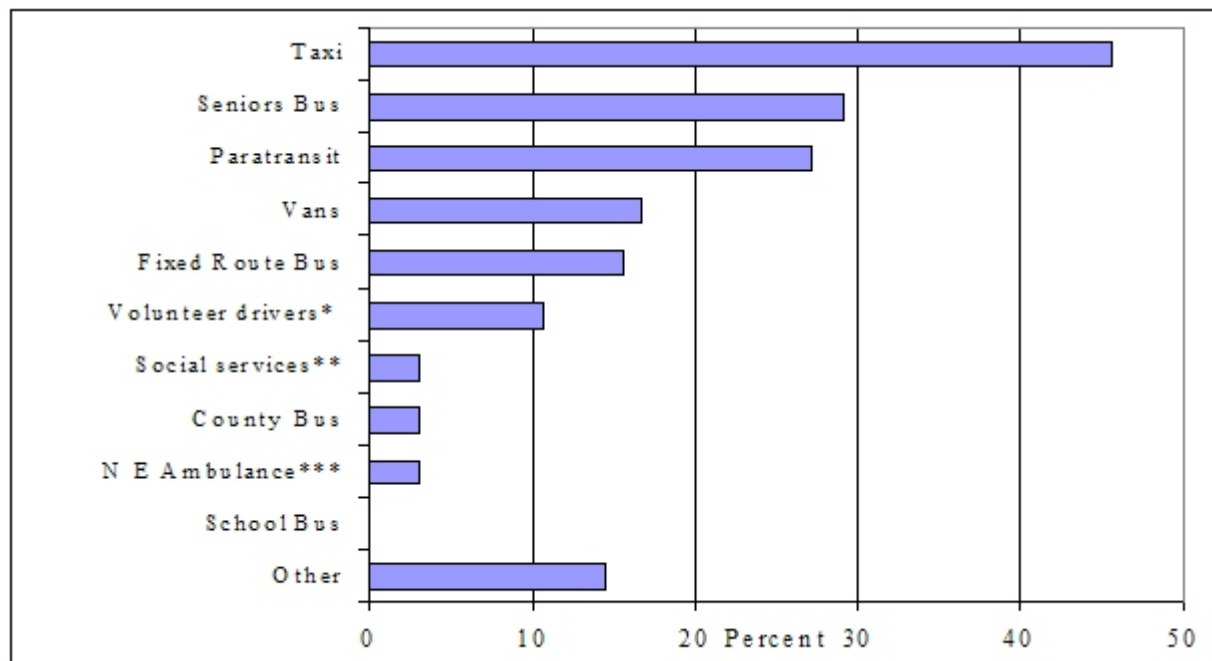


Figure 3.17 Frequency of use for various types of public transportation in North Dakota N=103

Note: * Volunteer drivers refers to volunteer drivers with personal vehicles.

** Social Services refers to drivers reimbursed to use own/individual vehicles

*** N E Ambulance refers to non-emergency ambulance

service.

To determine availability of public transportation, respondents were asked if they had any unmet transportation needs. More than half of the respondents (60.8 percent) indicated they did. The respondents were then given 10 items to select from to identify as a source of unmet needs.

The items include:

- i. increased service hours (Service)
- ii. spend less time at bus stops (Time)
- iii. more frequent trips per day (Day)
- iv. more frequent trips per week (Week)
- v. more frequent bus stops (Stops)
- vi. more convenient scheduling (Schedule)
- vii. cheaper fares (Fares)
- viii. door-to-door service (D t D)
- ix. more frequent service from rural areas to large cities for medical, shopping, and visiting (Lge City)
- x. reduced riding time (Ride)
- xi. other (Other)

The four-most requested improvements in services are increased service hours, cheaper fares, more convenient scheduling, and reduced riding time (Figure 3.18).

