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Transportation Needs of Older Adults in Suburban and Rural Areas

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TRANSPORTATION NEEDS OF OLDER ADULTS IN SUBURBAN AND RURAL AREAS

by

Dahai Han

A Dissertation Submitted in
Partial Fulfillment of the
Requirements for the Degree of

Doctor of Philosophy

in Engineering

at

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ABSTRACT

TRANSPORTATION NEEDS OF OLDER ADULTS IN SUBURBAN AND RURAL AREAS

by

Dahai Han

The University of Wisconsin-Milwaukee, 2023
Under the Supervision of Professor Andrew Graettinger

The fact that the average age of the world's population is increasing, which is more pronounced in developed countries, necessitates the understanding of the challenges faced by older adults in accessing transportation services. With advancing age, individuals may experience age-related changes that can notably affect their driving capabilities, emphasizing the importance of alternative transportation alternatives. This challenge is more evident in suburban and rural settings, where transportation choices are limited, and older adults often find themselves without access to suitable transportation alternatives. Given that mobility plays an essential role in maintaining social connections, accessing healthcare services, and fulfilling daily needs, gaining a comprehensive understanding of the unique challenges faced by older adults in accessing transportation services in these areas is pivotal.

This study employed a multifaceted approach, incorporating questionnaire surveys and focus group meetings with participation from both older adults and transportation service providers in suburban and rural Wisconsin. The dataset included 1,650 valid questionnaire responses from older adults, addressing their socio-demographics, technology usage, travel patterns, satisfaction with local transportation, challenges faced, and suggestions for improvements. The majority of responses were from females, individuals from low-income households, and those living alone. Furthermore, 103 valid responses were received from

service providers, echoing and expanding upon these topics from a different perspective.

Regression models were applied to analyze older adults' travel mode and purpose preferences.

Qualitative insights into their experiences and recommendations were obtained through focus meetings conducted with both older adults and service providers.

The analyses unveiled that older adults often depend on self-driving and support from their social networks, while their utilization of local transportation services remains limited. The model results further confirmed the influence of demographic factors, demonstrating fewer trips among females, adults over 85 years, wheelchair users, low-income individuals, and those living alone. The COVID-19 pandemic curtailed older adults' mobility additionally. A pronounced digital divide underscored the need to address internet access issues. Ride requests were primarily made via phone calls. While overall satisfaction with local services was positive, concerns regarding scheduling, routes, accessibility, healthcare coordination, reservations, communication, and driver performance were prevalent, highlighting areas for improvement in elderly transportation services.

To address the found transportation barriers, this study puts forward eight key recommendations: collaboration and funding, coordination, expanding services, enhancing accessibility, providing training, focusing on rural areas, targeted marketing, and technology improvement. These measures have the potential to significantly enhance transportation services for older adults, benefiting not only Wisconsin but also comparable suburban and rural regions. Policymakers, transportation providers, and community organizations can utilize these insights to establish a more inclusive, accessible, and age-friendly transportation network that promotes the well-being of older adults.

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LIST OF ABBREVIATIONS

AAA	American Automobile Association
AARP	American Association of Retired Persons
ACS	American Community Survey
ADA	The Americans with Disabilities Act
ADRC	Aging and Disability Resource Center
COVID-19	Coronavirus Disease of 2019
DTSD	Division of Transportation System Development
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
MOU	Memorandum of Understanding
NADTC	National Aging and Disability Transportation Center
NEMT	Non-Emergency Medical Transportation Program
NHTS	National Household Transportation Survey
URL	Uniform Resource Locator
WisDOT	Wisconsin Department of Transportation

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Chapter 1 Introduction

1.1 Background and Motivation

The global trend of an aging population has been steadily increasing. By 2050, one in six (16%) people in the world, as well as one in four (25%) in the United States, will be over age 65, according to projections from the United Nations (United Nations, 2019). This significant demographic shift carries implications for various aspects of society, including transportation. As individuals age, physical abilities may decline, impacting mobility. Reduced strength, flexibility, balance, and vision can make it difficult for older adults to access vehicles, walk long distances, or use public transportation.

Because mobility is a crucial aspect of maintaining healthy and quality life in later life, it is important to understand the transportation challenges of older adults. Mobility is intricately tied to the quality of life and well-being of older adults. Access to transportation is vital for them to maintain social connections, engage in leisure activities, access healthcare services, and meet daily needs such as grocery shopping and medical appointments. Transportation challenges also can exacerbate social isolation, a prevalent issue among older adults, impacting their mental and emotional health.

Older adults' transportation needs and challenges in suburban and rural areas require extra attention. The built environment in suburban and rural areas might not be as conducive to alternative modes of transportation such as public transit or cycling as in urban areas. Limited transportation options, longer distances, lack of infrastructure, and reduced availability of services compound the challenges faced by older adults in these settings. At the same time,

older adults in rural areas experience worse health conditions and shorter life expectancy when compared with their counterparts in urban settings (Singh & Siahpush, 2014). They exhibit poorer self-rated physical and mental health, higher prevalence of chronic diseases, activity limitations, and chronic pain that limit their participation of driving vehicles or getting rides.

Although driving a personal vehicle remains the preferred method of transportation for older adults in the United States (Han et al., 2021; Keenan, 2010), before-mentioned age-related changes might affect some older adults' driving abilities. It is important to provide alternative modes of transportation for older adults, such as conventional public transportation (e.g., buses, light rail, subways, shuttles and trams, ferries, etc.) and paratransit services (i.e., minibuses or small vans equipped to handle wheelchairs for seniors or those with disabilities). In addition, some private and specialized transportation services such as Supplemental Transportation Programs for Seniors (STPs), and volunteer driver programs may be options in suburban and rural areas where conventional bus service is not available.

Technology has transformed transportation to better assist older adults in providing access to the services such as real-time notification of time of arrival or departure of transit/paratransit services; web and/or call center-based reservations to arrange transportation services for older adults (e.g., myride2, Ride Connection, Link for Care). More recently, online transportation network companies (TNCs) have launched pilot programs for older Americans in states with large aging populations, e.g., UberWAV, UberASSIST, Lift Hero, SilverRide; and some third-party shared ride services have also been developed for older adults through partnerships with local organizations, e.g., Freedom in Motion, GreatCall, RideWith24, GoGoGrandparent.

Despite these changes, a survey conducted by the National Aging and Disability Transportation Center in 2021 reported that 40% of older adults who do not drive are deprived of activities and errands they need or enjoy. These respondents consider the existing transportation alternatives to be inadequate and not responsive to their needs, and they mostly rely on family and friends for transportation.

By delving into the transportation challenges faced by older adults in suburban and rural areas, we can identify gaps in local transportation services and policies. This understanding empowers policymakers, transportation planners, and community organizations to develop age-friendly solutions that promote independence, social engagement, and overall well-being for this demographic. In turn, addressing these challenges contributes to fostering sustainable and inclusive communities that cater to the diverse needs of older adults in the evolving landscape of our aging society.

1.2 Research Objectives

The research aims to conduct a comprehensive investigation into the transportation challenges encountered by older adults living in suburban and rural regions, while gaining deeper insights into their mobility patterns and unique transportation requirements. This study seeks to illuminate the distinctive obstacles and experiences that older adults face when accessing transportation options within suburban and rural contexts. The overarching objective is to contribute valuable insights to transportation planning and policy formulation through the pursuit of the following key goals:

1. **Methodological Design for Data Collection:** The research will develop a hybrid survey method to gather comprehensive data on the transportation needs of older adults, using both of questionnaires and focus group meetings. Considering the constraints posed by the COVID-19 pandemic, where social interactions are limited, local agencies will play a pivotal role in distributing questionnaires, while focus group discussions will be conducted via telephone calls.
2. **Understanding Mobility Patterns:** The study aims to delve into the travel behavior and mobility patterns of older adults residing in suburban and rural settings. By unraveling how these individuals engage with various transportation options such as public transit, paratransit services, and private vehicles, researchers can discern significant insights into the frequency, modes, and purposes of their travel.
3. **Exploring Transportation Barriers:** The research will thoroughly examine the barriers and challenges confronted by older adults in their pursuit of accessible transportation. This investigation encompasses diverse aspects, including physical limitations, safety concerns, affordability constraints, travel distances to transportation services, and the hesitancy associated with using public transit or relying on private vehicles. A comprehensive understanding of these barriers is essential for devising precisely targeted interventions and formulating policy recommendations.

4. Incorporating Service Providers' Perspectives: The study will not only consider the viewpoints of older adults but also incorporate the perspectives of transportation service providers. This dual focus not only offers insights into operational aspects from the agency's viewpoint but also facilitates the assessment of potential gaps in understanding between service providers and older users.
5. Guiding Policy and Planning Initiatives: The primary objective of this research is to underpin transportation policy and planning endeavors tailored to the specific of older adults residing in suburban and rural areas. Through empirically grounded insights, the study aims to inform the development of transportation policies that are sensitive to the needs of older adults. This encompasses improvements in infrastructure, innovative transportation services, and the creation of transportation systems that are beneficial to individuals of advanced age.

In pursuing these objectives, the research strives to enhance the quality of transportation options available to older adults in suburban and rural regions, ultimately promoting their independence, well-being, and active participation in community life.

1.3 Expected Contributions

The anticipated contributions of this research are expected to significantly enhance the understanding of transportation challenges faced by older adults residing in suburban and rural areas. By addressing the unique needs and mobility patterns of this demographic, this study

aspires to provide valuable insights that can inform policy-making, planning initiatives, and service enhancements within the realm of transportation for older adults. The key expected contributions of this research are outlined below:

1. **Enhanced Knowledge of Mobility Patterns:** Through an in-depth exploration of the travel behavior and mobility patterns of older adults in suburban and rural contexts, this research is poised to contribute to a richer understanding of how these individuals navigate transportation options. Such insights can provide a foundation for tailoring transportation services to better align with their preferences, leading to more effective and efficient transportation solutions.
2. **Identification and Mitigation of Barriers:** By investigating the challenges that older adults face when accessing transportation, including physical limitations, safety concerns, affordability, and distance-related issues, this study aims to offer insights that can guide the development of targeted interventions. These interventions hold the potential to mitigate these barriers, thereby promoting equitable and accessible transportation options for older adults.
3. **Informed Policy and Planning:** One of the primary anticipated contributions of this research is its potential to inform the formulation of transportation policies and planning initiatives that are sensitive to the needs of older adults in suburban and rural areas. The evidence-based insights generated by this study can guide policymakers and transportation planners in designing age-friendly transportation systems, infrastructure improvements, and innovative services that cater to the specific requirements of older adults.

4. **Service Provider Engagement and Collaboration:** Through the inclusion of perspectives from transportation service providers, this research seeks to bridge the gap between service provision and user needs. By understanding the viewpoints of agencies involved in transportation services, this study aims to facilitate a collaborative environment that addresses operational challenges and fosters an environment of user-centric service delivery.
5. **Empowerment of Older Adults:** By illuminating the challenges faced by older adults and highlighting potential solutions, this research ultimately empowers this demographic to advocate for their transportation needs. The insights generated by this study can equip older adults with information to make informed decisions, engage in dialogue with policymakers, and actively participate in shaping transportation systems that cater to their requirements.

In sum, the expected contributions of this research extend beyond theoretical insights and have practical implications for improving the quality of life, independence, and well-being of older adults residing in suburban and rural regions. By fostering a comprehensive understanding of their transportation challenges and needs, this research aims to be a catalyst for positive change, leading to more inclusive and age-friendly transportation systems.

1.4 Dissertation Outline

The dissertation is structured across eight chapters, with each chapter elucidating specific facets of the research's scope and goals.

Chapter 1 furnishes readers with an understanding of the project's *raison d'être*, its objectives, the technical methodologies adopted, and the overarching arrangement of the report.

Chapter 2 provides a literature review of relevant topics such as the mobility needs of older adults, efficacious strategies for augmenting elderly mobility, and valuable insights from previous research.

Chapter 3 undertakes a comprehensive analysis of Wisconsin's aging dynamics and extant programs. The focus encompasses elderly mobility initiatives, healthcare programs tailored for seniors, prevalent public transportation offerings, and targeted outreach and educational efforts aimed at the elderly demographic.

Chapter 4 introduces the methodology designed to engage both transportation-disadvantaged older adults and service providers. The chapter delineates the hybrid approach combining questionnaires and focus group meetings, underpinning the empirical foundation of the study.

Chapter 5 presents the outcomes of the statewide survey conducted with older adults. An in-depth examination describes respondent characteristics, prevailing transportation service usage patterns, awareness and preferences, viewpoints on service enhancements and emerging technologies, the ramifications of the COVID-19 pandemic, demand patterns, concerns, and noteworthy suggestions.

Chapter 6 describes the insights derived from the statewide survey targeting transportation service providers, including respondent attributes, the interplay between older

users' preferences and actual usage, organizational intricacies, and recommendations to enhance service quality.

Chapter 7 conducts analytical models on questionnaire results and delves into the travel behaviors of older adults by using the Ordinal Logit and Multinomial Logit Models to analyze trip frequencies and primary mode choices, respectively.

Chapter 7 presents the findings from focus group studies, including the distinctive traits of focus group participants, their usage and preference tendencies, perspectives on service evolutions and technological innovations, the resonance of the COVID-19 crisis, prevalent demand trends, prevailing concerns, and insightful suggestions.

Chapter 9 summarizes key findings, discusses policy implications, offers a forward-looking perspective with recommendations to guide subsequent scholarly and practical endeavors in this domain.

Chapter 2 Literature Review

The world population is aging, especially for developed countries such as the U.S. Older adults living in suburban and rural areas face unique transportation issues. On one hand, aging is often accompanied by a decline in physical performance, making it difficult to drive a vehicle safely and/or independently use alternative transportation services. On the other hand, public and private transit services in rural areas are limited (or even nonexistent) in terms of coverage, frequency, and connectivity when compared with urban areas. After introducing the aging trend, this chapter reports on a comprehensive literature review on the needs, supplies, patterns, and challenges of transportation among older adults in suburban and rural areas.

2.1 Population Aging Trend

2.1.1 Worldwide and National Population Aging Trend

Aging is a global phenomenon that is reshaping population demographics. According to projections from the United Nations' World Population Prospects 2019 (United Nations, 2019), the proportion of the world population aged 65 and older is expected to rise from 9% in 2019 to 16% by 2050. In North America, this trend is particularly pronounced, with projections indicating that one in four individuals will be aged 65 or over by 2050. Similar findings have been reported by other studies, such as Ortman et al. (2014) and a study by Population Reference Bureau (Mather et al., 2019), which highlighted the steady increase in the number of people aged 65 and older in the United States, particularly since 2011 when the baby boomer generation began reaching the age of 65 (Figure 2.1). By 2060, the number of older adults in the

U.S. is projected to rise by 69%, with a nearly three-fold increase in the number of people aged 85 and older, from 6.7 million in 2020 to 19.0 million in 2060 (Mather et al., 2019).

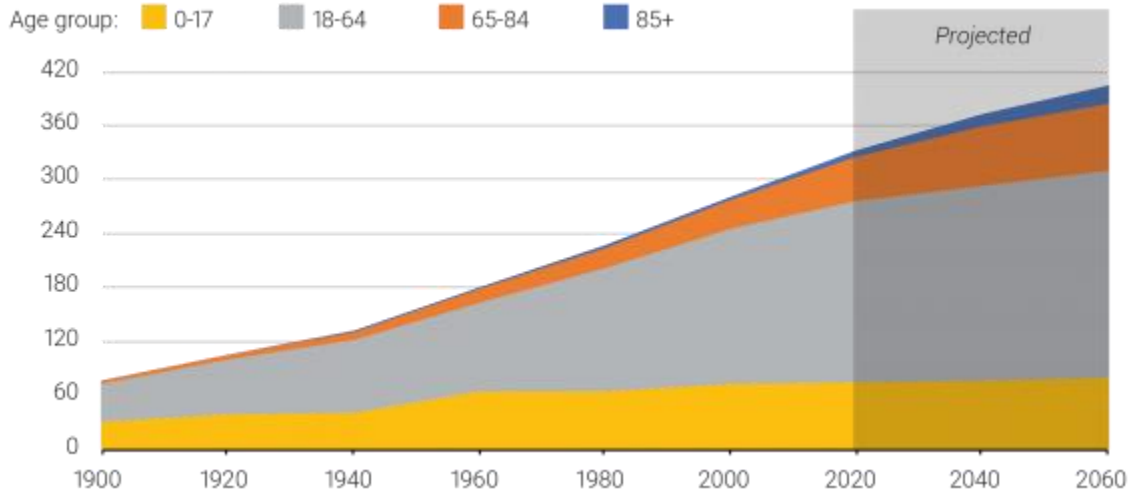


Figure 2.1: U.S. Population by age group in millions from 1900 to 2060 (Mather et al., 2019).

2.1.2 Rural Population Aging Trend

Notably, rural populations exhibit a demographic that skews older when compared to their urban counterparts. According to the most recent U.S. Department of Agriculture's annual report titled "Rural America at a Glance", the statistics for 2021 reveal a distinct trend: over 20% of rural residents are aged 65 or older, while urban areas exhibit a 16% equivalent.

