Aging in Place: Intermodal Transportation and Options for Meeting the Unmet Transportation Needs of Nonmetropolitan Older Adults

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ABSTRACT

Most older adults today depend on driving their own automobiles as their sole mode of transportation, and are reluctant to give up driving. This is problematic because some older adults, especially the oldest old, have deficits that make driving dangerous. For this study, a nationwide random sample of approximately 1200 older adults was surveyed on their driving and riding habits, their trip planning behavior, and their perceptions of five types of possible transportation alternatives communities might set up for older adults (volunteer drivers, point-to-point shuttle buses, senior center-based buses, prepaid taxis, and coordinated bus/train systems to distant medical centers).

Results indicated that most older adults drive their own vehicles, and do so on a very regular basis. Most report that they would be devastated if they had to give up driving. Not only do they drive in their own communities, but a sizable proportion frequently drives more than 20 miles from home. Despite frequently driving away from home, most older adults reported that they were uncomfortable driving in unfamiliar cities.

Among our sample, which included metropolitan and non-metropolitan older adults, most said that they did not currently use public transportation to get around. Most also said that they would not use any of the transportation alternatives as long as they still drove. However, respondents did say that they were likely to use three of the five alternatives if they could NOT drive. The prepaid taxi alternative was the least popular overall, although it was particularly unpopular among non-metropolitan respondents. Not surprisingly, bus/train systems to distant medical centers were perceived more positively by non-metropolitan residents than by metropolitan residents.

Finally, recommendations were made for community governments or organizations that wish to institute elderly transportation alternatives. Acceptable transportation options should be reasonably priced, but not free. Community groups may have to do a great deal of education and marketing to get older adults to accept transportation alternatives, even occasionally. However, if older adults can be convinced to use alternative transportation on occasion, even if they still drive, it might make driving cessation easier and less debilitating for older adults.

ACKNOWLEDGMENTS

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INTRODUCTION

The population of older adults is rising at a more rapid rate than any other age group, with the numbers of adults over 85 rising at the fastest rate. Most of those older adults depend on their own automobiles as their primary means of transportation *(1)* (Collia & Sharp, 2003), and most are very reluctant to give up driving. This is a problem for two reasons: 1) the onset of cognitive deficits, sensory and motor deficits, and other health conditions can make older drivers dangerous to themselves and others, and 2) most communities in the United States do not have alternative transportation options that older adults use on a regular basis. The lack of alternative transportation options is most notable in rural areas, which typically do not have public transit systems (*(2)* Hardin & Sheridan, 2012; *(3)* Hanson & Hildebrand, 2011).

Previous research demonstrates that older adults who give up driving tend to also give up many of their favorite activities, which can result in feelings of social isolation and depression *(4)* (Marottoli et al., 2000). Older adults view driving as an indicator of vigor and independence. Conversely, driving cessation puts older adults at risk for depression, worsened health, and placement in a skilled nursing facility *(5)* (Ragland et al., 2005).

One goal of this project was to study the self-reported driving behavior and attitudes of older adults in areas that vary in rurality. Older adults in small towns and very rural areas may be less comfortable in some driving circumstances, such as driving in traffic, while their more urban counterparts may be less comfortable driving on major highways. Discomfort with driving in cities could be a particular problem for older adults who have to travel to larger cities for specialty medical care. Furthermore, if older adults in rural areas have to drive further than older adults in urban areas, but are less comfortable with driving in general, their transportation needs may be greater.

The main focus of this study was on alternative transportation methods for older adults. Although older adults prefer to travel in automobiles, there is evidence that they are willing to use public transportation, at least occasionally, if it is convenient and available to them *(2)* (Hardin & Sheridan, 2012). Through a general search of the internet and the transportation research literature, we collected several common models of alternative transportation systems designed for the elderly. The models were discussed in a focus group of older adults from a small town in Mississippi, and the five most practical models were kept. Next a questionnaire was developed that included general questions about driving behavior, and examples of the transportation models we selected. Participants read descriptions of the transportation models and answered questions about the likelihood that they would use each model, now or

if they could not drive. They also were asked about the degree to which using the transportation modes were practical for seniors, and were likely to increase their feelings of independence.   Preferences were examined as a function of living in a large city, small town, or very rural area.

OBJECTIVE

This project had several objectives that were centered around a nationwide survey of older adults. The design of the survey items were based on other surveys related to transportation issues, as well as a focus group of older adults. The focus group and survey data were analyzed in order to:

- Determine the driving and riding habits of older adults.
    - Are they able to drive?
    - Do they own a car?

- Assess the trip planning behavior of older adults.
    - How are trips planned?
    - How often is public transportation utilized?
    - Distance to basic amenities and necessities.

- Evaluate the relationship between transportation and personal independence.
    - Independence and well-being
    - Attitudes toward asking for help

- Determine perceptions about transportation alternatives.
    - Public transportation's relationship with feelings of independence.
    - Likelihood of using public transportation.
    - Public transportation preferences.
    - Comparisons based on geographic and metro vs. non-metro status.