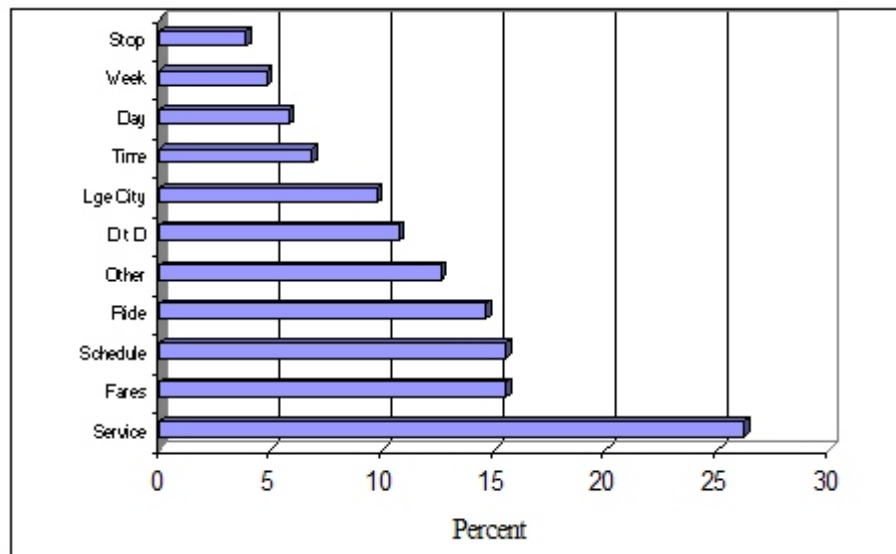


Figure 3.18 Selections for unmet public transportation service needs.
N=103

The Harris Poll found that on the national level, 30 percent of people with disabilities say that inadequate transportation is a problem.⁸ Our survey revealed the disadvantaged in North Dakota reported a higher percentage (36 percent) than the national average of unmet transportation needs.

A comments section immediately followed this question and the more frequently stated complaints related to timing. For example:

- getting people to work late
- not giving enough time for the elderly to exit their living quarters
- bus starts moving before individuals have an opportunity to sit down

3.4 Assessment of Transportation Provider Services by Users

Rather than a “yes” or “no” answer, the Likert response scale was used to measure the quality of services provided by the local public transportation provider to disadvantaged customers. This scale has five response choices: 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, and 5 = strongly disagree. A numeric mean has been determined for each of the measured services. The services are then ranked according to the mean value (Figure 3.19), the higher the mean value the more people wanted to see improvements to the service. The median value for the mean is 2.38, so services that have a mean value greater than 2.38 are services below average in quality. Each of the services evaluated will be discussed in detail.

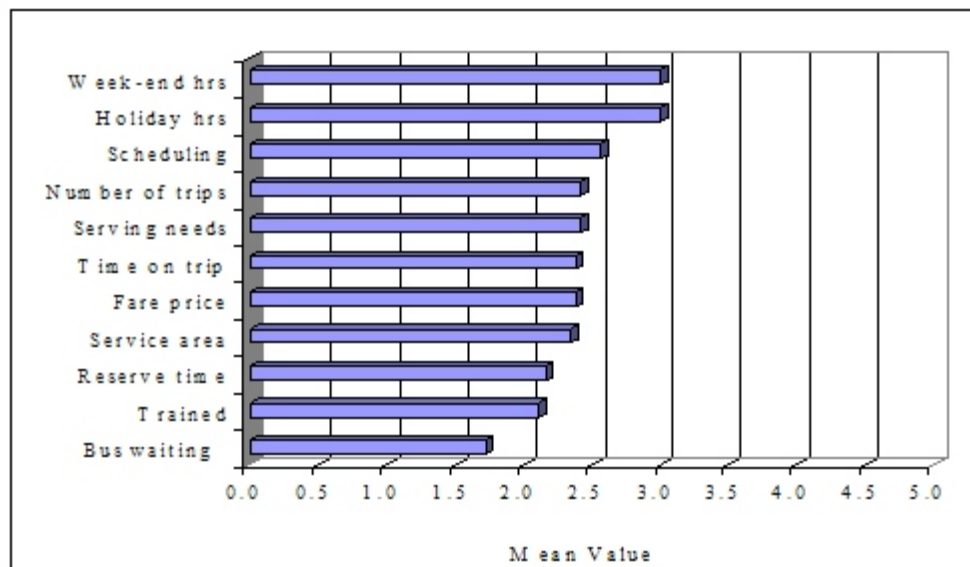


Figure 3.19 Mean values for quality services, for reserve time and bus waiting the reciprocal was used due to the wording of the question. N=103.