Research conducted by Mattson (2017) aligns with these observations, underscoring that rural communities have witnessed a more substantial surge in median age and the proportion of individuals aged 65 or above throughout the last decade, as illustrated in Figure 2.2. This collective evidence distinctly highlights a discernible aging trajectory within rural regions,

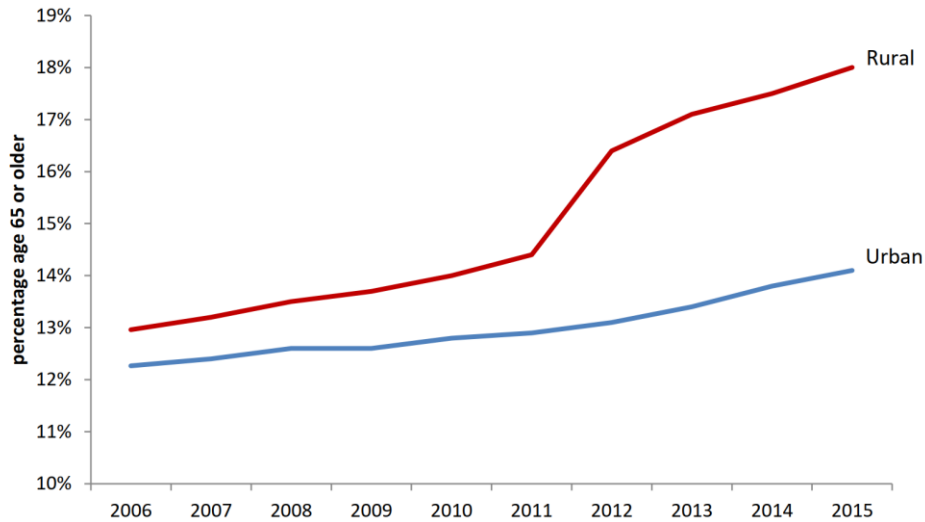


Figure 2.2: Percentage of population aged 65 or older from 2006 to 2015 in urban and rural U.S. (Mattson, 2017).

2.1.3 Factors of Aging Trend

Various factors contribute to population aging and the urban-rural demographic imbalance. The drivers of population aging include declining fertility rates, increased life expectancy, and migration patterns (for countries like the U.S.) (United Nations, 2019). Furthermore, research has delved into the reasons behind older adults' preferences for suburban and rural areas. Serow's study (2001) revealed that retirees favor these regions due to lower living costs and a perceived higher quality of life. Cromartie & Nelson (2009) identified a migration trend among older adults from urban to suburban and rural areas, influenced by factors such as housing prices and family connections. Adding to these findings, Jauhiainen (2009) emphasized the allure of natural surroundings in these locations, using a case in Finland, which often attract older adults seeking aesthetic appeal and tranquility.

In conclusion, population aging is a global trend, with older adults forming a significant and growing proportion of the population. Rural areas tend to have older populations

compared with urban areas, and researchers have explored the reasons behind this urban-rural demographic imbalance, including retirees' preferences for lower living costs, quality of life, and the appeal of natural environments in suburban and rural regions. Understanding these trends and factors is crucial for developing age-friendly policies and transportation services that cater to the unique needs and preferences of older adults in non-urban areas.

2.2 Impacts of Transportation Limitations on Older Adults

Transportation plays a vital role in maintaining the independence and well-being of older adults, supporting healthy aging, which encompasses optimal physical, mental, and social well-being and function (Lang et al., 2006). However, when faced with limitations in mobility or traveling, older adults encounter significant challenges that can profoundly affect their quality of life.

2.2.1 Access to Services

Limited transportation options create barriers for older adults in accessing essential services, such as shopping, banking, and healthcare. Currie and Delbosc (2010) highlighted how transportation disadvantage hinders access to daily necessities. A national poll conducted by the National Aging and Disability Transportation Center (NADTC) and KRC Research (2018) reported that 40% of older adults who do not drive are deprived of activities and errands they need or enjoy.

2.2.2 Health Impacts

Transportation limitations have far-reaching health consequences. Restricted access to goods and services can lead to poor health outcomes, such as inadequate nutrition and

compromised health (Lee & Frongillo, 2001). Additionally, mobility limitations hinder older individuals from obtaining timely and quality healthcare services (Fitzpatrick et al., 2004), potentially leading to various medical conditions (Seeman, 1996).

2.2.3 Social Isolation

The impact of transportation limitations on social isolation is evident. Studies have shown that limited transportation options in rural areas restrict social interaction, leading to feelings of loneliness and isolation (Shergold et al., 2012). Similarly, transportation limitations curtail participation in community activities, exacerbating social exclusion (Rosenbloom, 2004). The adverse effects extend to the well-being of both older adults themselves and their communities (Kawachi & Berkman, 2000).

2.2.4 Mental Well-being

The lack of transportation options can significantly impact the mental well-being of older adults. Ritter et al. (Ritter et al., 2002) reported that older adults experience feelings of dependency and/or embarrassment when they have to depend on family and friends for transportation. Mindell et al. (Mindell et al., 2014) further discussed travelers', including older adults', stress and anxiety in using different transportation modes.

2.2.5 Impact on Family Members or Caregivers

Transportation limitations not only affect older adults directly but also impose burdens on their caregivers and support systems. Family members or informal caregivers may need to allocate significant time and resources to provide transportation assistance, affecting their own well-being, work-life balance, and financial stability (Vos et al., 2023).

The multifaceted impacts of transportation limitations on older adults underscore the need for a holistic approach to address these challenges. A comprehensive strategy is crucial in ensuring the well-being and independence of older adults in suburban and rural areas.

2.3 Transportation Services for Older Adults in Suburban and Rural Areas

The transportation needs of older adults in suburban and rural areas have become a significant concern, driven by the growing aging population and the unique characteristics of these regions. This section examines the various types of transportation services specifically designed or available for older adults in these areas.

Unlike most large cities with fixed-route transit systems like railways or buses, more flexible transit options are adopted in rural areas to accommodate low population density and uncertain demand levels (Mulley, 2010; Mulley & Nelson, 2009). A report by the U.S. Government Accountability Office (2014) on rural transit services summarized typical routing types, including demand response services, fixed or flexible/deviated fixed routes, and other services like vanpools, commuter buses, demand response taxis, and ferryboats (Figure 2.3).

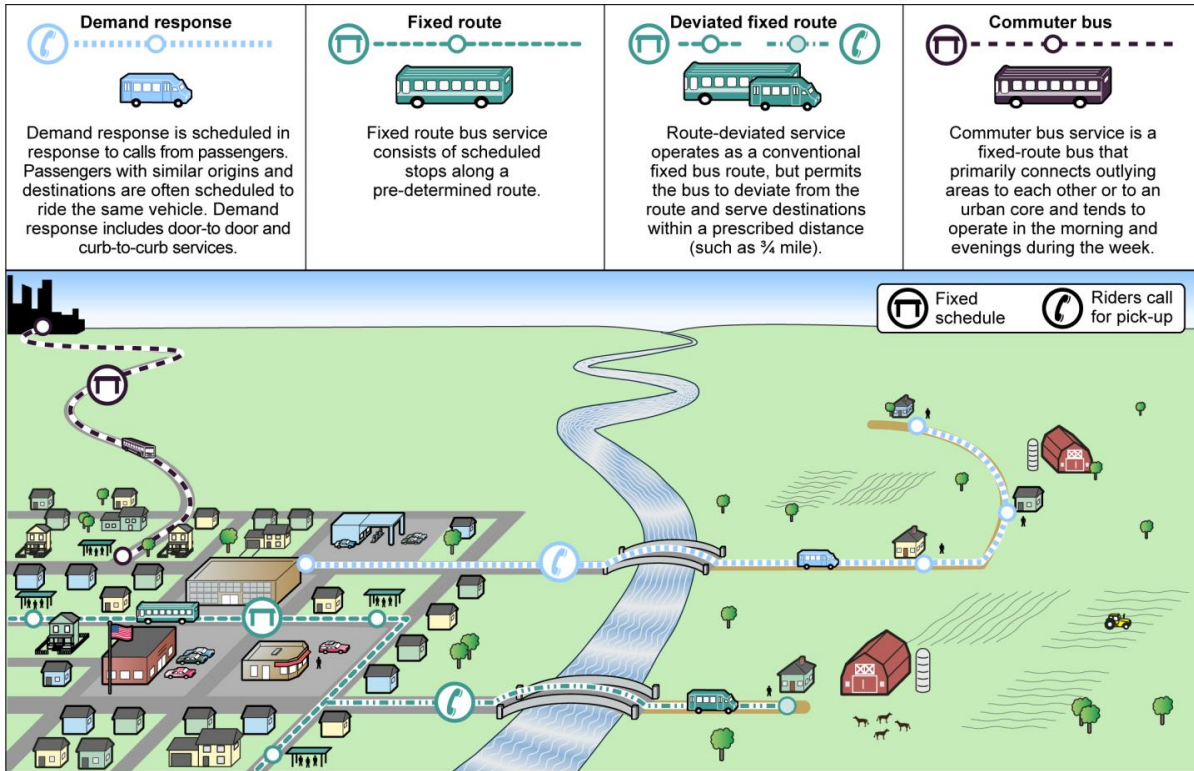


Figure 2.3: Route types of rural transit services in the U.S. (U.S. Government Accountability Office, 2014).

To further explore transportation services for older adults in suburban and rural areas, different programs are summarized.

2.3.1 Public Transportation

Public transportation, while often limited in suburban and rural settings, remains a critical service for many older adults. Some communities have introduced senior-friendly public transit options with features like lower steps and increased timing at stops (Rosenbloom, 2009). However, the availability and frequency of these services can vary significantly between different areas (Mattson, 2017).

2.3.2 Paratransit Services

Paratransit services offer specialized transportation for individuals who are unable to use regular public transit due to disability or age-related limitations. These services play a crucial role in suburban and rural areas, although they may face challenges such as high cost per passenger (Lave & Mathias, 2000).

2.3.3 Volunteer Driver Programs

Volunteer driver programs have emerged as a community-based solution, particularly in rural regions. These programs rely on volunteers to provide transportation to seniors for essential trips, such as medical appointments or grocery shopping (Hanson, 2014).

2.3.4 Ride-Sharing and Taxi Services

Ride-sharing platforms and traditional taxi services have also started to address the transportation needs of older adults (Freund et al., 2020). Some ride-sharing companies have introduced features specifically aimed at older users (Dupont, 2022), although accessibility in rural areas remains an issue (Bayne et al., 2021; Jiang, 2019).

2.3.5 Non-Emergency Medical Transportation (NEMT)

NEMT services are specifically designed to provide transportation to medical appointments for individuals who cannot use regular transportation. These services are particularly vital for older adults who require regular healthcare access but live in areas with limited transportation options (Smith et al., 2017).

2.3.6 Community Shuttles and Senior Centers

Community shuttles and senior centers often run transportation programs tailored to the needs of older adults. These programs might include shuttles to local shopping centers, social events, or medical facilities (Rahman, 2016).

2.3.7 Aging in Place Programs

Some regions have developed "aging in place" programs that provide comprehensive services, including transportation, to enable older adults to remain in their homes. These programs coordinate various services, including transportation, to enhance mobility and independence (Ahn et al., 2020; Greenfield, 2016).

The types and programs of transportation services for older adults in suburban and rural areas are diverse, ranging from public transit adaptations to innovative community-based solutions. However, the availability and effectiveness of these services can vary widely between different regions, reflecting a complex interplay of geographical, financial, and social factors. Addressing these challenges will be essential to ensure that older adults in non-urban areas have access to the transportation options they need to maintain their independence and well-being.

2.4 Travel Patterns of Older Adults in Suburban and Rural Areas

Understanding the travel patterns of older adults in suburban and rural areas is critical for designing policies and infrastructures that cater to the unique needs and preferences of this demographic. With the growth in the older population, particularly in rural settings, there is an

increasing need to examine the travel patterns, including travel modes, frequency, length, and purposes of travel.

2.4.1 Travel Modes

Driving a private vehicle is the dominant travel mode among adults, including seniors, in most car dependent countries such as the United States. More than 76% commuters drive alone to commute to work in each year from 2014 to 2018 according to American Community Survey data (Aevaz, 2019). There is a similar result for American commuters in 2021/2022 according to a Statista's Global Consumer Survey (Richter, 2022). As for older adults aged 65+, the proportion of driving an automobile vehicle has remained above 60% for three consecutive National Household Transportation Surveys (NHTS) in 2001, 2009, and 2017, as shown in Figure 2.4 drawn using the NHTS data (Federal Highway Administration, 2001, 2009, 2017). Note that the trips in the figure include both urban and rural areas. The proportions of driver trips (i.e., trips made via driving an automobile vehicle) are steady for adults aged 65–74 (68% to 69%) and 75+ (61% to 62%), respectively, across years. However, there is a decline (about 7%) in driver's mode share when age advances from 65-74 to 75+, mostly shifting to "passenger" mode (i.e., trips made via private vehicle but not driving by the traveler). Walking remains close to 10%. Bike, Transit, and Other Modes are in very low proportions across age groups and years.

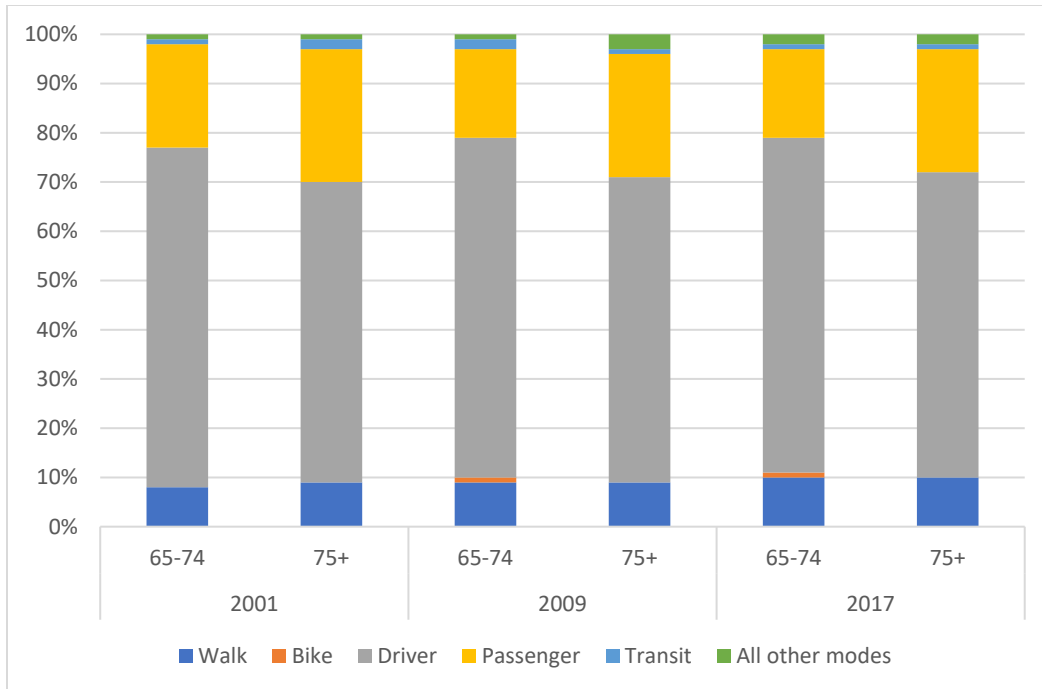


Figure 2.4: Travel mode share among older adults across NHTS years (2001-2017).

Although driving is favored by most older adults, aging is often accompanied by more limited driving (e.g., do not drive in bad weather or at night) or even cessation in driving (Hansen et al., 2020; Rosenbloom, 2001). 2017 NHTS (Federal Highway Administration, 2017) shows that around 18% of older adults over the age of 65 do not drive in their daily life due to age, disabilities, and/or financial burdens. Research estimated that older adults aged 70 years and above outlive their driving life expectancy by 11 years for women and 6 years for men (Foley et al., 2002a). When driving is limited or even impossible, it is crucial to examine other transportation modes.

A substantially larger proportion of older adults who lived in the rural areas (70%) drive a vehicle as the only means for getting to places compared with those who lived in cities (53%) (Rosenbloom, 2009). Meanwhile, with regard to mobility options other than driving, a national poll shows that only 49 percent of older adults in rural areas and small town say they have good

alternatives to driving, compared with 62 percent of older adults in large cities or suburbs (National Aging and Disability Transportation Center, 2018).

On the other hand, the number of nondrivers is growing as the rural population ages. As shown in the 2017 NHTS (Federal Highway Administration, 2017), only four percent (4%) of males and nine percent (9%) of females aged 65-74 do not drive; for older rural residents, these percentages are much higher (9 % of men aged 75-84 and 19% women aged 75-84 do not drive; 20% of men aged 85 and older and 41% of women aged 85 and older do not drive). For older adults with limited to no driving options, individuals aging in rural areas may face greater mobility challenges than their peers aging in large urban locations, mainly because the built environment, land use patterns, and transportation networks in rural areas are usually exclusively designed for the car.