SCOPE

In order to attain the objectives listed above certain parameters were set. First, a minimum age of 60 was set for participation in the survey. This age was established as the minimum age of participation because it is the age at which older adults generally become eligible for home and community based services and other services provided for seniors *(6)* (AOA, 2011).

Second, the survey was conducted on a nationwide scale in order to analyze differences in terms of driving habits, trip planning behavior, and attitudes towards transportation alternatives at the regional level. This also allowed for differences in habits and attitudes to be analyzed at varying levels of rurality.

Finally, perceptions about transportation alternatives were examined by surveying respondents on their attitudes towards five different scenarios involving transportation alternatives. These included: (1) volunteer drivers, (2) shuttle buses, (3) senior center-based shuttle buses, (4) prepaid taxi services, and (5) coordinated bus/rail service to distant medical centers. In each scenario, respondents were asked about their likelihood of using such a service, the practicality of the service, the level to which it would influence their feelings of being independent, and their opinion on how much such a service should cost on a roundtrip basis.

METHODOLOGY

Data

Data were collected through a nationwide random sample telephone survey of adults, during the months of April and June, 2013. The sample was drawn and stratified based on the proportion of each states' older adult population. It should also be noted that urban areas were under sampled, allowing more emphasis to be placed on the transportation needs of older adults in nonmetropolitan areas.

Surveys were conducted by the National Strategic Planning and Analysis Research Center's Polling Center for Government and Business Development at Mississippi State University. The household telephone numbers were selected using random-digit-dialing (RDD) sampling procedures. The sample included households with unlisted numbers.

Respondents

Respondents included 1,228 adults aged 60 and older. The mean age of the respondent was 76 years old and those between the ages of 65 and 74 comprised the largest age group (50%). In terms of race, 88.2% of respondents were White, 6.4% were African American, 2.4% were multi-racial, and less than 1% of respondents reported their race as being either Asian or Native American. Two percent of respondents were of Hispanic ethnicity. With regard to gender, 65.4% of respondents were female and 34.6% were male. In terms of location, 51.3% of respondents resided in non-metropolitan areas, while 48.7% resided in metropolitan areas (see Table 1).

DISCUSSION OF RESULTS

Driving and Riding Behavior

When surveyed on their driving habits, it was found that 91% of participants were licensed to drive an automobile and 86% currently drove their automobile. Respondents that drove their automobile did so at an average of five days per week. Over 41% of participants reported that they made frequent trips of 20 miles or more away from their home (see Table 2). Over half (52%) of the sample reported they never walked to get to places they need to go versus 20% who claimed they walked either frequently or often (see Table 3).

In terms of riding behavior, 56% of participants reported that they seldom or never rode as a passenger with someone they did not live with (see Table 4). When asked about their preference regarding who they would like to drive if both drivers were licensed, 38% of participants preferred to be the driver, 26% preferred to let the other person drive, and 36% of participants reported it would depend on the situation (see Table 5).

Finally, participants were asked to rate their level of comfort based on five different driving scenarios. These scenarios included driving close to home, driving at night, driving in busy traffic, driving in unfamiliar cities, and driving on the interstate. Comfort level was measured using a Likert type scale, in which a score of "1" indicated they would be very uncomfortable and a score of "5" indicated they would be very comfortable. Results indicate that participants were most comfortable driving close to home, as 93% of participants indicated a score of "5" on this survey item. Participants were most uncomfortable when driving in unfamiliar cities as 21% of the sample indicated a score of "1" on this survey item (see Table 6).

Trip Planning

The section on trip planning focused on two major topics: (1) running errands and (2) the use of transportation options, and (3) familiarity with local transportation options. When asked about trip planning as it related to running errands, respondents were asked how often they tried to get multiple errands accomplished in one trip. Results indicated that 78.3% of respondents frequently tried to get multiple errands accomplished in one trip (Table 7). When asked how often they elected to delay running errands until someone else could provide them with a ride, 77.0% of respondents reported that they never delayed their errands

while 9.2% of respondents reported that they delayed errands on a frequent basis until someone else could provide them with a ride (see Table 8).

When asked how often they used public transportation (e.g. buses, trains, or taxis) to get around their local or nearby community, 81.4% claimed they never used public transportation versus 7.4% who claimed they used public transportation either occasionally or frequently (Table 9). Comparisons between non-metropolitan and metropolitan respondents revealed that 86% of non-metro respondents never used public transportation versus 77% for metropolitan respondents (see Table 10).

Respondents were then asked how often they thought they might use public transportation if it was made more convenient in their area. Results for this question revealed that 40% of respondents thought they would never use public transportation versus 18.6% who said they would use public transportation on a frequent basis if it was made more convenient (see Table 11). Comparisons between non-metropolitan and metropolitan respondents revealed that 37% of non-metro respondents believed they would use public transportation on a frequent or occasional basis if it was made more convenient. By comparison, 40% of the metropolitan respondents believed they would use public transportation on a frequent or occasional basis if it was made more convenient (see Table 12).