⁸ Harris Poll #56, October 14, 1998, Harris Interactive, Rochester, NY

The first measured service was whether public transportation does a good job serving the client's needs. The mean value was 2.42, and more than 63 percent strongly agreed or agreed that transportation providers are serving their needs.

Training provided to the drivers of public transit is sufficient to meet the needs of clientele using the system. The mean value is 2.11; nearly 30 percent strongly agreed and 42 percent agreed with this statement. This implies that the public services providers are doing a satisfactory job training their drivers to meet the needs of the disadvantaged.

Customers are satisfied with the price of one-way trips in North Dakota. The mean value is 2.38; more than 20 percent strongly agreed and almost 40 percent agreed with this statement. Note: 18.36 percent strongly disagreed or disagreed here, and earlier 15.5 percent wanted cheaper fares. This indicated consistency in the survey.

Customers are not satisfied with weekend hours offered; 37 percent (disagree or strongly disagree) would like to see improvements. The mean was 3.01 (Figure 3.20).

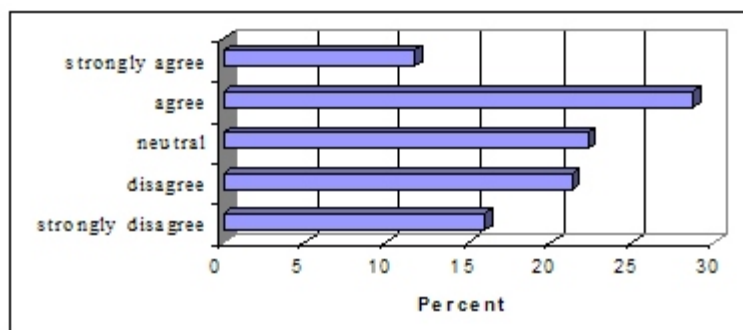


Figure 3.20 Client satisfaction with weekend hours. N=94

When evaluating weekend hours satisfaction by age group, 75 percent of the young disagree that weekend hours are satisfactory (Figure 3.21). The seniors age group, on the other hand, may be less active on weekends and are more satisfied with weekend services while more than 40 percent of the working group disagree with the weekend service hours. The differences among these groups are statistically significant at the chi test 10 percent level (Figure 3.21). Knowing which age groups are dissatisfied may help determine the solutions.

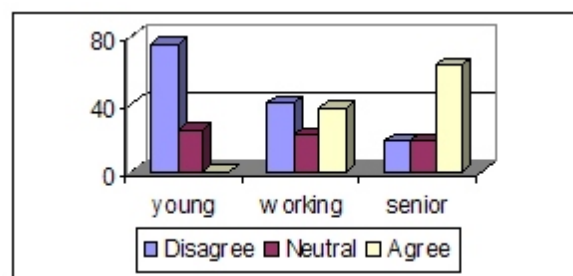


Figure 3.21 Agreement with weekend hours by age group. N=90

Respondents have the same feeling for holiday hours as for weekend hours. The mean was almost the same at 3.0; however, a larger percentage were neutral or agreed at more than 25 percent each.

Satisfaction of time spent on one-way trips is high; 85 percent strongly agree, agree or are neutral. This means that the trip length is adequate for most riders. The mean was 2.38.

Nearly 40 percent of recipients approve of scheduling procedures; however, the mean was 2.57, slightly above the median of 2.38.

It is possible that the disadvantaged do not fully understand all the issues that affect how a transportation provider schedules, or the reason for the scheduling.

The advance time required for passengers to reserve a ride may seem too long. The time required to reserve a ride varies with the transportation service provider. As was discovered earlier, most providers require one to three days, and slightly more than 37.4 percent agree that advance time required to reserve a ride is too long. The mean was 2.86. Agreeing with this statement meant reservation times are unsatisfactory, so a high mean value may indicate work is needed in this area. For comparative purposes we subtracted the mean from five and use that value, which is 2.14. This gives the mean value the same interpretation as in other questions. This value indicates that the riders are generally satisfied with this service.