In terms of older adults who do not drive, public transportation (e.g., buses, light rail, subways, shuttles and trams, ferries, etc.) and paratransit services (i.e., minibuses or small vans equipped to handle wheelchairs for seniors or those with disabilities) are common options for older adults (Hoyt, 2021). In addition, some private and specialized transportation services that are available for older adults, such as Supplemental Transportation Programs for Seniors (STPs) (AAA, 2021), and volunteer driver programs such as ITNAmerica (Gray, 2016), become viable alternatives in rural areas where no public transport is available.

However, as indicated by the Upper Great Plains Transportation Institute (UGPTI) report (Mattson, 2017), only about 25 percent of personal banking sites, grocery stores, and health care services are accessible on rural public transportation routes. Though 82 percent of rural counties have some level of public transportation, these data grossly overestimate actual

service since they seldom reflect areas within a county that are completely without public transportation, let alone needed services. County subdivision data are equally problematic since many western states have large counties with areas having no transportation options. Meanwhile, despite a culture of rural connectedness where often neighbor looks after neighbor (Nocon & Pearson, 2000), volunteer-based transportation options are not robust in rural areas.

As shown in Figure 2.4, Transit and Other Modes made up only a small percentage of travels. A survey conducted by the National Aging and Disability Transportation Center (National Aging and Disability Transportation Center & KRC Research, 2018) reported that 40% of older adults who do not drive consider the existing transportation alternatives to be inadequate and not responsive to their needs, and when they can no longer drive, they mostly rely on family and friends for transportation. This is especially true in rural communities as rural public transportation is not often an option (Brown et al., 2020).

2.4.2 Trip Frequency

Generally, older adults travel less frequently than younger adults. Figure 2.5 shows the average daily person trips by age among adults across 2001, 2009, and 2017 using the NHTS data (Federal Highway Administration, 2001, 2009, 2017). For example, older adults aged over 65 across the U.S. took 3.2 trips per day compared with 3.7 trips per day by adults aged 36 to 65 and 3.4 trips per day by adults aged 21 to 35 in 2017. Note that the trips in the figure include both urban and rural areas.

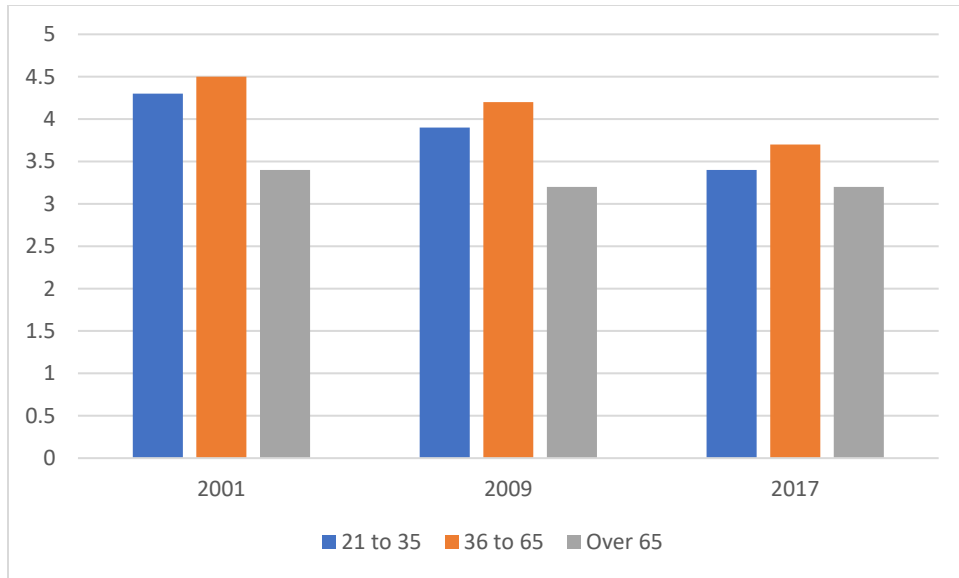


Figure 2.5: Average daily person trips by age groups across NHTS years (2001-2017).

A telephone survey of adults aged 50+ in 1998/1999 by the AARP reported similar results. Respondents aged 75+ took 2.5 trips on the survey day on average, while those aged 50-74 took 3.5 trips on average (Ritter et al., 2002). A focus group study of older adults aged 75+ with a small sample size (28 respondents) reported that between 1 to 6 trips per week were made per person (Coughlin, 2001). The reasons for the decline of trips of older adults compared with younger adults include poor health conditions (Ritter et al., 2002), free from having to work or provide transportation to their children (Eby et al., 2012), and lack of alternative transportation services in local communities especially for rural areas (National Aging and Disability Transportation Center, 2018), among others.

The geography of local communities, urban or rural, generally makes a difference on trip frequency. A secondary analysis of 2001 NHTS data (Pucher & Renne, 2005) revealed that individuals in rural areas traveled less frequently than those in urban areas. On average, older

adults aged 65+ in rural areas made 3.2 trips per day per person compared with 3.4 trips per day per person for the rural counterparts. In a small survey in 1998/1999, Coughlin found that both suburban drivers and non-drivers took fewer trips than urban non-drivers (Coughlin, 2001).

The trip frequency is also associated with socio-demographic characteristics, such as age, gender, health condition, and Income level. Older seniors took fewer trips than younger seniors. For example, from 2001 NHTS, older adults aged 65-69 took 3.7 trips per day per person as compared with 2.0 trips per day per person for those aged 85+ in rural areas, while older adults aged 65-69 took 3.9 trips per day per person as compared with 1.9 trips per day per person for those aged 85+ in urban areas (Pucher & Renne, 2005).

Males took more trips than females in general. Older males age 65+ took 3.9 daily trips per person while older females took 3.2 daily trips per person in 2001 NHTS (Collia et al., 2003). In 2017 NHTS, older males compared with females took 3.4 versus 3.0 daily trips per person on average (McGuckin & Fucci, 2018).

Older adults with bad health conditions tend to take fewer trips than those with excellent health conditions (Lyman et al., 2001; Ritter et al., 2002). The decline in trip frequency that accompanies aging may be related to declines in health condition.

A secondary analysis on the 2001 NHTS revealed that people from low-income households took fewer trips, as shown in Figure 2.5, which is drawn using the data from Pucher & Renne (2005). Note that the data used for the figure include respondents from all age groups, not limited to older adults. It can be found that respondents from households with income more than \$40,000 took more than 4 daily trips per person, regardless of whether they are from urban or rural areas. Those from households with less income took less than 4 daily trips

per person. When the household income is less than \$20,000, there are only 3.2 daily trips made per person (Pucher & Renne, 2005).

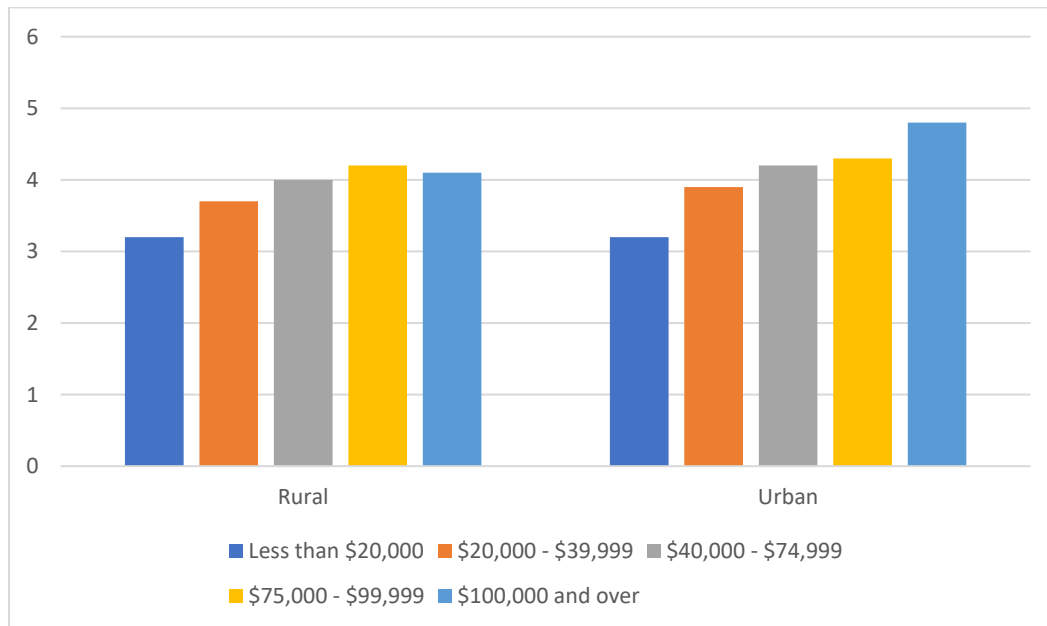


Figure 2.6: Average daily person trips by household income in rural and urban areas in 2001 NHTS (Source: Pucher & Renne, 2005).

Note: Data used for this figure include respondents from all age groups, not limited to older adults.

2.4.3 Trip Length

Trip length refers to the length of the spatial distance (time spent is also used sometimes) along the route traveled by certain transportation modes for the trip. In practice, daily person miles or annual person miles are used to represent the average level of trip length per capita. On examination of NHTS data from various years, McGuckin & Fucci (2018) concluded that older adults travel for shorter distance compared with younger adults, and females travel for shorter distance than males on average. For example, in 2019, older adults aged over 65 traveled for 24.0 miles daily on average, compared with 44.0 miles daily for adults

aged 36 to 65 and 37.7 miles daily for adults aged 21 to 35. Female adults over 65 traveled 19.3 miles daily while male adults over 65 traveled 30.5 miles daily on average.

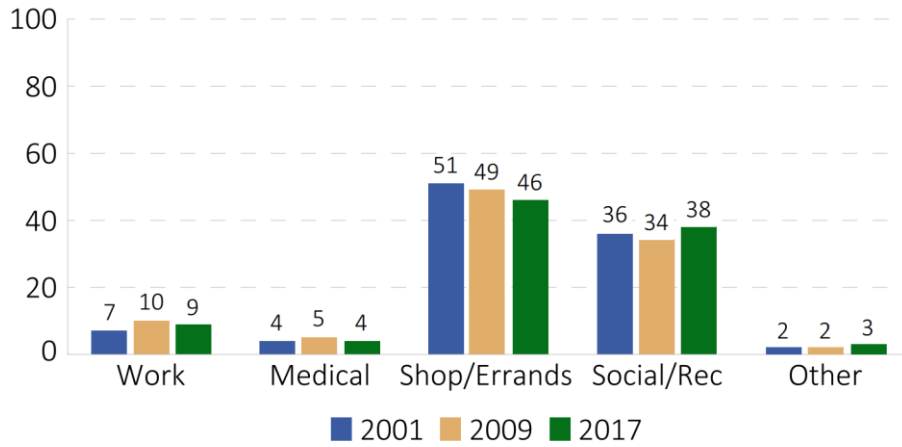
Using 2001 NHTS data, Pucher & Renne (2005) made a rural-urban comparison among older adults aged 65+. On average, every rural senior traveled 26.0 miles daily compared with 18.7 miles for urban counterparts. This does not necessarily mean that rural seniors have better mobility than urban seniors, remembering that rural seniors took fewer trips than urban seniors on average. The difference may come from the low density in rural areas. A survey of rural and small urban areas in North Dakota (Mattson, 2011) found that, on traveling to the most frequent destination from home, 13% of seniors need to travel for more than 20 miles while 24% of seniors need to travel for less than one mile. Pucher & Renne (2005) further divided older adults aged 65+ into sub-groups with 5-year ranges for both rural and urban data. There is a consistent trend that the average daily person miles decline for either geographical setting when age increases.

2.4.4 Trip Purpose

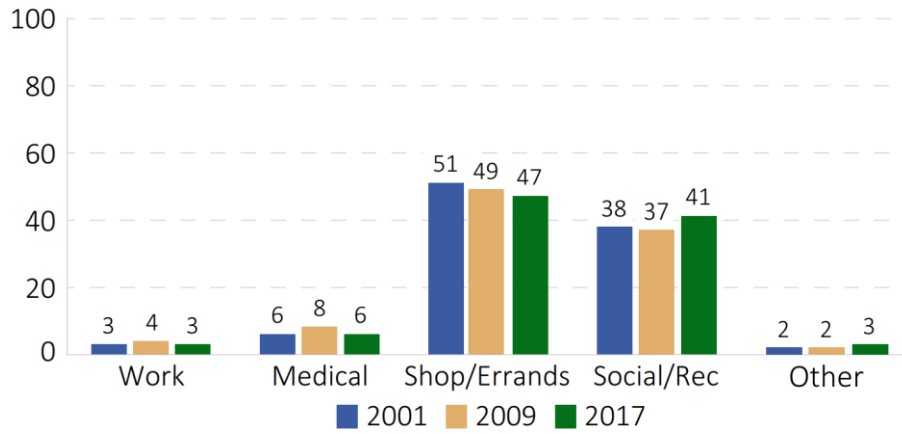
For younger adults, work is among the most frequent trip purposes. But for older adults, work-related travel makes up only a small portion of daily travel. A study (Collia et al., 2003) on 2001 NHTS data found that younger adults aged 19-64 made 16% of daily trips for work while older adults aged 65+ made 3%, with return home considered as one of the purposes. Both younger and older adults made a large portion of daily trips for social and recreation (17% and 19%, respectively), family/personal business (16% and 18%, respectively), and shopping (13% and 18%, respectively). FHWA (Federal Highway Administration, 2019) took a closer look at the trip purpose of older adults. Return home was broken down into corresponding purposes. Two

sub age groups (i.e., 65-74 and 75+) were considered, using three years (2001, 2009, and 2017) of NHTS data. As shown in Figure 2.7, shop/errands and social/recreational for both older adults aged 65-74 and those aged 75+ are the top two options. Older adults aged 65-74 made more work trips in percentage than those aged 75+, while those aged 75+ made more medical and social/recreational trips in percentage. Mattson (2012) found similar results using 2009 NHTS data.

FHWA (Federal Highway Administration, 2019) also reported that there is no difference in the distribution of trip purposes whether the older adults live in urban or rural areas. Bailey (2004) highlighted the differences in trip frequencies by trip purpose among older drivers and older non-drivers. Older non-drivers made 15% fewer medical trips, 59% fewer shopping trips and 65% fewer social trips. As for percentage of trips by purpose, Coughlin found that older drivers make more trips for medical purpose and fewer trips for shopping purposes in percentages than older non-drivers in suburban areas with a small sample size (10 older drivers and 10 older non-drivers).



a) Older Adults Aged 65-74



b) Older Adults Aged 75+

Figure 2.7: Percentage of trips by purpose by NHTS year among older adults (Source: Federal Highway Administration, 2019).

2.4.5 Non-Traveling Older Adults

Some older adults did not travel on the survey day. As revealed by the Federal Highway Administration using 2001, 2009, and 2017 NHTS data, among older adults aged 65+, non-travelers tended to be female, without a medical condition that limited travel, retired, and with a household income less than \$50,000 (Source: Federal Highway Administration, 2019), as shown in Figure 2.8. Bailey paid special attention to older adults who are not driving (Bailey, 2004). The 2001 NHTS data showed that 17% driving older adults took no trip on the survey day while 54% non-driving older adults took no trip on the survey day. The non-traveler rate among non-driving older adults was 51% in urban areas, and about 60% in rural areas and small towns.

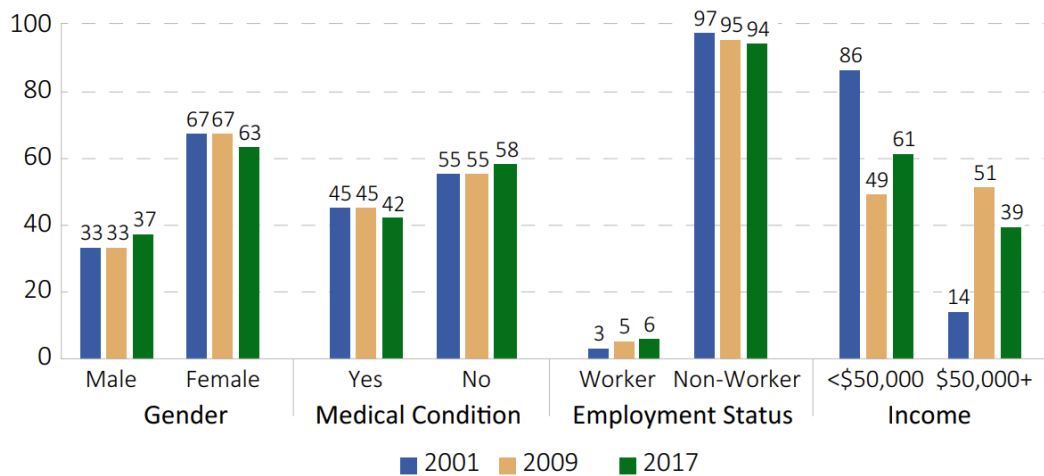


Figure 2.8: Percentage of older non-travelers by characteristic and NHTS year (Source: Federal Highway Administration, 2019).

To better understand personal social isolation, Mattson examined not only respondents who did not travel on the survey day, but also those who did not travel in the past week, using 2009 NHTS data (Mattson, 2012). The two versions of definition of non-traveler (or “Stayed in Same Place”) yielded similar results. Older adults, females, individuals with medical conditions,

individuals from rural areas, from larger households, with lower household income predict a higher likelihood of not making trips on the survey day and in the past week. It is notable that the findings on gender and household income in Mattson's study are consistent with the FHWA report (Federal Highway Administration, 2019). However, the results on medical conditions are contrary.