Participants were then asked to rate their level of familiarity with transportation options for seniors in their local area and transportation options for the general public in their local area. Familiarity was measured using a Likert-type scale in which a score of '1' indicated the lowest level of familiarity (or not familiar) and a score of '5' indicated the highest level (or very familiar) of familiarity. When asked about their level of familiarity with transportation options for seniors in their local area, results showed that 35.5% of respondents were not familiar with transportation options for seniors in their local area versus 30% who claimed to be very familiar with transportation options for seniors in their local area. In terms of familiarity with transportation options for the general public in their local area, results showed that 43.5% of respondents were not familiar with transportation options for the general public in their local area versus 24% who claimed to be very familiar with transportation options for the general public in their local area (see Table 13).

Comparisons between non-metropolitan and metropolitan respondents revealed that 44% of non-metro respondents had a low level of familiarity with public transportation options for seniors in their local area. Metropolitan respondents also showed low levels of familiarity with transportation options for seniors (47%). Further comparisons between non-

metropolitan and metropolitan respondents revealed that 57% of non-metro respondents had a low level of familiarity with public transportation options for the general public in their local area. Metropolitan respondents showed higher levels of familiarity with transportation options for the general public in their local area, as 46% of metropolitan respondents scored either a "4" or "5" on this survey item (see Table 14).

Independence

The survey also contained a section that looked at the relationship between transportation and personal independence. In this section, respondents were asked to rate their level of agreement with 11 different statements using a 5-point Likert-type scale in which a score of '1' indicated the lowest level of agreement (or Strongly Disagree) and a score of '5' indicated the highest level of agreement (or Strongly Agree). Some of the key findings in this section indicated that for a large majority of the respondents (87%), it was very important that that they be able to do things for themselves. A large majority of respondents (78%) were in strong agreement that older people should not be afraid to ask friends and family for help when it is needed. Approximately 70% of respondents were in strong agreement that being completely independent was essential to their well-being.

Other findings from this section of the survey revealed that that majority of respondents (57%) disagreed with the idea that they would rather stay home look like they were dependent on others. A majority of respondents (52%) also disagreed that asking others for help made them feel like a burden (see Table 15).

Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Tables 16 and 17).

Perceptions about Transportation Alternatives

Perceptions about transportation alternatives were examined by surveying respondent attitudes towards five different scenarios involving alternatives modes of transportation. These included: (1) volunteer drivers, (2) shuttle buses, (3) senior center-based shuttle buses, (4) prepaid taxi services, and (5) coordinated bus/rail service to distant medical centers. In each scenario were given a hypothetical situation about a specific transportation service and they were then asked about their likelihood of using such a service, their opinions on the practicality of the service for older people, the level to which it would influence their feelings

of being independent, and their opinions on how much such a service should cost on a roundtrip basis.

Volunteer Drivers. In terms of perceptions about using volunteer drivers, respondents were asked how likely they would be to utilize such a service if they could drive and if they could not drive by using a 5-point Likert-type scale. A score of '1' indicated they would be very unlikely to use such a service and a score of '5' indicated they would be very likely to use such a service. Results for these survey items indicated that the majority of respondents (59%) would have a low likelihood of using a volunteer driver service if they could still drive on their own. Conversely, approximately 75% of respondents indicated a high likelihood of using such a service if they were unable to drive (see Table 18). Comparisons between non-metropolitan and metropolitan respondents revealed that metropolitan respondents (59.7%) would be slightly less likely than non-metropolitan respondents (58%) to use a volunteer driving service if they could still drive. The majority of both metropolitan respondents (73.9%) and non-metropolitan respondents (76.2%) indicated a high likelihood of using such a service if they were unable to drive (see Table 19).

In terms of this service's level of practicality for older people in their area, 76.6% of respondents indicated that it was highly practical (see Table 20). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 21). Further, the majority of respondents (65%) believed that such a service would increase their feelings of independence (see Table 22). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 23). Finally, one-fifth of respondents felt that such a service should be provided free of charge, while 68% of respondents believed a cost between $1 and $5 was reasonable (see Table 24). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 25).

Shuttle Buses. In terms of perceptions about using shuttle buses, respondents were asked how likely they would be to utilize such a service if they could drive and if they could not drive by using a 5-point Likert-type scale. A score of '1' indicated they would be very unlikely to use such a service and a score of '5' indicated they would be very likely to use such a service. Results for these survey items indicated that the majority of respondents (61%) would have a low likelihood of using a shuttle bus service if they could still drive on their own. Conversely, 69% of respondents indicated a high likelihood of using such a service if they were unable to drive (see Table 18). Comparisons between non-metropolitan and metropolitan respondents revealed that non-metropolitan respondents (62.4%) would be

slightly less likely than metropolitan respondents (60.2%) to use a shuttle bus service if they could still drive. The majority of both metropolitan and non-metropolitan respondents (69.3%) indicated a high likelihood of using such a service if they were unable to drive (see Table 19).

In terms of this service's level of practicality for older people in their area, 72% of respondents indicated that it was highly practical (see Table 20). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 21). Further, the majority of respondents (70%) believed that such a service would increase their feelings of independence (see Table 22). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 23). Finally, 15% of respondents felt that such a service should be provided free of charge, while 79% of respondents believed a cost between $1 and $5 was reasonable (see Table 24). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 25).