It appears many respondents are satisfied with the waiting time at stops. The majority were neutral (45.8 percent) with the statement that bus stops were too long (Figure 3.22). Agreeing with this statement meant time at bus stops are unsatisfactory, so a high mean value may indicate work is not needed in this area. For comparative purposes we subtracted the mean from five and use that value, which is 1.72. This gives the mean value the same meaning as in other questions. This service has the lowest mean, so it indicates it is the most satisfactory of all services measured by this survey.

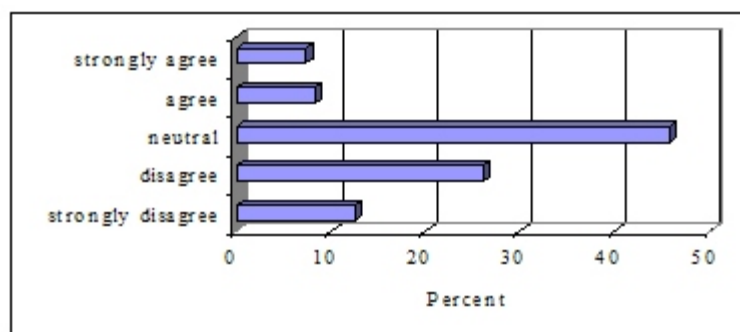


Figure 3.22 Response to waiting times being too long at bus stops. N=96

The group surveyed was satisfied with the number of trips offered by their public transportation providers. The mean response for number of trips was 2.42, just slightly over the median, and more than 40 percent agreed. Evaluating this by gender found there was no statistical differences measured between genders as indicated by the high Chi square number of .264.

The final category measured was the general service area of the public transportation provider. Clients were satisfied, meaning the area was not too large for reasonable service. The mean value was 2.34, slightly under the median. Again, more than 40 percent agreed with the statement.

In conclusion, the survey indicates that public transportation providers are doing an acceptable job of serving their clients in North Dakota. For seven of the 11 measured services, close to 40 percent of the respondents agreed with the quality of service. The two services that the disadvantaged most desire to see improvements in are hours of service on weekends and holidays.

4. CONCLUSIONS AND RECOMMENDATIONS

The disadvantaged make up a significant portion of the North Dakota population. Females and the elderly were represented by a higher percent in the survey responses than in the general population.

Requiring a lift to access a vehicle did not seem to hinder the ability to drive a vehicle. The ability to drive a vehicle did have significant influence on earned income potential. Education also plays a role, as the average educational attained by the disadvantaged is lower than the average educational attained by the general population. Mobility or the ability to go to school, work, medical appointments, shopping and/or visit friends plays an important role in feeling and being included in society for the individuals that are at a disadvantage to the rest of the population.

Some of the disadvantaged do not want to ride public transportation. Others would like to ride if it were available to them. North Dakota strives to make public transportation available to all disadvantaged. However, a higher percentage of North Dakota disadvantaged (36 percent) reported problems with transportation than the national average (30 percent). There still may be some negative stigma associated with riding public transit, or the other choices may be more convenient, as indicated by the fact that public transportation is the third ranked mode of choice.

There is a need for increased transportation for weekends and holidays. Service on weekends and holidays were the two services that the disadvantaged most desired improvements. By contrast, waiting at bus stops and the training of the drivers were the two services the disadvantaged thought were most ideal. Timing and scheduling needs increased focus to work out differences between what the transportation providers can accomplish and the needs of the disadvantaged.

Customers want fares to be lower and operators want them to be higher to cover their ever-increasing cost of doing business. In North Dakota most demand-response systems are subsidized by federal funding. Only six systems operating in the state do not get federal dollars to assist with operating costs. When comparing the disadvantaged population as a percent of the total population (15.23 percent), North Dakota ranks 43rd in the nation, but only the section 5311 apportionment for 2002 was North Dakota ranked 43rd; the 5311 for 2003 and 5310 for 2002 and 2003 were less than 43rd in ranking.

Coordination by all government agencies that assist in providing transportation to the disadvantaged may be the best and cheapest solution to the need for extended hours of services. Coordination also may help with scheduling and increase the number of trips transportation providers can make for any given time. Maximum use of federal dollars, coordination among government agencies, and discovering innovative funding by transportation providers will be the best means of increasing mobility to the disadvantaged population in North Dakota.

5. REFERENCES

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