The travel patterns of older adults in suburban and rural areas provide critical insights into their daily lives and mobility needs. Predominant reliance on private vehicles, decreased frequency of travel, shorter trip lengths, and trip purposes centered on personal and recreational activities underscore the specific needs and challenges faced by this population segment.

2.5 Transportation Challenges of Older Adults in Suburban and Rural Areas

Older adults often encounter various challenges in accessing transportation services, significantly impacting their mobility, social engagement, and overall well-being.

2.5.1 Physical Limitations, Safety Concerns, and Accessibility

Aging-related factors, such as reduced muscle strength, joint flexibility, and declining vision, often lead to mobility limitations and physical impairments in older adults. These challenges can make it difficult for them to use public transportation, such as walking long distances or boarding and alighting from vehicles (Metz, 2000). Oxley and Whelan (2008) explored the physical challenges faced by older adults when accessing transportation, highlighting the importance of considering their physical needs to overcome accessibility barriers. Additionally, Black et al. (2015) noted that aging-related health limitations, combined

with environmental barriers like spatial segregation and heavy traffic, pose safety concerns for older adults during their transportation to social activities and essential services. To enhance the mobility and confidence of older adults, it is crucial to ensure safe and accessible transportation environments.

2.5.2 Limited Public Transportation Services

Suburban and rural areas often lack adequate access to public transportation options, with infrequent bus routes and a scarcity of nearby transit stops. Rosenbloom (2004) and Satariano et al. (2012) have identified how this limited transportation infrastructure disproportionately affects older adults, becoming a barrier to their mobility. Improved public transportation options in these areas are essential to address the unique needs of older adults and provide them with better mobility opportunities.

2.5.3 Financial Burdens

Financial constraints can pose significant barriers for older adults in accessing transportation, particularly for those living on fixed incomes. The expenses associated with private car ownership, taxi fares, or ridesharing services may become burdensome, restricting their transportation choices. Shaheen et al. (2012) have highlighted the issue of affordability, especially among lower-income older adults. Currie and Delbosc (2010) further demonstrated how transportation costs can significantly limit older adults' mobility and access to essential services and social connections. Implementing more affordable transportation options tailored to the needs of older adults can alleviate these financial burdens.

2.5.4 Information and Technology Gaps

With the increasing integration of technology into transportation services, older adults may face challenges in adopting and using digital platforms to access rideshare or on-demand transportation services. The digital divide exacerbates transportation disparities among older adults, especially for those less familiar with technology or lacking access to smartphones and the internet. Dabelko-Schoeny et al. (2021) discussed how older adults may struggle to access information about transportation options among other issues, while Vivoda et al. (2018) highlighted the technology gap hindering their use of modern tools like transportation apps. Ensuring user-friendly and accessible technology solutions can bridge this gap and enhance transportation accessibility for older adults.

2.5.5 Psychological and Social Factors

Psychological and social factors play significant roles in understanding transportation challenges for older adults. The fear of falling or social isolation can limit their use of public transportation (Peel et al., 2002). Additionally, Shergold et al. (2012) explored the influence of social networks and community support in transportation accessibility. Addressing these factors requires promoting community-based programs that prioritize the well-being of older adults and offer supportive transportation services.

To address the challenges faced by older adults in suburban and rural areas, a comprehensive approach is essential. This includes improvements in public transportation infrastructure, the provision of age-friendly and affordable transportation services, and the implementation of community-based programs tailored to the unique needs of older adults. By addressing these challenges, policymakers and transportation planners can create a more

inclusive and accessible transportation system that empowers older adults to maintain their independence and actively participate in community life.

2.6 Research Gaps

The review of existing literature on understanding and addressing the transportation needs of older adults in suburban and rural settings exposes several significant gaps. These gaps highlight the need for further research in various areas, as summarized below:

1. **Under-emphasis on Suburban and Rural Areas:** A substantial portion of the current literature is focused predominantly on urban regions, resulting in a dearth of research on the specific transportation needs of rural populations. The distinct characteristics of suburban and rural communities often remain inadequately examined.
2. **Neglect of Alternative Transportation Modes:** Predominantly, research emphasis has been given to prevalent modes of transportation, such as driving and walking. However, alternative transportation modes, crucial for older adults with health or financial restrictions, remain under-studied and necessitate more research attention.
3. **Limited Incorporation of Older Adults' Perspectives:** A significant portion of existing studies leans heavily on quantitative data or third-party observations, with minimal direct input from older adults. There is a pressing need for more qualitative research that encapsulates the lived experiences and preferences of older adults, providing a richer, more nuanced understanding of their needs.

4. **Absence of Diverse Perspectives:** Current research often focuses on either the needs and preferences of older adults or statistical data and viewpoints from transportation agencies. An exploration of the potential knowledge gap in transportation agencies regarding older adults' transportation needs and preferences remains an unmet research need.
5. **Inadequate Emphasis on Stakeholder Collaboration:** Rarely do studies take into account the necessary collaboration among diverse stakeholders, such as public transportation authorities, community organizations, healthcare providers, and local governments. Research probing into multi-stakeholder approaches to enhance older adults' mobility in suburban and rural regions could significantly enrich the field.
6. **Under-exploration of Technological Solutions:** Although some studies have broached the topic of technology's role in ameliorating transportation for older adults, a comprehensive exploration of technologies' full potential—such as ride-sharing apps, GPS-enabled public transportation systems, or automated vehicles—remains wanting, especially in suburban and rural contexts.
7. **Scant Research on Tribal Settings:** While a majority of research concentrates on urban settings, with fewer studies focusing on suburban and rural contexts, research addressing the unique transportation needs of older adults living in tribal communities is markedly scarce.

In conclusion, while existing literature contributes valuable insights into older adults' transportation needs in suburban and rural regions, notable gaps remain. Addressing these

gaps through future research initiatives could provide more comprehensive, inclusive, and effective transportation solutions for this crucial demographic.

2.7 Summary

Population aging is a global phenomenon, with rural areas experiencing a higher proportion of older adults compared with urban regions. Understanding the reasons behind this demographic imbalance, such as retirees' preferences for lower living costs and natural environments in non-urban areas, is crucial for developing age-friendly policies and transportation services tailored to the needs of older adults in suburban and rural regions. The multifaceted impacts of transportation limitations on older adults underscore the need for a holistic approach to address these challenges, considering access to services, health impacts, social isolation, economic factors, mental well-being, and impacts on family members or caregivers. Diverse transportation services for older adults exist in non-urban areas, but their availability and effectiveness vary widely due to geographical, financial, and social factors. Implementing comprehensive strategies is vital to ensure the well-being and independence of older adults in these regions.

Understanding the travel patterns of older adults in suburban and rural areas is critical for policy and infrastructure design. As the older population grows, particularly in rural settings, examining travel modes, frequency, length, and purposes is essential. These patterns reveal a predominant reliance on private vehicles, reduced travel frequency, shorter trip lengths, and trips centered on personal and recreational activities. These are the specific needs and challenges faced by older adults in non-urban areas. To address these challenges, a

comprehensive approach is necessary, involving improvements in public transportation infrastructure, age-friendly and affordable transportation services, and community-based programs catering to the unique needs of older adults. By taking these steps, policymakers and transportation planners can create an inclusive and accessible transportation system, empowering older adults to maintain their independence and active engagement in their communities.

Chapter 3 Wisconsin Aging Trends and Current Programs

This chapter focuses on the aging trends and transportation programs in Wisconsin, a state that comprises both urbanized and rural areas, with a significant proportion being rural. While aging is a global phenomenon, its manifestations vary from one nation to another, from state to state, and between urban and rural settings. Within this context, the chapter dives into the aging trends specific to Wisconsin. It highlights transportation programs available in the state, encompassing both public accessible services and those tailored to meet the needs of older adults. Additionally, two specific examples of such transportation programs will be presented. Furthermore, the chapter examines the practices of transportation outreach and education for older adults in Wisconsin. By thoroughly exploring these aspects, a comprehensive understanding of the transportation landscape for older adults in Wisconsin will be achieved.

3.1 Wisconsin Aging Trends

Wisconsin's population is aging, with rural areas seeing a greater rate of aging. The number of persons aged 65 and older is expected to grow by 640,445, an increase of 72% between 2015 and 2040, according to the data provided by Wisconsin Department of Health Service (Grosso, 2015). Projected decennial population changes by age groups from 2010 to 2040 are shown in Table 3.1 (Egan-Robertson, 2013). Northern Wisconsin, compared with other Wisconsin towns and counties, is expected to experience the most significant demographic change (Yu et al., 2019) as illustrated in Figure 3.1. By 2040, according to projections, three out

of every ten inhabitants in each northern Wisconsin county will become senior citizens (age 65 or older). Eighteen counties in Wisconsin are projected to have at least 33% of their total population aged 65 and older (Egan-Robertson, 2013). Despite the overall trend of significant population percentage growth in northern Wisconsin, it is important to note that certain large urban areas, such as Dane County with a growth of 73,091 older adults, Milwaukee County with 56,813, and Waukesha County with 46,470, will experience substantial increases in the absolute number of older adults' population.

Table 3.1: Projected Population and Increase by Age Group in Wisconsin (Egan-Robertson, 2013)

Age Group	Census 2010	Projected 2020	Percentage change (2010 to 2020)	Projected 2030	Percentage change (2020 to 2030)	Projected 2040	Percentage change (2030 to 2040)
0 to 4	358443	367375	2.49%	378340	2.98%	373940	-1.16%
05 to 24	1530305	1514625	-1.02%	1571400	3.75%	1571365	0.00%
25 to 44	1447360	1492505	3.12%	1537485	3.01%	1493595	-2.85%
45 to 64	1573564	1566645	-0.44%	1464365	-6.53%	1517370	3.62%
65 to 84	658809	929800	41.13%	1251210	34.57%	1251765	0.04%
85 and over	118505	134130	13.19%	173110	29.06%	283600	63.83%
Total	5686986	6005080	5.59%	6375910	6.18%	6491635	1.82%

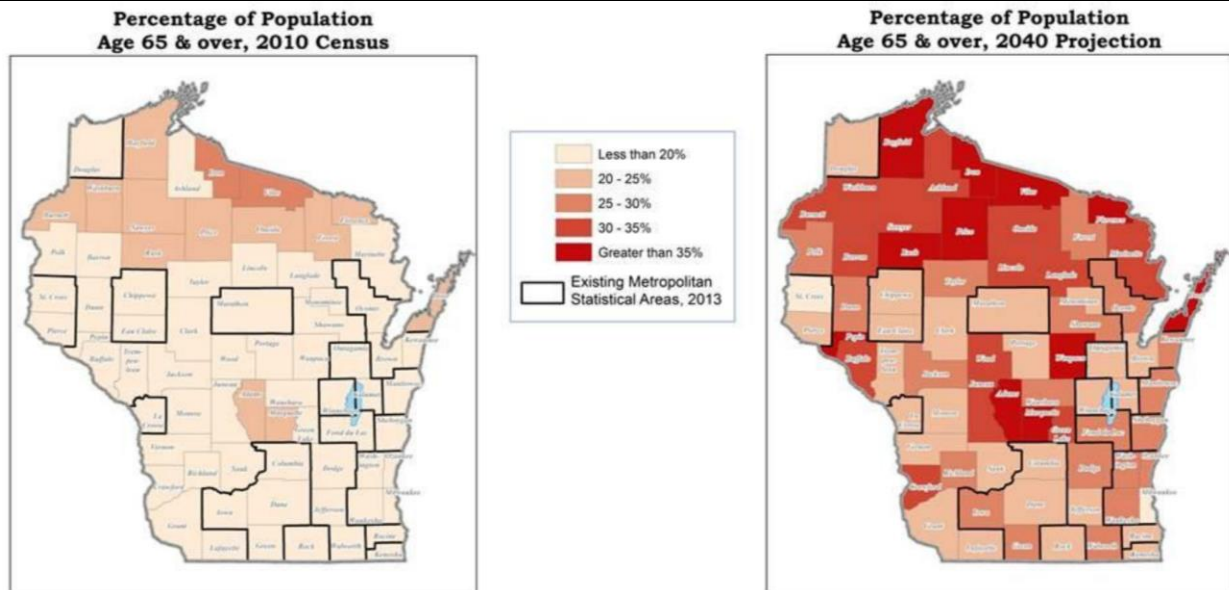


Figure 3.1. Percentage of population age 65 and older by county in Wisconsin (Egan-Robertson, 2013).

3.1.1 Aging Population Challenges

Three significant challenges are faced by the aging population, namely mobility, age-related diseases, and poverty. These challenges have a profound impact on the well-being and quality of life of older adults. Mobility limitations can restrict their access to essential services and social activities, while age-related diseases pose health risks and require appropriate healthcare support. Additionally, poverty among older adults can further exacerbate these challenges, making it difficult to meet their basic needs and access necessary resources. Addressing these challenges effectively is crucial to ensuring a positive and dignified aging experience for seniors.

Mobility

By 2040, more than one in five Wisconsinites will be over age 65 (Figure 3.2). As the population of seniors grows, many of its older members—especially women and the disabled—will face serious mobility constraints, often with little family assistance (Bittner et al., 2011). Milwaukee County currently has the largest number of older adult residents in Wisconsin. Many counties with small older adult populations, especially in the northern and western regions of the state, are expected to experience rapid growth over the next few years. Counties across the state are expected to see dramatic growth in their older adult populations, often in areas where access to transportation services is constrained by low population densities.

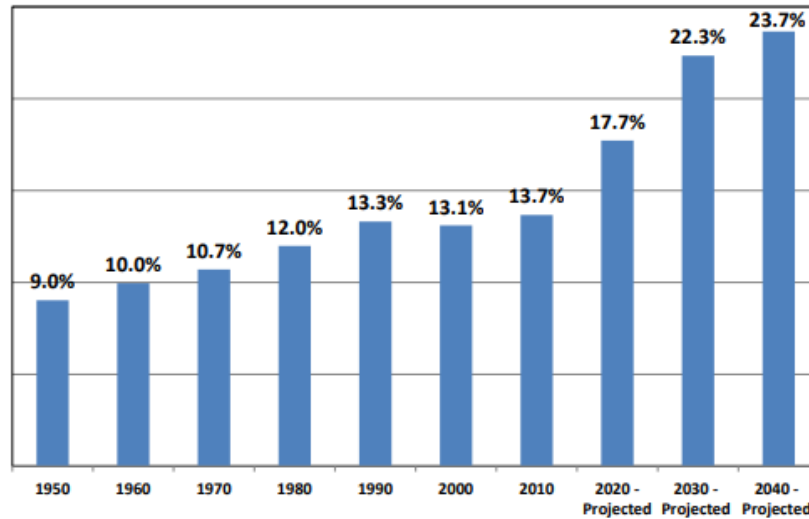


Figure 3.2. Share of total population aged 65 and older in Wisconsin (Wisconsin Department of Health Services, 2018).

Driving is a difficult task. In Wisconsin, a driver must be functionally capable of safely operating a motor vehicle to keep the license. Physical, mental, and emotional health conditions are all significant considerations for determining a driver's functional capacity to drive. Health issues might impair the judgment and expertise required to drive safely. The capacity of older adults to drive independently for necessary journeys may become less practical as they age. No/limited access to a car, no/limited access to public transportation, vast distances to destinations, cost concerns, and other health challenges are the top five mobility hurdles, in order of the most prohibitive (Yu et al., 2019). These hurdles may be preventing older individuals with mobility issues from traveling to their primary destinations, such as medical appointments, shopping for necessities, attending community or civic events, and visiting friends and family (Bittner et al., 2011).

Age Related Diseases

A variety of diseases can create physical and cognitive issues, making it more difficult to drive safely. As a person gets older, the chances of being diagnosed with one or more

conditions that make it difficult to be a safe driver increases. These conditions include dementia, difficulty in vision, awareness, movement, and others such as usage of different medications (Andrew, 2012).

According to the Alzheimer's Association, 5.3 million individuals in the United States are living with Alzheimer's disease. This equates to Alzheimer's affecting approximately 1 in 9 individuals over the age of 65 and 1 in 3 over the age of 85 (Brookmeyer et al., 2011). In 2015, 115,000 people in Wisconsin were expected to have dementia. That figure is predicted to rise to 242,000 people with dementia by 2040. The estimated increases in dementia prevalence reflect this expected growth rate. Rural communities in Wisconsin are quickly aging, with the effect being most obvious in the state's northern half. In this part of the state, the increase is expected to be faster than average. The sheer number of people affected by Alzheimer's disease is staggering.

Poverty

According to the U.S. Census Bureau's Current Population Survey, around 7.4 percent of Wisconsinites aged 65 and up lived in poverty in 2019, and the share increased to 8.7% in 2021, although these numbers are lower than the U.S. average, as shown in Figure 3.3 (AHR, n.d.). Seniors living in poverty are more likely to have difficulty obtaining enough transportation for obvious reasons, and even low-cost transportation services may be a financial strain. The highest poverty rates were evident mainly in rural counties in the northwest and southwest corners of the state (Wisconsin Department of Health Services, 2018).