Senior Center-Based Shuttle Buses. In terms of perceptions about using senior center-based shuttle buses, respondents were asked how likely they would be to utilize such a service if they could drive and if they could not drive by using a 5-point Likert-type scale. A score of '1' indicated they would be very unlikely to use such a service and a score of '5' indicated they would be very likely to use such a service. Results for these survey items indicated that the majority of respondents (63%) would have a low likelihood of using a senior center-based shuttle buses service if they could still drive on their own. Conversely, 63% of respondents indicated a high likelihood of using such a service if they were unable to drive (see Table 18). Comparisons between non-metropolitan and metropolitan respondents revealed that metropolitan respondents (58.1%) would be slightly less likely than non-metropolitan respondents (54.2%) to use a senior center-based shuttle bus service if they could still drive. The majority of both metropolitan (51.9%) and non-metropolitan respondents (53.7%) indicated a high likelihood of using such a service if they were unable to drive (see Table 19).

In terms of this service's level of practicality for older people in their area, 71% of respondents indicated that it was highly practical (see Table 20). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 21). Further, the majority of respondents (68%) believed that such a service would increase their feelings of independence (see Table 22). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 23).

Finally, 18% of respondents felt that such a service should be provided free of charge, while 73% of respondents believed a cost between $1 and $5 was reasonable (see Table 24). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 25).

Prepaid Taxi Services. In terms of perceptions about using prepaid taxi services, respondents were asked how likely they would be to utilize such a service if they could drive and if they could not drive by using a 5-point Likert-type scale. A score of '1' indicated they would be very unlikely to use such a service and a score of '5' indicated they would be very likely to use such a service. Results for these survey items indicated that the majority of respondents (76%) would have a low likelihood of using a senior center-based shuttle buses service if they could still drive on their own. Conversely, 45% of respondents indicated a high likelihood of using such a service if they were unable to drive (see Table 18). Comparisons between non-metropolitan and metropolitan respondents revealed that non-metropolitan respondents (70.8%) would be less likely than non-metropolitan respondents (66.4%) to use a prepaid taxi service if they could still drive. Approximately one-third of both metropolitan (37.6%) and non-metropolitan respondents (32.6%) indicated a high likelihood of using such a service if they were unable to drive (see Table 19).

In terms of this service's level of practicality for older people in their area, 49% of respondents indicated that it was highly practical (see Table 20). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 21). Further, the majority of respondents (56%) believed that such a service would increase their feelings of independence (see Table 22). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 23). Finally, 13% of respondents felt that such a service should be provided free of charge, while 69% of respondents believed a cost between $1 and $5 was reasonable (see Table 24). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 25).

Coordinated Bus/Rail Service to Distant Medical Centers. In terms of perceptions about using coordinated bus/rail services, respondents were first asked how likely they would be to utilize such a service if they could drive and if they could not drive by using a 5-point Likert-type scale. A score of '1' indicated they would be very unlikely to use such a service and a score of '5' indicated they would be very likely to use such a service. Results for these survey items indicated that the majority of respondents (62%) would have a low likelihood of using a senior center-based shuttle buses service if they could still drive on their own.

Conversely, 52% of respondents indicated a high likelihood of using such a service if they were unable to drive (see Table 18). Comparisons between non-metropolitan and metropolitan respondents revealed that metropolitan respondents (59.7%) would be less likely than non-metropolitan respondents (54.8%) to use a coordinated bus/rail service if they could still drive. Less than half of both metropolitan (41.8%) and non-metropolitan respondents (46.9%) indicated a high likelihood of using such a service if they were unable to drive (see Table 19).

In terms of this service's level of practicality for older people in their area, 58.3% of respondents indicated that it was highly practical (see Table 20). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 21). Further, the majority of respondents (61.8%) believed that such a service would increase their feelings of independence (see Table 22). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 23). Finally, 14% of respondents felt that such a service should be provided free of charge, 47% of respondents believed a cost between $5 and $10 was reasonable, and 39% of respondents believed that such a service should cost $25 or more to access (see Table 24). Comparisons between metropolitan and non-metropolitan respondents were consistent with the overall sample (see Table 25).

CONCLUSIONS

The purpose of this study was to conduct a nationwide survey that focused on the transportation issues of older adults. Specifically, the survey looked at the driving and riding behavior of older adults, their trip planning behavior, and perceptions about transportation alternatives for older adults.

Results of the survey revealed that 86% of older adults sampled drive their own vehicles, and do so, on average, 5 days a week. About 41% of older adults frequently drive more than 20 miles from home. Most older drivers tried to accomplish more than one errand on each driving trip from home, and almost none put off tasks until someone can drive them. In general, older drivers are most uncomfortable with driving in unfamiliar cities, which suggests that driving to cities for medical care is problematic. Driving at night was the second most uncomfortable driving task, but surprisingly, a much smaller proportion were very uncomfortable with night driving. Thus, the older adults in our sample drove frequently and were comfortable with everyday driving tasks. Furthermore, 57% of the sample said they would be devastated if they had to give up driving.

By contrast, most of the older adults sampled never used public transportation, and were not very familiar with transportation options, either for the general public or for older adults. Forty percent said they would never use public transportation, even if it were made more convenient. Negative perceptions of public transportation are likely to be a significant barrier to the development of transportation alternatives for older adults. Somewhat surprisingly, residents of metropolitan areas and non-metropolitan areas answered similarly on the likelihood that they would use public transportation if more convenient.

The second major part of the survey emphasized older adults' perceptions of five different types of programs that could be implemented as possible alternatives to driving for older adults. In general, most respondents said they would not use any of the options as long as they can drive. However, if they could not drive, most said they were likely to use the volunteer drivers option, the point-to-point shuttle buses, and the senior center-based shuttle buses. Respondents said they were somewhat or fairly likely to use the bus/rail service to medical centers, if they could not drive, but the majority of participants would not use the prepaid taxi services. Nonmetropolitan residents were particularly unlikely to say they would use the prepaid taxi services, but somewhat more likely to say they would use the bus/rail transportation to medical centers. Prepaid taxis were also seen as less practical than other transportation options, and less likely to make them feel independent. Sadly, the prepaid taxi

option might be easier than some of the other options for communities to institute. Finally, very few of the older adults thought that any of the transportation alternatives should be free. This suggests that older adults might be willing to pay for transportation alternatives, but they need to be convinced to use them.

Communities ought to consider instituting transportation alternatives for older adults, to encourage older adults to stay independent and active in their communities, even after they give up driving. However, communities will need to start a dialogue with their older residents about the kind(s) of alternatives to offer. In addition, they will probably need to institute advertising and educational campaigns to maximize the use of newly instituted alternatives.

RECOMMENDATIONS

The above findings indicate that older people recognize that some driving situations are more dangerous than others, such as driving at night and driving in unfamiliar cities. However, most older adults who currently drive are very attached to their automobiles and report that they would be unlikely to use transportation alternatives. Older adults say they would be more likely to use transportation alternatives if they did not drive, but even under those circumstances, many would not use transportation alternatives.

Community leaders interested in implementing driving alternatives need to go through several steps to determine the most efficient and cost-effective alternatives for their community. They should note that older adults are willing to pay for driving alternatives, as long as the price is reasonable. Hardin and Sheridan *(2)* (2012) suggest that older adults who still drive do not have to choose between driving and other transportation alternatives, but can be encouraged through education and media campaigns to use transportation alternatives under certain circumstances: at night, when it saves money, etc. Older adults who are used to using transportation alternatives should be less traumatized by driving cessation, and less likely to reduce their activity levels after giving up driving. In addition, they should continue to feel independent and connected to their communities. Ultimately, they may be less likely to move into long-term care.

Education and marketing are key to getting older people to use alternatives to driving, especially those with alternatives that are less familiar. Since older adults are very concerned about being independent, marketing campaigns should stress the role of transportation alternatives in increasing independence.

Community organizers have several options for types of alternative transportation. The volunteer driver model has the widest appeal to older adults, but it is only possible in communities where volunteers with cars (or are willing to drive vans purchased for the program) are available. It has the advantage that volunteers can help passengers with groceries, etc., and rides are catered to the needs of the rider.

The point-to-point shuttle is also relatively appealing to older adults. It has the advantage of a schedule, but it may be costly to implement so that most potential riders can catch the shuttle near enough to their residences.

The senior center-based shuttle is also well-liked, almost as well-liked as point-to-point. It may be more efficient, in terms of routing.

The taxi model would be efficient for communities, and would not require huge public expenditures. However, rural older adults did not like the idea much, probably because the idea is unfamiliar to them.

Lastly, intermodal transportation to distant hospitals was a high priority for nonmetropolitan older adults.

ACRONYMS, ABBREVIATIONS, AND SYMBOLS

AASHTO	American Association of State Highway and Transportation Officials
AOA	Administration on Aging
cm	centimeter(s)
FHWA	Federal Highway Administration
ft.	foot (feet)
in.	inch(es)
lb.	pound(s)
m	meter(s)
RDD	random digit dialing

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APPENDIX: RESULT TABLES

The following tables display results of the major survey items discussed throughout the text of this report.

Table 1. Sample Characteristics.

	Percent
Age Groups	
60-64	0.7%
65-74	50.0%
75-84	36.4%
85 and older	12.9%
Gender	
Female	65.4%
Male	34.6%
Race	
White	88.2%
African American	6.4%
Multi-racial	2.4%
Other	3.0%
Location	
Non-metropolitan	51.3%
Metropolitan	48.7%

Table 2. Frequency of Driving or Riding More than 20 Miles from Home.

Frequency	**Percent**
Frequently	41.5%
Occasionally	36.5%
Seldom	18.2%
Never	3.8%

Table 3. Frequency of Walking to Places.

Frequency	**Percent**
Frequently	9.9%
Occasionally	10.3%
Seldom	27.4%
Never	52.3%

Table 4. Frequency of Riding as a Passenger With Someone You Do Not Live With.