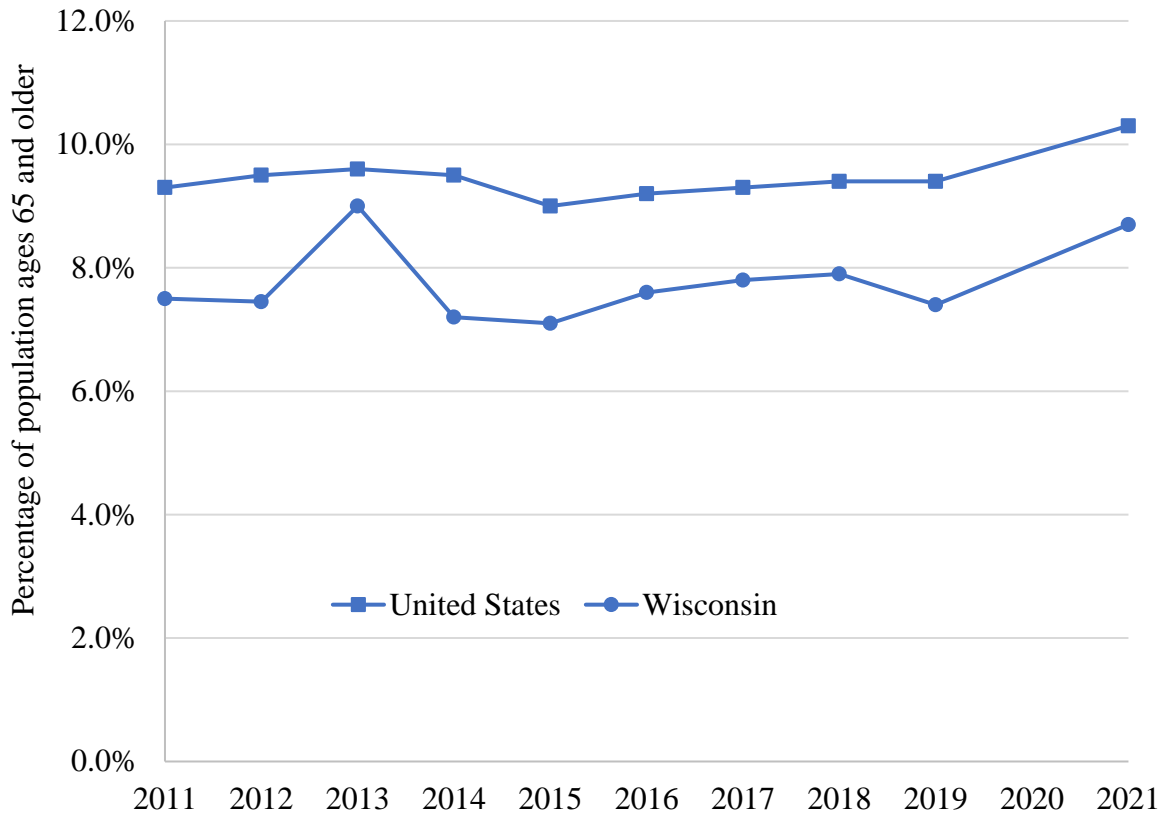


Figure 3.3. Percentage of adults ages 65 and older who live below the poverty level in Wisconsin and the United States (AHR, n.d.).

3.2 Wisconsin Generalized Public Transportation Programs

Wisconsin's public transportation systems include county-wide transit systems, multi-county transit systems, fixed-route systems, shared-ride taxis, and shuttle and inter-city services, as seen in Figure 3.4, according to the Wisconsin Department of Transportation (WisDOT) (Wisconsin Department of Transportation, 2021). Note that WisDOT updates the Wisconsin Public Transit Systems map annually at the same URL (Uniform Resource Locator) referenced here. For the purposes of this research, the information in this chapter is based on the 2021 version. However, readers may find an updated version of the map when they access the URL.

These systems provide a transportation network at the county level, providing transit services to those traveling inside the county. Rusk County, Dunn County, Clark County, Grant County, Door County, Washington County, Ozaukee County, Waukesha County, Milwaukee County, Walworth County, and western Kenosha County all have their own transit systems. Multicounty Transit systems provide transit service between two or more counties through a collaborative partnership.

In Wisconsin, fixed route services are provided along with paratransit services or a mix of paratransit and demand responsive services. Fixed route services follow a set schedule, which varies from one county or system to the next. In several counties across Wisconsin, shared ride taxi services are available. They are open to all users, although the older adults and people with impairments use them the most. Shared ride taxis may pick up and drop off customers in route to the destination of another passenger. Typically, the service must be planned one day prior to the intended trip date. Lac du Flambeau Transit system is an example of tribal public transit that provides on-demand service operating within the local and extended areas of the Lac du Flambeau with funding provided through Federal Transit Administration (FHA), Bureau of Indian Affairs (BIA), and WisDOT.

The Wisconsin Department of Transportation offers a shuttle bus service for those in need of transportation to get to work. The service is available in Racine, Kenosha, Walworth, Milwaukee, Washington, and Ozaukee counties. Railroads in Wisconsin serve passengers through Amtrak passenger rail service and Metra. Most of the intercity travel routes in Wisconsin are daily intercity bus routes provided by Indian Trails, Lamers Bus Lines, and Jefferson Lines.

Bureau of Transit, Local Roads, Railroads, & Harbors

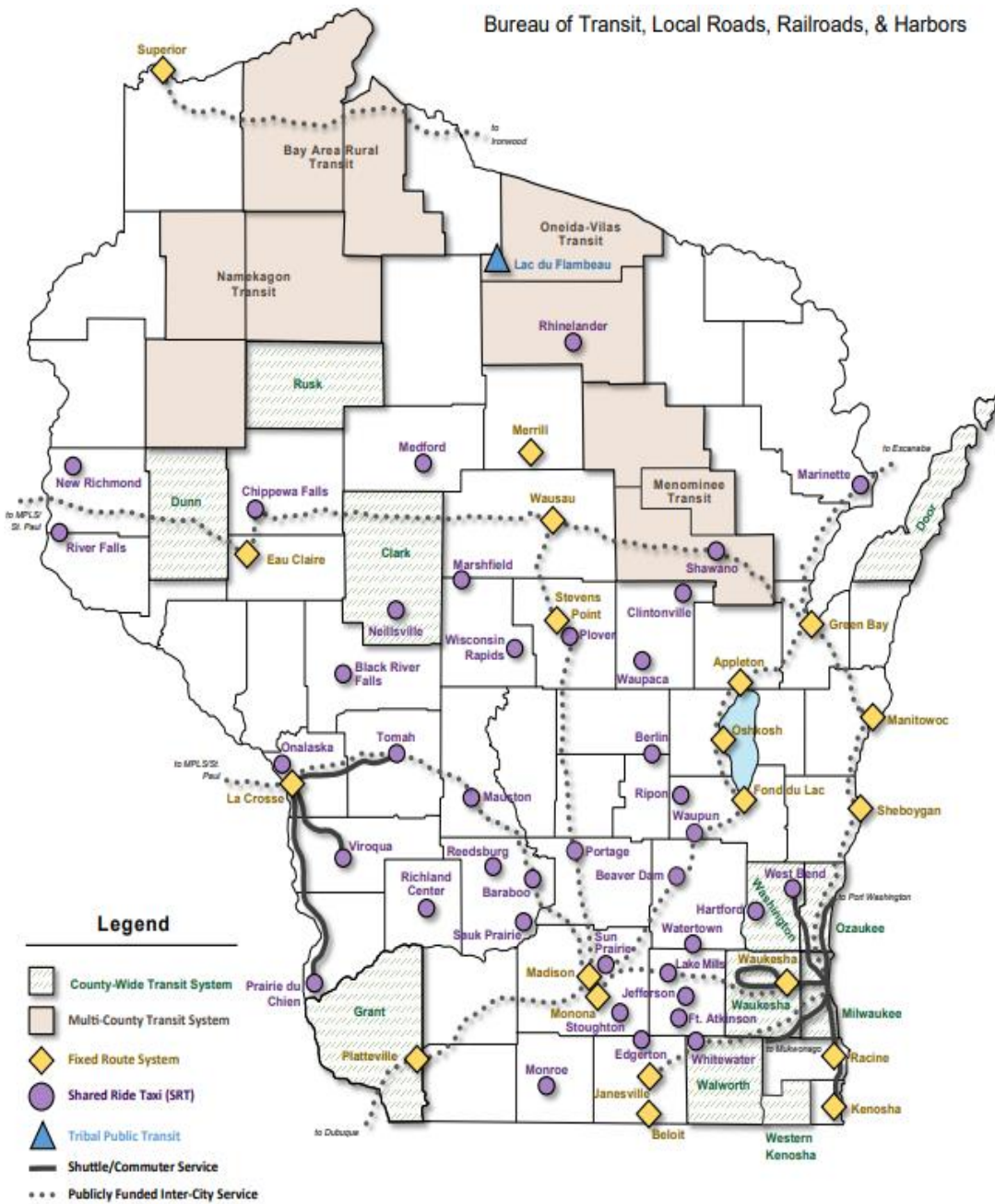


Figure 3.4: Wisconsin Public Transit System 2021 (Wisconsin Department of Transportation, 2021).

3.3 Wisconsin Mobility Programs for Older Adults

3.3.1 Specialized Transit Program

The Specialized Transportation Assistance Program (s. 85.21), Tribal Transportation for Elders (s. 85.215), Older adults and Disabled Transportation Capital Assistance Program (Section 5310/s. 85.22), and the New Freedom Initiative are the four main specialized transit programs that WisDOT administers to support older adults' mobility. Each program has its own set of objectives, processes for implementation, financing sources, and prerequisites.

The purpose of WisDOT's Specialized Transit Services is to give additional assistance to help seniors (65 and older) and Americans with disabilities overcome barriers to fully participate in society and have access to basic community services. The initiative aims to provide people with disabilities with mobility options that go beyond the requirements of the Americans with Disabilities Act of 1990. Individuals who are transportation-challenged encounter distinct problems in obtaining services, depending on whether they live in the city, the country, or the suburbs. Furthermore, the geographical dispersion of mobility-disadvantaged people makes it difficult for human assistance providers to provide transportation to their clients.

Funding is available to counties, other local government bodies, and non-profit groups. Labor, gasoline, maintenance, volunteer drivers, vouchers, and other operating costs are all included. Vehicles, equipment, and mobility management positions are examples of capital costs. There are some challenges that must be addressed while administering such programs. In Wisconsin, the share of senior citizens is increasing. Residents are increasingly opting to age in place and preserve their freedom. As a result, there is a growing demand for specialized

transportation. Providing specialized transportation service is getting more difficult, especially in rural areas of the state where population density is lower, distances to services are larger, and finding paid and volunteer drivers is becoming increasingly difficult.

Possible policy and budget opportunities include increasing the funding available for specialized transit programs and reestablishing formalized coordination efforts among state agencies with transportation interests (e.g., Transportation, Health Service and Veterans Affairs) (*Wisconsin Department of Transportation Transit Assistance Programs*, n.d.).

3.3.2 Volunteer Driver Program

Volunteer transportation is an alternate shared option that has a lot of potential to serve the target community. Over 60 volunteer driving programs exist in Wisconsin (Carrie Diamond, 2020). Volunteer transportation could help older adults and people with disabilities. The Greater WI Agency on Aging Resources, Inc. conducted a survey in 2019 to identify volunteer programs in Wisconsin. In many areas, the volunteer driver program is the only transportation service available to those who cannot or do not drive. The Department of Transportation is looking at ways to improve mobility options for older adults, especially in rural areas. A volunteer driver program can be found in almost every county in the state. Volunteer drivers are a cost-effective (but not free) way to put private resources to work for the public good. Volunteer drivers provide a high level of service to some of the state's most vulnerable individuals, usually door to door. Individuals who are unable to traverse a traditional system, those with dementia, and dialysis patients who require early morning or Saturday treatments are among them. Volunteer driver programs help bridge the gap between other modes of

transportation by going where buses do not and providing trips that are too expensive to take by bus.

Volunteer Transportation Organizations (VTOs) have been around for over a hundred years. Older adults who once relied on family members or close friends to transport them now rely on VTOs. The nonprofit provides low-cost, free transportation for older adults. Older adults often do not have the same economic flexibility as younger demographics. Ride hailing, bike sharing, and carsharing are all trendy and innovative methods to move those with flexible incomes from point A to B. Transportation options for older adults, who may have fixed income (Social Security or other public benefits) should better fit their budgets and needs.

Volunteers play an essential role in the development of a comprehensive transportation network. Increased financing for volunteer driver programs may result in increased service coverage, particularly in areas not serviced by public transit. Furthermore, adopting volunteer driver mileage compensation schemes may help to recruit more volunteers.

3.3.3 Mobility Management Program

Mobility management is a new way of organizing and delivering integrated mobility services to clients, such as seniors, people with disabilities, low-income people, and the general public. Through a variety of transportation alternatives and services, mobility management seeks to suit unique client needs. Rather than focusing on managing the supply of a single service or mode of delivery, such as rail, bus, or van service, the mobility manager focuses on the client and finding solutions to his or her transportation problems using a range of providers, service modes, and methods (WisDOT, 2015).

Mobility managers work for a range of institutions, including aging and disability resource centers (ADRCs), local governments, transportation systems, human service and social assistance agencies, independent living centers, employment, and community development groups. Simplified transportation access, better knowledge of transportation alternatives, higher transit usage, decreased service gaps and overlap, and increased efficiency are some of the general benefits of mobility management. Mobility management can improve access to health care, jobs, social services, and amenities for those who are unable to drive (WisDOT, 2015).

Several federal and national organizations provide mobility management services or advocate for the growth of the mobility management concept. These include the Federal Interagency Transportation Coordinating Council on Access and Mobility (CCAM), United We Ride, Mobility Services for All Americans (MSAA), National Center for Mobility Management (NCMM), Veterans Transportation Service (VTS) program, and so on.

Mobility management in Wisconsin unofficially began in October 2005 when the Interagency Council on Transportation Coordination (ICTC) was formed (WisDOT, 2015). Federal Transit Administration New Freedom, 5317 funding was available starting in 2008 specifically for hiring mobility managers. WisDOT continues to support the state's improved development and efficiency in mobility management techniques, as well as working to enhance understanding of the idea. In Wisconsin, however, the path that mobility management initiatives follow is a local option that is neither regulated nor imposed by WisDOT, except to guarantee project eligibility according to the appropriate funding source. Table 3.2 lists the geographical coverage of Section 5310 (Enhanced Mobility of Seniors & Individuals with

Disabilities)-funded mobility management services in Wisconsin. It does not provide information about the coverage of mobility management services that are funded in other ways. It also excludes people who may provide mobility management services but are not classified as mobility managers.

Table 3.2: Cycle 45 (2021) 5310 Grant Awards – Mobility Management (WisDOT, 2021)

Subrecipient	Counties Served	Project Detail
Center for Independent Living – Western Wisconsin, Inc.	42 counties mostly in NW & NC Wisconsin	Call-Center; mobility management
City of Stevens Point	Portage	Call-Center; Mobility Management
County of Jefferson	Jefferson	Mobility Management services
County of Manitowoc	Manitowoc	Mobility Management services
County of Racine	Racine	Mobility Management services
County of Rock	Rock	1-on-1 & Group Travel Training
County of Rusk	Rusk	Mobility Management services
County of Sawyer / Lac Courte Oreilles’s Transit Commission	Barron, Washburn, Sawyer	Mobility Management services
Door-Tran, Inc.	Door	Mobility Management services
Lutheran Social Services of Wisconsin & Upper Michigan, Inc.	Outagamie, Winnebago	Travel Training & Mobility Management
New Hope Center, Inc.	Calumet, Manitowoc	Mobility Management services
NEWCAP, Inc.	Marinette, Oconto	Mobility Management services
North Country Independent Living, Inc.	8 Counties in Northwestern Wisconsin	Mobility Management services
Southwest Wisconsin Community Action Program Inc.	Grant, Green, Iowa	Call-Center; Mobility Management

Wisconsin is a model in the nation for the widespread implementation of mobility management. Keys to success in Wisconsin include (WisDOT, 2015):

- Support and buy-in from the state
- Mobility management model not prescribed by the state but determined locally
- Emphasis on coordination
- State funding for specialized transportation and transit

- Mobility management infrastructure – Wisconsin Association of Mobility Managers (WAMM)

Mobility management in Wisconsin provides services such as conducting needs assessment, coordinating funding, services, or programs, developing inventory, identifying customer needs, travel training, trip planning, and so on. Community action programs, transportation providers or agencies, ADRCs/aging units, community disability and senior services and organizations, social and human service organizations or agencies, regional planning commissions, independent living centers, and the Veterans Administration (VA) are some of the organizations that provide mobility management services. Mobility Managers work under titles such as transit managers, transportation coordinators, resource specialists, administrative/clerical/transportation assistants, senior or disability benefit specialists, ADRC/Office on Aging supervisors or directors, and program coordinators. Successful mobility management techniques necessitate collaboration. Non-profits, individuals, private corporations, and government organizations are all potential partners. However, there also are substantial hurdles in the way of better mobility management. Inadequate financing, a lack of people resources, a lack of coordination and collaboration, service and jurisdictional boundaries, demographics, and information are some of the hurdles.