Frequency	Percent
Frequently	15.7%
Occasionally	27.9%
Seldom	44.7%
Never	11.8%

Table 5. Driving Preferences When Both Drivers are Licensed.

Preference	Percent
Prefer to be Driver	38.0%
Let Other Person Drive	26.0%
Depends on Situation	36.0%

Table 6. Comfort Level of Different Driving Scenarios.

Scenario	1	2	3	4	5
Close to home	1.1%	0.6%	1.8%	3.9%	92.6%
At night	14.4%	8.4%	18.4%	18.3%	40.6%
In busy traffic	7.5%	7.2%	17.6%	22.0%	45.7%
In unfamiliar cities	21.0%	12.7%	21.9%	20.0%	24.3%
On interstates/large highways	8.5%	4.0%	11.3%	18.3%	57.8%

Table 7. Frequency of Accomplishing Multiple Errands on One Trip.

Frequency	Percent
Frequently	78.3%
Occasionally	12.0%
Seldom	6.4%
Never	3.3%

Table 8. Frequency of Delaying Errands until Someone Else Can Drive.

Frequency	Percent
Frequently	9.2%
Occasionally	6.9%
Seldom	6.9%
Never	77.0%

Table 9. Frequency of Using Public Transportation.

Frequency	Percent
Frequently	3.0%
Occasionally	4.4%
Seldom	11.2%
Never	81.4%

Table 10. Frequency of Using Public Transportation (Metropolitan vs. Non-metropolitan).

Frequency	Percent
Metropolitan	
Frequently	4.0%
Occasionally	5.4%
Seldom	14.1%
Never	76.5%
Nonmetropolitan	
Frequently	2.1%
Occasionally	3.5%
Seldom	8.5%
Never	86.0%

Table 11. Predicted Frequency of Using Public Transportation if More Convenient.

Frequency	Percent
Frequently	18.6%
Occasionally	20.0%
Seldom	21.4%
Never	40.0%

Table 12. Predicted Frequency of Using Public Transportation if More Convenient (Metropolitan vs. Non-metropolitan).

Frequency	Percent
Metropolitan	
Frequently	18.0%
Occasionally	22.2%
Seldom	21.0%
Never	38.8%
Nonmetropolitan	
Frequently	19.1%
Occasionally	17.9%
Seldom	21.9%

Never	41.1%

Table 13. Familiarity with Transportation Options (Seniors and General Public).

Familiarity	1	2	3	4	5
Transportation Options for Seniors	35.5%	9.1%	15.1%	10.2%	30.0%
Transportation Options for General Public	43.5%	8.8%	13.9%	10.1%	23.7%

Table 14. Familiarity with Transportation Options (Seniors and General Public; Metropolitan vs. Non-metropolitan).

Familiarity	1	2	3	4	5
Metropolitan					
Transportation Options for Seniors	36.6%	9.6%	17.3%	9.7%	26.8%
Transportation Options for General Public	34.5%	8.7%	13.0%	10.7%	33.1%
Nonmetropolitan					
Transportation Options for Seniors	38.9%	8.6%	16.1%	10.6%	25.8%
Transportation Options for General Public	47.8%	9.1%	11.8%	9.6%	21.7%

Table 15. Survey Items Related to Opinions on Independence.

Agreement Level	1	2	3	4	5
Uncomfortable asking friends/family for transportation help	35.5%	8.9%	19.7%	8.8%	27.1%
Independence is essential to well-being	5.1%	3.7%	9.0%	11.9%	70.4%
Older people should not be afraid to ask for help	4.0%	2.0%	5.8%	9.9%	78.2%
I don't mind asking for help because I have people in the past.	7.5%	6.0%	18.1%	15.5%	52.9%
When I ask for help, I am a burden	40.1%	11.5%	20.5%	11.4%	16.4%
It is no big deal to ask others for a ride to somewhere they are going.	15.1%	7.0%	15.2%	16.8%	45.8%
I would rather stay home than look dependent.	45.4%	12.0%	16.4%	7.4%	18.8%
I would be devastated if I had to give up driving.	9.1%	6.5%	15.6%	11.9%	56.8%
It is important to me to be able to do things for myself.	2.1%	1.0%	2.0%	8.0%	86.9%
I feel obligated to others when they do things for me.	21.5%	13.3%	25.8%	13.5%	26.0%
I would rather pay somebody to help me than ask family or friends for help.	36.6%	12.5%	17.7%	8.1%	19.0%

Table 16. Survey Items Related to Opinions on Independence (Metropolitan).