Educating communities about the capabilities of mobility managers may result in a larger mobility management network. The more people who learn about mobility managers, the more likely it is that they will desire one in their region. There are several instances of excellent mobility management methods throughout Wisconsin. Programs and organizations,

volunteers, coordination and teamwork, technology, marketing, and training and education are all examples of effective tactics.

Beneficial approaches to mobility management for older persons include a transportation solution professional who works directly with individuals, and websites that give narration tools for those who are unable to see or read and providing basic and clear information. Seniors and those with impairments may be more hesitant to step out on their own. Developing attachments to mobility managers might help them feel more at ease and can act as an individual's link to the outside world (WisDOT, 2015).

3.3.4 Other Mobility Programs for Older Adults

While WisDOT-managed programs play an important role in enhancing the mobility of Wisconsin's older adults' non-drivers, other state agencies also fund and operate vital programs to achieve this aim. Although older adults make up a small percentage of some of these programs, they all contribute to the network of mobility options available to Wisconsin's aging population.

Non-Emergency Medical Transportation

The Non-Emergency Medical Transportation Program (NEMT) is administered by the Wisconsin Department of Health Services (DHS), and it provides transportation for Medicaid recipients to and from non-emergency medical appointments that they would otherwise be unable to access, using either a common carrier (e.g., taxi service) or, when necessary, special medical vehicles (SMVs). While seniors make up only a tiny percentage of Medicaid recipients, they are likely overrepresented in terms of NEMT use since they may have diminished driving

capabilities and capacity to use public transportation and may require more medical transportation services than younger Medicaid recipients (Koffman et al., 2004; Yu et al., 2019).

Older Americans Act Transportation Support

In 1965, Congress passed the Older Americans Act, which provides a variety of supportive services to the older adults and their caregivers. Counseling, education, housing aid, employment, abuse prevention, and other supporting services are specified in Title III-B of the Legislation; the act also provides for funding transportation that facilitates access to other services or improves access to existing transportation services.

Medicaid Infrastructure Grants

The Ticket to Work and Work Incentives Improvement Act of 1999 included Medicaid Infrastructure Grants. The grants support state efforts to “develop the infrastructure to support competitive employment opportunities for people with disabilities” by enhancing the comprehensiveness of back-to-work programs, improving Medicaid programs, coordinating, and integrating Medicaid and other social service providers, and improving the coordination and integration of Medicaid and other social service providers.” Even though these initiatives do not expressly target older adults, their high rates of impairment show that they are beneficial to older workers.

Wisconsin Senior Employment Program

The Wisconsin Senior Employment Program (WISE), also known as the Senior Community Service Employment Program, is another program that aids older mobility (SCSEP). This employment training and placement program aims to place unemployed and low-income seniors (aged 55 and up, with a preference for those aged 65 and up) in unsubsidized jobs. Title V of the Older Americans Act funds the program, which is administered nationally by the United

States Department of Labor and locally by the Wisconsin Department of Health Services, which in turn funds non-profit organizations that provide part-time community service training and placement services.

Veterans Affairs Programs

Finally, the Wisconsin Department of Veterans Affairs funds two programs that help veterans of all ages maintain mobility. The County Transportation Grant offers funds to counties to help them provide transportation to medical appointments with the Veterans Administration. The Disabled American Veterans, a non-profit group, runs a fixed-route vanpool service between pre-determined places and medical facilities, which is run entirely by volunteers.

Nutrition Programs for Older Adults

The Elderly Nutrition Program by Wisconsin Department of Health Services (WDHS) provides delicious and healthy food to anybody older than 60 years of age (Wisconsin Department of Health Services, 2022). This program distributes meals to those who have difficulty getting around, and for those who are still able to venture out into their neighborhoods, this program serves at gathering places such as senior centers and community facilities. Friendly drivers offer excellent, home-style, newly cooked food delivered Monday through Friday. Persons receiving a meal say it helps them continue living in their home (ADRC, n.d.). The program is provided throughout Wisconsin's counties and tribal aging units/ADRCs. By facilitating doorstep meal deliveries, there is a potential reduction in the necessity for trips associated with grocery shopping and dining.

Meals on Wheels is a program that offers elders a nutritional meal, company, and constant monitoring of their health and safety. Anyone 60 or older who is essentially

homebound due to an illness or disability, or the spouse of a person eligible for Meals on Wheels as described above, regardless of age or condition, is eligible for this program if an assessment determines that it is in the best interests of the homebound older individual.

Apart from ADRC there are other departments that provide meals on wheels (Meals on Wheels America, n.d.). Goodwill, Wisconsin in their programs for adults and seniors, delivers wellness checks and nutritious meals to older adults (60 years or older) on routes throughout Milwaukee County (Goodwill Industries of Southeastern Wisconsin and Metropolitan, n.d.). SSM Health, a non-profit U.S. healthcare institution, delivers nutritional midday meals to the people of Madison, Middleton, Monona and Sun Prairie (SSM Health, n.d.).

3.3.5 Examples of Wisconsin Programs

Dane County TimeBank Transportation Project

This program's objective is to meet the community needs of inadequately served and low-resourced people in Madison, Wisconsin (*Transportation | Dane County TimeBank, n.d.*). TimeBanks operate in 35 countries, with over 500 members in the United States (*About Timebanking | Dane County TimeBank, n.d.-a*). People who join a time bank agree to participate in a system that involves earning and using "time credits." They will receive a one-time credit if they spend an hour on an activity that benefits others. When they require assistance from others, they can spend the time credits that they have accrued. In a simple way, "Timebank members are a caring and interconnected community of people who help each other by sharing their abilities, talents, and experiences" (*About Timebanking | Dane County TimeBank, n.d.-b*).

Dane County Transportation services and local providers fill gaps in transportation services for seniors. *“The Dane County Timebank is committed to facilitating exchanges and coordinating projects through a racial and restorative justice lens”* (About Timebanking | Dane County TimeBank, n.d.-b). This program’s values include everyone has something to contribute to the well-being of others in their community. It also fosters positive social relationships, respect for individuals, a mutually supportive social network and validation and rewards for others’ work.

The benefits of a system such as this include an active participation in community-related and member-organized projects, partnerships with other community groups, diversified funding streams, multicultural membership, and the impacts of social and system changes in specific areas of activity (*Dane County TimeBank 2019-2023 Strategic Framework, 2019*).

Lutheran Social Services - Make the Ride Happen

Make The Ride Happen is a program of Lutheran Social Services that serves and provides centralized transportation services to older adults and individuals with disabilities in Calumet, Outagamie, Winnebago and Waupaca counties of Wisconsin, also covering upper Michigan (Lutheran Social Services, n.d.). The aim of this program is “to make the ride happen for older adults, individuals with disabilities, and disadvantaged communities so they can remain active and involved in their communities” (Lutheran Social Services, n.d.).

Make The Ride Happen program assists seniors in getting to medical appointments, grocery stores, day programs, hair salons, banks, and pharmacies. It identifies the best transportation options such as public bus, paratransit, rural and meal site transportation, or volunteer driver programs. Transportation providers and services that are frequently used by riders who call Make the Ride Happen include (Lutheran Social Services, n.d.):

- Bus Buddy assistance for any older adult who would like a companion's help determining routes and getting comfortable riding the bus
- Valley Transit and Valley Transit II
- Rural Outagamie County Paratransit
- Calumet County Aging & Disability Resource Center volunteer drivers
- Dial-A-Ride in northern Winnebago County
- GO Transit
- Courtesy Shuttle-Outagamie County Housing Authority
- Helping Hands-Hortonville

Make the Ride Happen is a leader in mobility management explained above – a creative method to customized transportation services encompassing the elderly, disabled and low-income persons. Mobility management is focused on satisfying individual customer demands by providing a variety of transport alternatives and services and coordination of these services and suppliers to produce a more effective delivery system for transport services.

3.4 Wisconsin Transportation Outreach and Education for Older Adults

Transportation is among the most requested support services for seniors and individuals with disabilities. One of the most difficult and frightening decisions for seniors is the transition from driver to non-driver. Planning time might help to relieve some of this stress. Getting informed about availability and eligibility to new options is very important for planning ahead. Those drivers who live outside of urban areas face a unique set of challenges in getting around without driving. They have fewer options, such as using public transportation or walking to

nearby stores to get their household necessities. Ride share services can help keep one connected to family and friends. Staying social helps maintain quality of life as one ages (CDC, 2020).

Additional transportation options may be available to enable older adults to travel with independence and choice. Alternative Transportation Options include public transit (operates on a regular schedule and offers specific routes), specialized transportation or paratransit (a service for older adults and people with disabilities who are unable to use public transit), volunteer transportation (one-on-one rides in a volunteer's vehicle that can be reserved on demand), transportation with assistance (riders receive additional support at pick-up and destination), private-pay transportation (services such as taxis, Uber and Lyft that are available on demand). Among the different transportation options available, identifying the transportation assistance need is very important. For example, after a medical procedure, discussing with a physician or health care provider about the type of transportation one needs and how one's family or friends may be able to help with transportation needs can help to identify the transportation assistance that he/she needs.

Effective communication about transportation policies, eligibility and services is an important part of ensuring that older adults understand current guidelines and other transportation options. Furthermore, exchanging information is crucial in developing a uniform, comprehensive strategy to transportation challenges affecting older adults.

The Locally Developed Coordinated Public Transit – Human Services Transportation Plan 2019 – 2023 for Juneau County and Wisconsin Department of Transportation, is a good example of outreach programs that could be replicated in every county of Wisconsin. This plan

was prepared by the North Central Wisconsin Regional Planning Commission. The sole aim of this meeting was to have stakeholder involvement in the assessment of older adults and disabled transportation, and to provide strategies and goals to improve those transportation alternatives (NCWRPC, n.d.). The planning meeting was attended by approximately five transportation stakeholders and many more were invited, including representatives of public, private and non-profit transportation and human services providers and users, including seniors and individuals with disabilities. Through such meetings agencies will be able to identify gaps and needs in the existing planning and coordination.

3.5 Summary

Aging is an inevitable natural phenomenon. In the United States, the number of older adults in the next several decades is anticipated to rise substantially. Wisconsin, which follows a similar pattern, will have a higher rate of aging in rural areas and the greatest substantial demographic change is predicted in northern Wisconsin. Older individuals will face aging-related challenges as they age that could make them dependent on family or friends. One of these greatest challenges involves mobility and therefore the management of senior transportation is vital.

Wisconsin's generalized public transit programs provide a transportation system that unevenly provides services across the state. Numerous literature searches have revealed a lack of public transit, particularly in northern Wisconsin, where the aging population is projected to be greater. When addressing senior mobility concerns, it is necessary to consider older adults'

preferences to have access to secure, dependable, on-demand transportation choices for their travel needs.

Other than public transit programs, there are several other mobility programs for older adults in Wisconsin. These programs aim mainly to address the mobility needs of older adults and the population with disabilities. Some of these programs, for example, volunteer driver programs, can be found in most of the counties. Although the initiatives run by WisDOT play a key role in increasing Wisconsin's mobility of seniors, other government agencies are also funding and implementing essential programs to attain this objective. Proper planning, outreach and education strategies will bring all these programs to their full potential and can meet older adult's mobility needs.

Chapter 4 Methodology of Statewide Survey on Older Adults' Transportation Needs in Suburban and Rural Areas

Within the extensive body of literature addressing older adults' travel patterns and needs, suburban and rural areas have often been overlooked. Addressing the research gaps identified in Chapter 2, this chapter introduces a hybrid survey methodology to explore older adults' transportation needs in these areas. This approach considers both the perspectives of older adults and transportation agencies, employing a mix of online and mailed questionnaires along with focus group sessions. Subsequent sections discuss the survey design, sampling strategies, questionnaire distribution and collection procedures, focus group organization, and methods of data analysis.

4.1 Survey Overview

4.1.1 Considerations Addressing Research Gaps

As revealed in Chapter 2, there are substantial research gaps in understanding the transportation needs of older adults residing in suburban and rural environments. To address these lacunae and ensure a comprehensive analysis, this study has laid out several targeted considerations corresponding to each identified gap.

Gap 1: Under-emphasis on Suburban and Rural Areas.

Consideration: Design surveys specifically tailored to suburban and rural demographics to gain insights into their unique transportation challenges and preferences.

Gap 2: Neglect of Alternative Transportation Modes.

Consideration: Incorporate an all-encompassing approach to transportation by emphasizing alternative transportation modes, considering the significant role they play for older adults, especially those facing health or financial constraints.

Gap 3: Limited Incorporation of Older Adults' Perspectives.

Consideration: Employ a mixed-method approach—leveraging questionnaire surveys for quantitative insights and organizing focus group discussions for in-depth qualitative understanding—ensuring the capture of the nuanced needs and preferences of the older population.

Gap 4: Absence of Diverse Perspectives.

Consideration: Broaden the survey's scope to encapsulate not just the views of older adults but also those of transportation service providers, ensuring a well-rounded perspective on the transportation ecosystem.

Gap 5: Inadequate Emphasis on Stakeholder Collaboration.

Consideration: To gain insights into the reasons behind specific travel patterns, incorporate questions on travel purpose within the questionnaire. Further, during focus group discussions, explore the potential of inter-agency collaborations and their impact on enhancing transportation services for older adults.

Gap 6: Under-exploration of Technological Solutions.

Consideration: To gauge the digital readiness of the older demographic, include questions about their familiarity with, access to, and frequency of usage of current transportation technologies within the questionnaire.

Gap 7: Limited research on COVID-19 impacts.

Consideration: To ascertain the pandemic's impact on transportation habits, introduce questions that compare travel patterns before and during the COVID-19 outbreak, illuminating any significant shifts or challenges faced.

Gap 8: Scant Research on Tribal Settings.

Consideration: Ensure inclusivity by incorporating the voices of older adults residing in tribal areas and seeking input from tribal transit service providers, addressing the dearth of research in this sector.

In synthesizing the above considerations, this study aims to bridge the current research gaps and present a more holistic view of the transportation needs of older adults in suburban and rural settings. By adopting this multifaceted approach, we hope to drive the development of effective and inclusive transportation solutions that cater to this demographic's diverse needs.

4.2 Survey Design

4.2.1 Questionnaires

To adequately address the research gaps pertaining to transportation needs of older adults in suburban and rural areas, two distinct questionnaires were conceptualized: one tailored for older adults and another for transportation service providers. Both versions have a blend of universal questions and others honed to the specific demographics of the respondents. A detailed breakdown of questions by category can be found in Table 4.1.

Table 4.1: Example Questions in Two Versions of Questionnaire

Categories	Example Questions
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	For older adults	For service providers
Socio-demographics	Age, Gender, Race, Income, Employment, Residence type (e.g., home, independent living facility) and location (Zip Code), Household size	N/A
Availability of transportation options	N/A	Type of transportation service(s) provided
Trip purpose and frequency*	Frequency of each trip purpose, Frequency of each travel mode (e.g., driving a vehicle, riding a bus, using a volunteer driver program) before and after COVID-19 outbreak	Estimated percentage of each trip purpose using the service they provide, Ridership and service changes before and after COVID-19 outbreak
Transportation needs and barriers	Important features of transportation service, Problems with transportation services, Reasons for stopping using transportation, Use of mobility device, Open-ended service improvement suggestions	Important features of transportation service (from clients' perspective), Problems experienced in providing transportation, Observed health concerns of clients, Future service improvement plan, Open suggestions on services improvement and coordination
Attitude toward transportation service	General satisfaction with local transportation services	Perceived Clients' satisfaction with local transportation services
Travel information and technology adoption	Source to obtain transportation information, Availability of Internet, Usage of Internet (difficulty, frequency, device, application, etc.)	Method of service booking, Advance time of booking service, Software used for scheduling, Information release channels (e.g., newsletter, website, social media)

Notes: N/A = Not Applicable; * This question reveals the impacts of COVID-19 by separately asking the same question for before and during COVID-19.

These questionnaires underwent multiple revisions, benefitting from feedback provided by our advisory panel. Concurrently, they were submitted for evaluation and authorization by the university's Institutional Review Board (IRB) to ensure adherence to ethical guidelines

concerning human subjects. A pilot phase was instituted to assess comprehensibility and rectify any potential ambiguities or errors. With invaluable guidance from our advisory panel, each version of the questionnaire was tested on representative samples, ensuring a mix of ages, genders, geographical locales, transportation habits, and service types.

Anticipating the digital challenges older adults in rural settings might encounter, two formats of the older adult questionnaire were designed: a traditional printed version and a digital one, accessible through the web-based tool, Qualtrics. Recognizing the tech-savviness of transportation service providers, they were exclusively provided access to the online survey.

Feedback from the pilot underscored the preferences of older adult respondents for more prominent fonts, ample spacing, and brevity. In response, the printed version was revamped to be visually engaging and user-centric, using Qualtrics' interface design capabilities. Visual aids, such as images, were strategically placed to bolster attention. Drawing from past surveys and Qualtrics' insights, we capped the questionnaire completion time between 10 to 15 minutes. The finalized versions of these questionnaires can be found in Appendices A and B.