Agreement Level	1	2	3	4	5
Uncomfortable asking friends/family for transportation help	36.5%	8.5%	18.8%	9.0%	27.1%
Independence is essential to well-being	4.5%	4.0%	8.4%	11.9%	71.1%
Older people should not be afraid to ask for help	4.2%	2.2%	5.2%	9.7%	78.8%
I don't mind asking for help because I have people in the past.	7.4%	6.7%	16.4%	14.2%	55.3%
When I ask for help, I am a burden	41.8%	9.7%	21.6%	10.9%	15.9%
It is no big deal to ask others for a ride to somewhere they are going.	14.5%	7.4%	16.4%	16.5%	45.2%
I would rather stay home than look dependent.	48.6%	11.8%	15.5%	6.8%	17.2%
I would be devastated if I had to give up driving.	8.3%	6.3%	17.1%	10.6%	57.7%
It is important to me to be able to do things for myself.	1.8%	0.9%	1.9%	9.8%	85.6%
I feel obligated to others when they do things for me.	21.0%	13.3%	27.2%	12.3%	26.3%
I would rather pay somebody to help me than ask family or friends for help.	38.5%	13.4%	17.4%	8.2%	17.2%

Table 17. Survey Items Related to Opinions on Independence (Non-metropolitan).

Agreement Level	1	2	3	4	5
Uncomfortable asking friends/family for transportation help	34.6%	9.3%	20.6%	8.5%	27.0%
Independence is essential to well-being	5.6%	3.3%	9.5%	11.9%	69.6%
Older people should not be afraid to ask for help	3.8%	1.9%	6.4%	10.2%	77.7%
I don't mind asking for help because I have people in the past.	7.7%	5.3%	19.7%	16.8%	50.6%
When I ask for help, I am a burden	38.6%	13.2%	19.5%	11.9%	16.9%
It is no big deal to ask others for a ride to somewhere they are going.	15.8%	6.6%	14.1%	17.0%	46.5%
I would rather stay home than look dependent.	42.4%	12.2%	17.2%	8.0%	20.2%
I would be devastated if I had to give up driving.	9.9%	6.7%	14.2%	13.1%	56.0%
It is important to me to be able to do things for myself.	2.4%	1.2%	2.0%	6.3%	88.1%
I feel obligated to others when they do things for me.	21.9%	13.3%	24.5%	14.6%	25.7%
I would rather pay somebody to help me than			17.9%		

| ask family or friends for help. | 34.8% | 11.6% | | 8.1% | 20.6% |

Table 18. Likelihood of Use: Transportation Alternatives.

Likelihood of Use	1	2	3	4	5
Volunteer Drivers					
Currently	50.7%	8.1%	10.8%	7.2%	23.2%
If Unable to Drive	13.0%	3.2%	8.7%	11.4%	63.7%
Shuttle Buses					
Currently	54.3%	7.1%	11.9%	6.8%	19.9%
If Unable to Drive	18.3%	4.3%	8.0%	11.8%	57.5%
Senior center-based Shuttle Buses					
Currently	56.1%	7.2%	11.0%	5.8%	19.8%
If Unable to Drive	21.8%	4.9%	10.8%	9.8%	52.8%
Prepaid Taxi Services					
Currently	68.6%	6.8%	7.7%	4.9%	11.9%
If Unable to Drive	34.3%	6.3%	14.3%	10.1%	35.0%
Coordinated Bus/Rail Service to Distant Medical Centers					
Currently	57.2%	4.5%	8.7%	6.8%	22.8%
If Unable to Drive	33.9%	4.9%	8.9%	7.9%	44.4%

Table 19. Likelihood of Use: Transportation Alternatives (Metropolitan vs. Non-metropolitan).

Likelihood of Use	1	2	3	4	5
Metropolitan Respondents					
Volunteer Drivers					
Currently	52.1%	7.6%	9.7%	7.2%	23.4%
If Unable to Drive	14.8%	2.2%	9.1%	10.6%	63.3%
Shuttle Buses					
Currently	53.8%	6.4%	12.0%	7.3%	20.5%
If Unable to Drive	17.5%	4.2%	8.9%	11.0%	58.3%
Senior center-based Shuttle Buses					
Currently	58.1%	5.4%	12.4%	5.6%	18.5%
If Unable to Drive	23.1%	3.9%	11.3%	9.8%	51.9%
Prepaid Taxi Services					
Currently	66.4%	6.3%	9.1%	4.6%	13.7%
If Unable to Drive	31.2%	5.7%	15.7%	9.8%	37.6%
Coordinated Bus/Rail Service to Distant Medical Centers					
Currently	59.7%	4.7%	8.8%	5.4%	21.3%
If Unable to Drive	37.2%	5.2%	8.5%	7.3%	41.8%
Non-metropolitan Respondents					
Volunteer Drivers					
Currently	49.4%	8.6%	11.8%	7.2%	23.0%
If Unable to Drive	11.3%	4.1%	8.3%	12.1%	64.1%
Shuttle Buses					
Currently	54.7%	7.7%	11.8%	6.4%	19.4%
If Unable to Drive	19.0%	4.5%	7.2%	12.6%	56.7%
Senior center-based Shuttle Buses					
Currently	54.2%	9.0%	9.8%	6.1%	21.0%
If Unable to Drive	20.5%	5.8%	10.3%	9.8%	53.7%
Prepaid Taxi Services					
Currently	70.8%	7.3%	6.4%	5.3%	10.2%
If Unable to Drive	37.2%	6.8%	13.0%	10.3%	32.6%
Coordinated Bus/Rail Service to Distant Medical Centers					
Currently	54.8%	4.3%	8.5%	8.0%	24.3%
If Unable to Drive	30.8%	4.5%	9.3%	8.5%	46.9%

Table 20. Level of Practicality: Transportation Alternatives.