4.2.2 Focus Group Meetings

Focus groups, as an exploratory tool, furnish deeper insights than conventional questionnaires. They illuminate the rationale behind participants' thoughts, catalyzing enhancements in services. Post questionnaire, respondents were invited to participate in focus groups. Screening criteria rooted in questionnaire results were instituted, ensuring diversified participation and comprehensive feedback on ways to improve transportation services.

Six focus groups were convened—three each for older adults and service providers—to unearth varied perspectives. A structured interview guide was curated for each group,

encompassing an introduction, a question session with 4-5 open-ended, neutral queries transitioning from generic to intricate, and a concluding segment. Table 4.2 delineates the core themes and example questions.

Table 4.2: Example Questions in Two Versions of Focus Group Design

Focus Topic	Example Questions	
	For older adults	For service providers
Attitude toward transportation service	<ul style="list-style-type: none"> • What kind of problem would make you stop using a transportation service? • Do you have experience with this? Is there a story behind that? • Has anyone had problems finding services with ADA-compliant vehicles? • What improvements do you want to see in transportation services? What would excellent transportation service look like? 	<ul style="list-style-type: none"> • How do you think older adults' attitudes about transportation services influence their use of the services? • Do older adults stop using local transportation services, or use them less, if they are not satisfied? • What misunderstanding/misconception do older adults have about your transportation services? • What would improve older adults' attitude toward transportation services?
Travel information and technology adoption	<ul style="list-style-type: none"> • When you have travel needs, what kind of information do you look for? • When it comes to using an electronic device and the internet to arrange travel, what are the helpful things and what are the problems? • What features of a comprehensive real-time travel information system would be most helpful? 	<ul style="list-style-type: none"> • How do technological issues play into the barriers you and your passengers face? • What would you like to see in the new information systems or tools to facilitate your daily work and travel by your clients? • What features of a comprehensive real-time travel information system would be most helpful?
Home-bound status	<ul style="list-style-type: none"> • What circumstances may cause you to stay home for a period of time? • How much of a factor are 	N/A

	transportation services in determining what you can do? • What would an excellent transportation service look like for you? • How would an ideal transportation service benefit you?	
Cooperation and Coordination	N/A	• What do you see as the top advantages to coordinating services between multiple agencies and programs? • What would excellent collaboration look like? • What barriers get in the way of coordination and cooperation between agencies and programs? • At what level would coordination be ideal? State, region, county or other?

Note: N/A = Not Applicable.

For clarity and unbiased communication, these questions underwent scrutiny by non-transportation experts, ensuring comprehensibility and neutrality. Each group consisted of 5-8 individuals to foster an open dialogue.

To holistically capture the transportation milieu of older adults in suburban and rural settings, this research integrates quantitative survey tools with qualitative focus groups. While surveys offer empirical insights into travel habits and levels of contentment, focus groups enrich these findings with experiential anecdotes. This comprehensive approach promises robust, multi-faceted data, serving as a springboard for crafting efficient transportation frameworks catering to these locations.

4.3 Sampling

4.3.1 Target Population

Central to this study are older adults (65 years and above) from suburban and rural Wisconsin. By zeroing in on non-urban populations, the research aims to decipher unique transportation challenges endemic to these locales. Given the stark contrast between urban and non-urban transportation landscapes, the focus on the latter is paramount. The study aligns with the regional divisions posited by the Division of Transportation System Development (DTSD) under WisDOT, as illustrated in Figure 4.2. For a granular understanding of each region, refer to Table 4.3, which draws from the official WisDOT website.

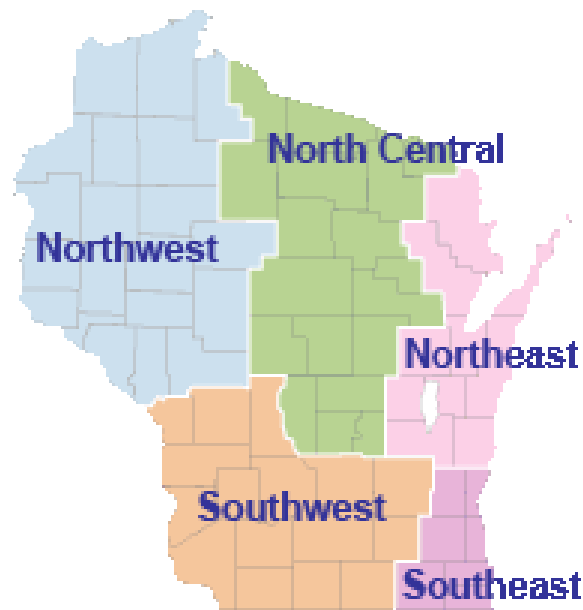


Figure 4.2: WisDOT DTSD Regions.

Table 4.3: Counties by WisDOT DTSD Regions

Region	North Central	Northeast	Northwest	Southeast	Southwest
Counties	Adams, Florence, Forest, Green	Brown, Calumet, Door, Fond	Ashland, Barron, Bayfield,	Kenosha, Milwaukee, Ozaukee,	Columbia, Crawford, Dane, Dodge, Grant,

	Lake, Iron, Langlade, Lincoln, Marathon, Marquette, Menominee, Oneida, Portage, Price, Shawano, Vilas, Waupaca, Waushara, Wood	du Lac, Kewaunee, Manitowoc, Marinette, Oconto, Outagamie, Sheboygan, Winnebago	Buffalo, Burnett, Chippewa, Clark, Douglas, Dunn, Eau Claire, Jackson, Pepin, Pierce, Polk, Rusk, Sawyer, St. Croix, Taylor, Trempealeau, Washburn	Racine, Walworth, Washington, Waukesha	Green, Iowa, Jefferson, Juneau, La Crosse, Lafayette, Monroe, Richland, Rock, Sauk, Vernon
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Urban locales with regular transit services were intentionally excluded from the study's purview, as detailed in Table 4.4. Using data from the 2019 American Community Survey 5-Year Estimates, a demographic analysis of the aging population was undertaken, shedding light on age and gender metrics across regions. Table 4.5 offers a visualization of this data, which will subsequently assist in ascertaining the representativeness of our sample sets.

Table 4.4: Areas to be Excluded in This Study

Region	Excluded urban areas with regular fixed-route bus service
North Central	Wausau
Northeast	Green Bay, Appleton, Oshkosh, Fond du Lac, Sheboygan
Northwest	Eau Claire, Superior
Southeast	Milwaukee (county), Waukesha, Racine, Kenosha
Southwest	La Crosse, Madison, Janesville, Beloit

Table 4.5: Aging Population by WisDOT DTSD Regions

Region	Aging Population	Population by age			Population by gender	
		65-74	75-84	85 +	Male	Female
North Central	115,527	65,564	35,390	14,573	54,812	60,715
Northeast	133,675	78,251	39,720	15,704	61,702	71,973

Northwest	110,110	64,700	32,516	12,894	52,805	57,305
Southeast	207,396	117,697	60,629	29,070	92,719	114,677
Southwest	162,914	95,940	45,873	21,101	75,501	87,413
Total	729,622	422,152	214,128	93,342	337,539	392,083

4.3.2 Sampling Techniques

Embracing the regional divisions set by WisDOT DTSD, stratified sampling was the chosen technique, dictating the distribution of questionnaires across regions. Stratified sampling is an approach where the population is divided into smaller groups, or "strata," based on shared characteristics. In this study, the regions act as the strata. By ensuring representation from each stratum, this method offers a more accurate and comprehensive insight into the broader population.

To enrich this stratified approach, purposive sampling was adopted, facilitating the intentional inclusion of individuals who encapsulate specific experiences or perspectives germane to the study. This might encompass those with mobility constraints, residents of isolated terrains, or those with limited transportation alternatives. Through purposive sampling, their voices, often marginalized, are brought to the fore.

4.3.3 Sampling Procedure

Questionnaire Sampling

Our primary survey respondents comprise older adults aged 65 and over residing in Wisconsin areas not served by routine fixed-route transit systems. Specifically, the sample has been further limited by the concentration of people who need transportation assistance in their daily life, such as patrons of local transit services or meal delivery services such as "meals on wheels." These individuals, owing to their firsthand experiences with community transportation services, offer invaluable insights. Table 4.6 displays the projected sample distribution for each

of the five WisDOT regions, utilizing a proportionate stratified sampling paradigm, and consciously omitting urban areas with regular fixed-route transit as indicated in Table 4.4.

Table 4.6: Stratified Sampling Design for Older Adults

Region	Older Adults Population		Proportionate Stratified Sample	
	Frequency	Percent (%)	Frequency	Percent (%)
North Central	115,527	15.9	238	15.9
Northeast	133,675	18.3	275	18.3
Northwest	110,110	15.1	226	15.1
Southeast	207,396	28.4	426	28.4
Southwest	162,914	22.3	335	22.3
Total	729,622	100.0	1,500	100.0

For the transportation service sector, our focus was on transit service providers (e.g., transit managers or drivers) and mobility managers in suburban and rural Wisconsin areas without standard fixed route bus provisions. Comprehensive invitations were extended to all transportation service professionals, mobility managers, and tribal transportation coordinators, sourced from contact directories courtesy of WisDOT.

Focus Group Sampling

Post questionnaire, a select cohort, inclusive of older adults, caregivers/family members, transit service professionals, and mobility managers, was invited for the focus group discussions, maintaining a size of 8-10 participants per group. The initial survey respondents were prompted to express interest in these focus group sessions. The distinct criteria applied for focus group participant selection are captured in Table 4.7. In curating these groups, a deliberate attempt was made to assemble individuals with analogous backgrounds to encourage a free flow of conversation, spurred by potentially shared experiences.

Table 4.7: Focus Group Criteria

a) Older Adults and Caregivers					
Category	Group No.	Frequency of using transportation services	Internet Access	Health Status	Group size (# of people)
Older Adults and Caregivers	1	High	Yes	Good/Poor	6
	2	Low	Yes	Good/Poor	6
	3	Low	No	Good/Poor	4
Total					16
b) Service Providers and Mobility Managers					
Category	Group No.	Interested Topic			Group size (# of people)
Service Providers and Mobility Managers	1	Technology Usage			8
	2	Service Coordination			7
	3	Users' Satisfaction (A mix of perceived satisfied and unsatisfied)			7
Total					22

The essence of this research focuses on understanding the transportation dynamics of older adults, specifically those aged 65 and above in suburban and rural terrains. Our sampling strategy melds probability sampling with purposive sampling. While the former promises a comprehensive representation of the broader demographic, the latter facilitates the pinpointed inclusion of specialized sub-groups. Through these meticulously chosen sampling methods, the study aspires to decipher and address the unique transportation intricacies faced by older adults in non-metropolitan settings, laying the foundation for crafting age-accommodative transit solutions.

4.4 Questionnaire Distribution and Meeting Arrangement

4.4.1 Questionnaire Distribution and Collection

Prior to distributing the older adult survey, we obtained two statewide contact lists— one is the contact list of Wisconsin aging network that consists of staff from County/Tribal Aging and Disability Resource Centers (ADRCs), and the other is the contact list of Wisconsin rural and specialized transit mobility service providers using the Federal Formula Transit Grant Program for Rural Areas (also called “Section 5311”) and the Enhanced Mobility of Seniors and Individuals with Disabilities Program (also called “Section 5310”). The survey coordinator solicited older adult survey participation from county/tribal ADRCs and rural/specialized service providers and confirmed requests for the number of paper copies of the older adult survey through phone conversation. After communication, 78 programs serving 71 counties and 9 tribes confirmed their participation, with a total of 8775 paper copies of the older adult survey requested.

The survey was sent along with the survey distribution instructions to the confirmed aging network and local transit/mobility service providers between March 1st, 2021 to April 15th, 2021 in both printed format and online. Once older adults completed the printed survey, we asked them to return it promptly using an enclosed postage paid reply by: i) mailing it directly, ii) dropping it off at county ADRCs, or iii) giving it to the meal service or transportation service driver. For the online version of the survey, we e-mailed the survey links (i.e., a website hosted by Qualtrics Survey Software) to the directors of ADRCs and managers of transit systems/mobility management programs. The survey links were shared by their staff through i) local services-owned social media (e.g., Facebook, Twitter); ii) local newspapers; and/or iii)

email lists of those subscribed for local services. Those who selected online survey could submit their responses online directly and skip the printed survey. A unique identifier on each physical copy of the survey and the embedded location function in the online survey software allowed us to track response rate at each county and tribal nation across the state.

Meanwhile, the transportation service provider questionnaire survey was distributed online from March 1st, 2021 to March 30th, 2021. The survey pool included: i) The Federal Formula Transit Grant Program for Rural Areas recipients (“Section 5311”); ii) The Enhanced Mobility of Seniors and Individuals with Disabilities Program recipients (“Section 5310”); iii) The Tribal Elderly Transportation Assistance Program; and iv) The Wisconsin Mobility Management Program. This pool covered a diverse range of transportation services, from fixed-route transit (e.g., county transit, tribe transit) to demand responsive ones (e.g., shared ride taxi, private taxi, volunteer driver program, county ADRC transportation). In addition, through advanced functions in Qualtrics, we have automatically divided service providers into different sets according to the type of services for later cross tabulation analysis.

4.4.2 Focus Group Interviews

Because of the safety concerns during the COVID-19 pandemic and potential technology barriers, we identified the most appropriate method to conduct focus group interviews for both older adults and service providers.

Based on our communication with potential focus group participants prior to focus group interviews, an online meeting platform (e.g., Microsoft Teams, Zoom) seems to work well for service providers. Older adults survey respondents included many who described themselves as being hesitant to use such a platform to communicate or residing in locales

without reliable high speed internet connections. Instead, they are more familiar with telephone interviews. Fortunately, we could use the dial-out function embedded in Microsoft Teams to fit into older adults' preferred communication method (i.e., by answering an expected phone call) and also facilitate smooth group communication and meeting recording.

Different communication methods have been adopted to schedule and arrange focus group meetings for older adults and service providers. The survey coordinator made a series of individual calls for the targeted older adult participants, i.e., 1st call – check availability, 2nd call – confirm meeting time, and 3rd call – remind meeting time one day before. On the other hand, for service provider participants, emails and an online scheduling service (i.e., Doodle) were used to set up meeting schedules, send online meeting invitation and reminders.

Focus group surveys were conducted in April – June in 2021. At the appointed session time of each group meeting, the survey coordinator greeted participants as they answered their phones and asked them to wait as others joined. Once everybody joined the meeting, the meeting moderator started to provide information about the study and obtained consent from the participants using an informed consent form that IRB has approved. Ground rules emphasizing the goal of hearing many perspectives were also shared. The virtual format required the facilitator to call on participants by name and this naturally prepared each individual to join in discussing experiences and views. Participants in the focus groups were asked similar questions, but the moderator had the latitude to ask adjusted or further questions based on the answers to explore individual preferences and perceptions more deeply. Field notes as well as recording devices were used in collecting focus group data. For

their participation in the focus group, each older adult participant was compensated with a \$20 stipend. Service provider participants were not provided with any stipend.

4.5 Data Analysis and Interpretation

4.5.1 Quantitative Data Analysis

The quantitative information harvested from the surveys and questionnaires will undergo descriptive statistical analysis to illuminate the travel tendencies and preferences of older adults. Key variables, such as travel frequency, transportation method choice, and satisfaction levels with existing transit services, will be articulated through measures such as means, standard deviations, and percentages. This analysis will facilitate a nuanced quantitative representation of senior transportation trends in suburban and rural terrains.

Furthermore, inferential statistics will probe into potential relationships and linkages between various variables. A correlation analysis might be initiated, for instance, to determine any association between the transportation mode chosen by older adults and determinants like age, income, or proximity to public transit. Methods such as t-tests or ANOVA might discern any variations in transit patterns across distinct demographic brackets or geographic boundaries.

For a visually engaging representation, we'll resort to graphical tools like bar charts, histograms, and pie charts, which simplify the data, making it easily digestible and facilitating trend identification.

4.5.2 Qualitative Data Analysis

Data from focus groups will be processed through a thematic analysis lens. This involves meticulously coding the transcribed data to pinpoint persistent themes, casting light on the

transportation narratives of older adults, be it the challenges they face, their preferences, or the role of transit in their social lives. This qualitative insight will be juxtaposed against quantitative data, enriching the depth of understanding about the transportation needs of the elderly.

4.5.3 Interpretation of Findings

Interpreting the results will meld insights from both quantitative and qualitative analyses. The quantitative insights might, for instance, underline a preference among rural older adults for personal vehicles due to scarce public transit. On the other hand, the qualitative findings might shed light on the significance of accessible transportation modes for the mobility-challenged elderly in suburban locales.

The discussion will weave these insights together, underscoring their implications for regional transit planning and policy frameworks. Emphasis will be laid on tailoring interventions that cater to the specific transit needs of the elderly in non-metropolitan areas, promoting accessibility and independent living.

4.6 Summary

In the efforts to explore the transportation preferences of older adults in suburban and rural regions, this research marries quantitative analysis with qualitative focus group discussions. The combination of empirical survey data and firsthand accounts promises to offer a comprehensive overview of travel patterns and experiences. Through this nuanced approach, the study seeks to direct the evolution of transportation solutions tailored to the unique needs of this demographic in non-urban environments. Moreover, our sampling strategy intricately

weaves together probability sampling, which captures a broad representation of this demographic, with purposive sampling, targeting specific sub-groups. By navigating these dual methodologies, the research illuminates the distinctive challenges older adults confront in suburban and rural landscapes, propelling the design of transit systems that are sensitive to aging populations.