Level of Practicality	1	2	3	4	5
Volunteer Drivers	6.5%	3.1%	13.8%	10.9%	65.7%
Shuttle Buses	10.3%	3.4%	14.5%	12.5%	59.4%
Senior center-based Shuttle Buses	10.4%	4.7%	13.7%	12.1%	59.1%
Prepaid Taxi Services	26.3%	7.4%	17.3%	11.0%	38.0%
Coordinated Bus/Rail Service to Distant Medical Centers	22.5%	5.4%	13.8%	10.3%	48.0%

Table 21. Level of Practicality: Transportation Alternatives (Metropolitan vs. Non-metropolitan).

Level of Practicality	1	2	3	4	5
Metropolitan					
Volunteer Drivers	5.1%	4.3%	12.1%	11.6%	67.0%
Shuttle Buses	9.5%	3.9%	13.9%	12.2%	60.4%
Senior center-based Shuttle Buses	8.7%	6.0%	13.5%	12.1%	59.7%
Prepaid Taxi Services	21.7%	7.6%	19.4%	10.8%	40.4%
Coordinated Bus/Rail Service to Distant Medical Centers	24.1%	5.5%	15.9%	9.7%	44.8%
Nonmetropolitan					
Volunteer Drivers	7.9%	1.9%	15.4%	10.3%	64.5%
Shuttle Buses	11.0%	2.9%	15.0%	12.7%	58.5%
Senior center-based Shuttle Buses	11.9%	3.5%	13.8%	12.1%	58.6%
Prepaid Taxi Services	30.5%	7.3%	15.3%	11.1%	35.7%
Coordinated Bus/Rail Service to Distant Medical Centers	21.0%	5.3%	11.8%	10.8%	51.1%

Table 22. Transportation Alternatives and Feelings of Independence.

Feelings of Independence	None	A Little	Some	A Lot
Volunteer Drivers	18.7%	15.6%	28.3%	37.4%
Shuttle Buses	16.3%	14.2%	26.7%	42.9%
Senior center-based Shuttle Buses	17.2%	14.4%	27.3%	41.1%
Prepaid Taxi Services	26.8%	18.0%	21.6%	33.6%
Coordinated Bus/Rail Service to Distant Medical Centers	24.7%	13.5%	23.8%	38.0%

Table 23. Transportation Alternatives and Feelings of Independence (Metropolitan vs. Non-metropolitan).

Feelings of Independence	None	A Little	Some	A Lot
Metropolitan				
Volunteer Drivers	18.6%	16.6%	27.4%	37.5%
Shuttle Buses	15.6%	14.6%	27.2%	42.5%
Senior center-based Shuttle Buses	17.4%	14.3%	28.3%	39.9%
Prepaid Taxi Services	22.6%	19.6%	23.2%	34.6%
Coordinated Bus/Rail Service to Distant Medical Centers	26.0%	13.6%	23.9%	36.5%
Nonmetropolitan				
Volunteer Drivers	18.8%	14.6%	29.2%	37.3%
Shuttle Buses	16.9%	13.7%	26.1%	43.2%
Senior center-based Shuttle Buses	17.0%	14.4%	26.4%	42.2%
Prepaid Taxi Services	30.8%	16.4%	20.2%	32.6%
Coordinated Bus/Rail Service to Distant Medical Centers	23.4%	13.5%	23.7%	39.3%

Table 24. Cost of Services.

Cost	Free	$1-$2	$5	$10	$25+
Volunteer Drivers	20.5%	32.3%	36.0%	11.2%	--
Shuttle Buses	14.9%	44.9%	34.1%	6.1%	--
Senior center-based Shuttle Buses	17.5%	42.6%	32.8%	7.0%	--
Prepaid Taxi Services	12.7%	25.1%	44.3%	18.0%	--
Coordinated Bus/Rail Service to Distant Medical Centers	14.1%	--	23.0%	24.6%	38.3%

Table 25. Cost of Services (Metropolitan vs. Non-metropolitan).

Cost	Free	$1-$2	$5	$10	$25+
Metropolitan					
Volunteer Drivers	20.3%	31.5%	37.5%	10.7%	--
Shuttle Buses	15.7%	43.5%	35.7%	5.1%	--
Senior center-based Shuttle Buses	18.1%	44.5%	30.5%	6.9%	--
Prepaid Taxi Services	11.9%	23.4%	43.7%	21.1%	--
Coordinated Bus/Rail Service to Distant Medical Centers	11.5%	--	27.3%	24.2%	37.0%
Nonmetropolitan					
Volunteer Drivers	20.7%	33.1%	34.6%	11.7%	--
Shuttle Buses	14.1%	46.2%	32.6%	7.1%	--
Senior center-based Shuttle Buses	16.9%	40.9%	35.0%	7.1%	--
Prepaid Taxi Services	13.4%	26.7%	44.8%	15.1%	--
Coordinated Bus/Rail Service to Distant Medical Centers	16.5%	--	19.0%	25.0%	39.5%