Chapter 5 Questionnaire Survey Results: Older Adults

Out of 8775 questionnaire hard copies distributed, 1571 were returned (17.5%). In addition, 79 online responses were received for a total of 1650. To ensure accurate agency matching for the returned surveys, a Registration Number unique to each survey copy was used. Efforts were made to record the agency to which the Registration Number was initially sent, allowing for proper matching. In cases where the Registration Number was torn off or not applicable, the agency was estimated based on the zip code provided in the survey. This led to the total 1587 mapped number for older adults' responses by county (1537 from 65 counties) and tribe (50 from 5 tribes). This is 96% of the total responses because 63 could not be geocoded due to lack of information (e.g., ZIP code). Figure 5.1 shows the result of this mapping process. Colors in white on the map are excluded areas. It should be noted that Menominee is both a county and a tribe. The five responses were counted towards the county, and the seven counties without a matched response – Juneau, Manitowoc, Marquette, Milwaukee, Richland, Sawyer, and Waukesha – were not part of the coverage area.

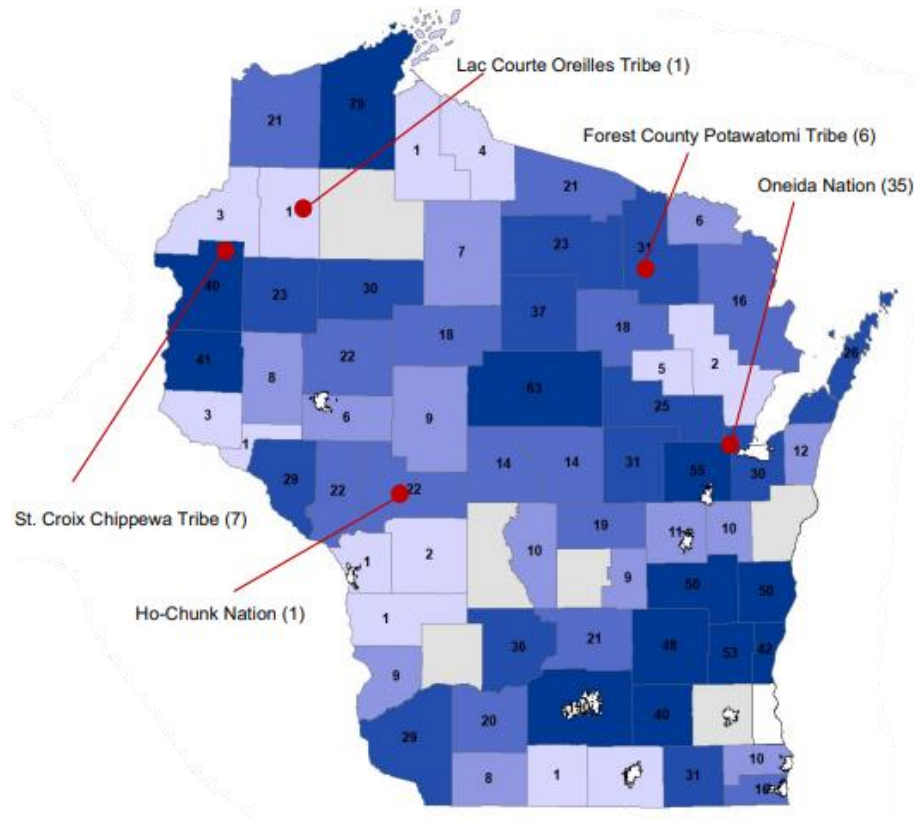


Figure 5.1: Geolocations of older adult survey respondents.

The sample rate by WisDOT Division of Transportation (DTSD) region was then calculated, which can be seen in Table 5.1. Please note that in Table 5.1, the aging population is defined as adults who are at least 60 years old. However, during the survey design phase, the term "older adults" was defined as adults who are at least 65 years old, as indicated in Table 4.6, which was used to determine the number of survey copies to be sent out. It is worth mentioning that while 65 years old was typically used as a criterion for older adults, in certain areas, the age of 60 years old is commonly recognized as the qualifying age for specialized services targeting older adults.

Table 5.1: Sample Rate by WisDOT DTSD Region (Matched Copies)

Region	Population Aged 60+	# of Responses	Sample Rate (in 1/1000)
North Central	168,655	343	2

Northeast	208,827	297	1.4
Northwest	161,439	388	2.4
Southeast	214,858	152	0.7
Southwest	237,087	407	1.7
Total	990,866	1587	1.6

Note: Populations Aged 60+ are calculated from 2015-2019 American Census Survey 5-year estimate data, excluding urban areas specified in Table 4.5.

The analysis on the return survey results for older adults can be classified into two major themes with several sub-themes in each: 1) socio-demographic characteristics (i.e., gender, age, annual household income, race, employment status, number of people living with, type of residence, and use of mobility device), and 2) survey topics (i.e., information technology usage, travel pattern, satisfaction with local transportation services, travel challenges and limitations, and suggestions for improvement). The rest of the subsections for older adults' survey results first present the socio-demographic characteristics of the respondents, and then provide the analysis of each survey topic.

5.1 Socio-demographic Characteristics

As one of the important portions of the survey questionnaire, respondents were asked about their socio-demographic characteristics, including:

- Gender
- Age
- Annual Household Income

- Race
- Employment Status
- Number of People Living With
- Type of Residence
- Use of Mobility Device

Ninety percent (1485 out of 1650 respondents) provided information regarding gender, with 995 females and 490 males. Ninety-one percent (1501 out of 1650 respondents) shared their age information. In terms of annual household income, 1362 respondents (83%) responded to this question, among which 272 preferred not to answer. As shown in Figure 5.2 to Figure 5.4, the survey respondents are compared with suburban and rural Wisconsin's older adult population, which are calculated from 2015-2019 American Census Survey 5-Year Estimate Data for selected areas only. Older adults aged 60+ are considered for gender and age group; households with householder aged 65+ are used for household income because of data availability.

The gender distribution reveals a significant over-representation of females in the sample compared with census data. This is consistent with previous research findings indicating that individuals aged 70 years and above, particularly women, exceed their driving life expectancy by 11 years, while men exceed it by 6 years (Foley et al., 2002b). Consequently, it is reasonable to expect that older women would show greater interest in senior transportation services. Indeed, a closer examination of the detailed survey responses indicates that female respondents are more inclined to provide specific comments and suggestions in the open-ended questions. Additionally, the proportion of individuals aged 75 and older in the sample is

notably higher than in the census data. Meanwhile, households with earnings below \$25,000 are disproportionately represented in the sample. These findings are consistent with expectations, as our survey aims to capture the perspectives of rural senior residents who require assistance with transportation.

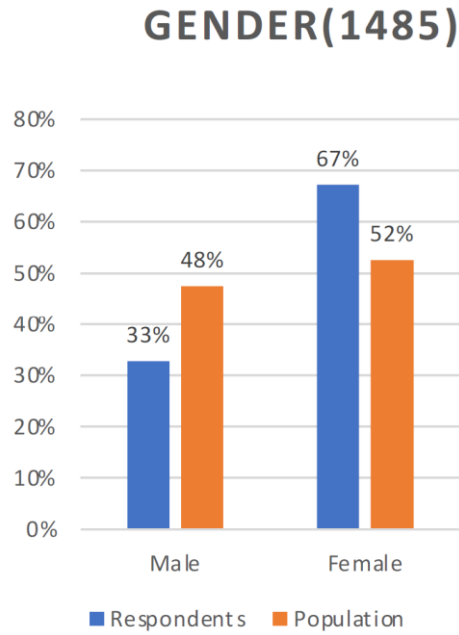


Figure 5.2: Gender of older adult respondents comparing with Census data.

Note: Populations Aged 60+ are calculated from 2015-2019 American Census Survey 5-year Estimate Data, excluding urban areas specified in Table 4.5.

AGE(1501)

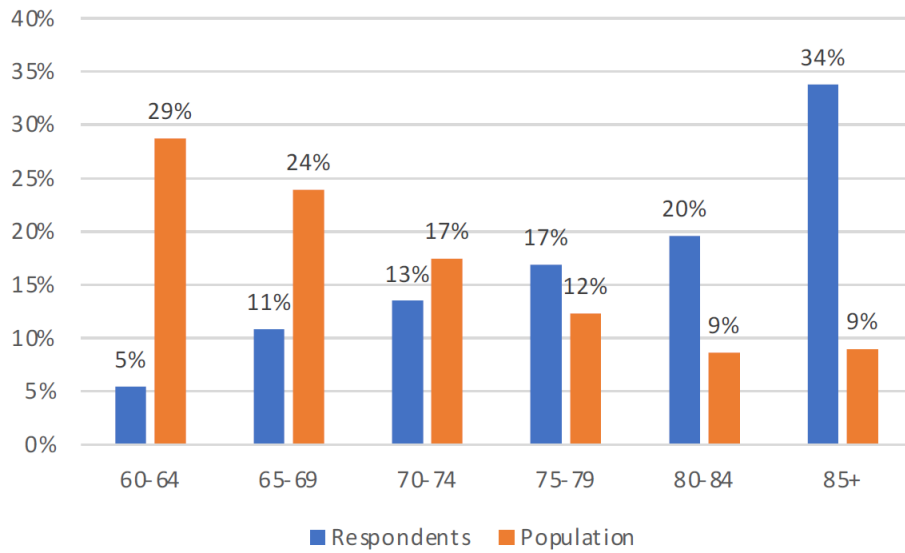


Figure 5.3: Age of older adult respondents comparing with Census data.

Note: Populations Aged 60+ are calculated from 2015-2019 American Census Survey 5-year Estimate Data, excluding urban areas specified in Table 4.5.

ANNUAL HOUSEHOLD INCOME (1362)

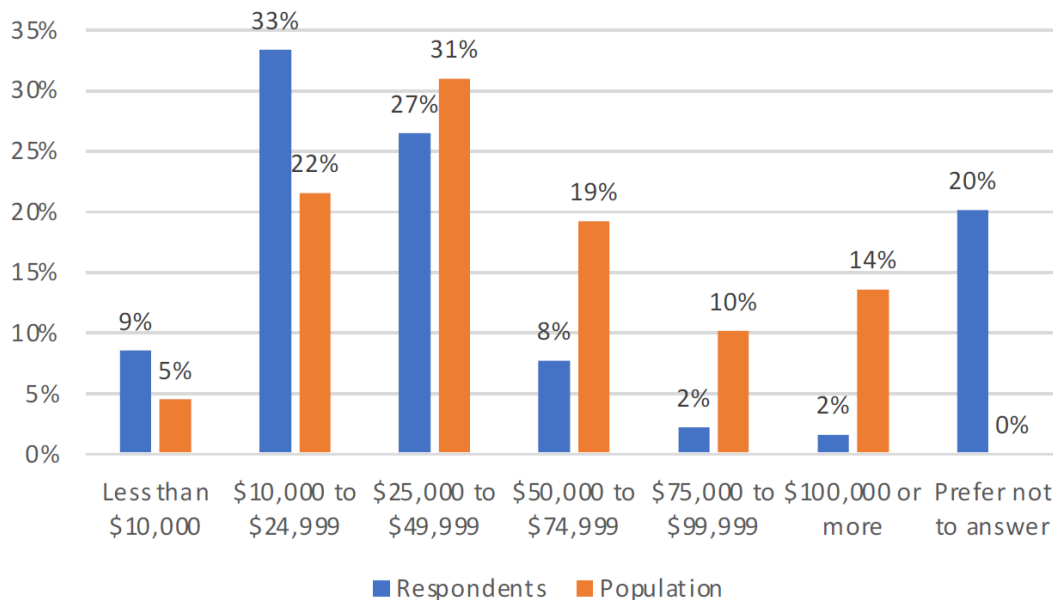


Figure 5.4: Annual income of older adult respondents comparing with Census data.

Note: households with householder aged 65+ are used from 2015-2019 American Census Survey 5-year Estimate Data, excluding urban areas specified in Table 4.5.

Data on race were collected from 1446 respondents, revealing that 98% of them identified as white, while a small portion identified as Native American (Figure 5.5). This distribution is in line with expectations for suburban and rural areas. In terms of employment status, the majority of older adult respondents (89%) reported being retired, as illustrated in Figure 5.6, which aligns with their age demographics. Only 5% of the respondents are engaged in full-time or part-time work. The category labeled as "Others" encompasses self-specified employment statuses such as disability, volunteer work, or being too old to work. Additionally, respondents were asked about the number of individuals living with them, resulting in a 90% response rate (1485 out of 1650). The findings from this question are presented in Figure 5.7, indicating that most respondents reported living alone or with one other person.

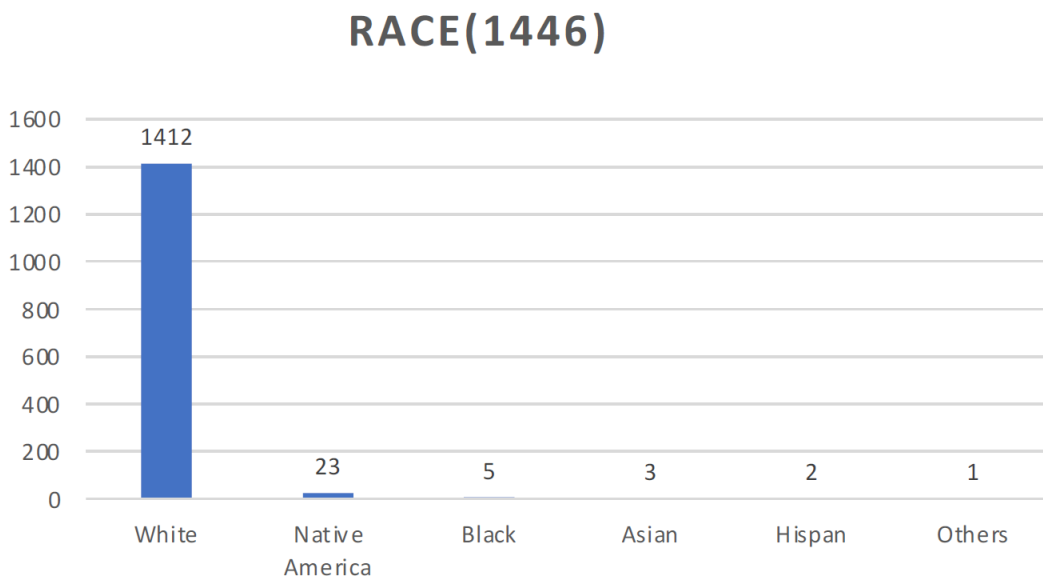


Figure 5.5: Race of older adult respondents.

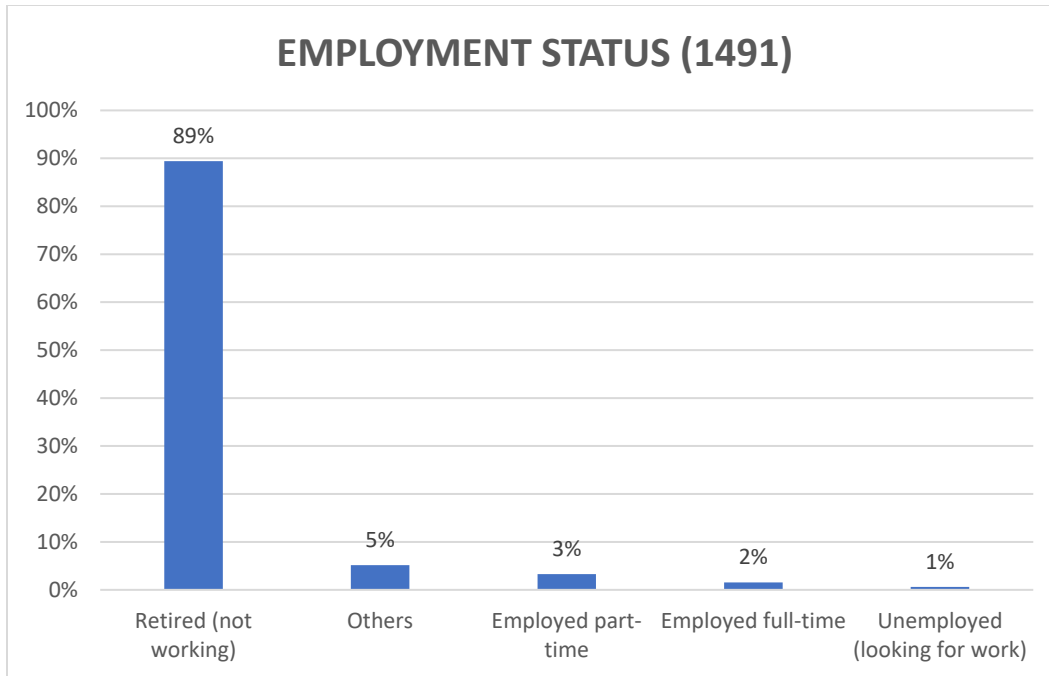


Figure 5.6: Employment status of older adult respondents.

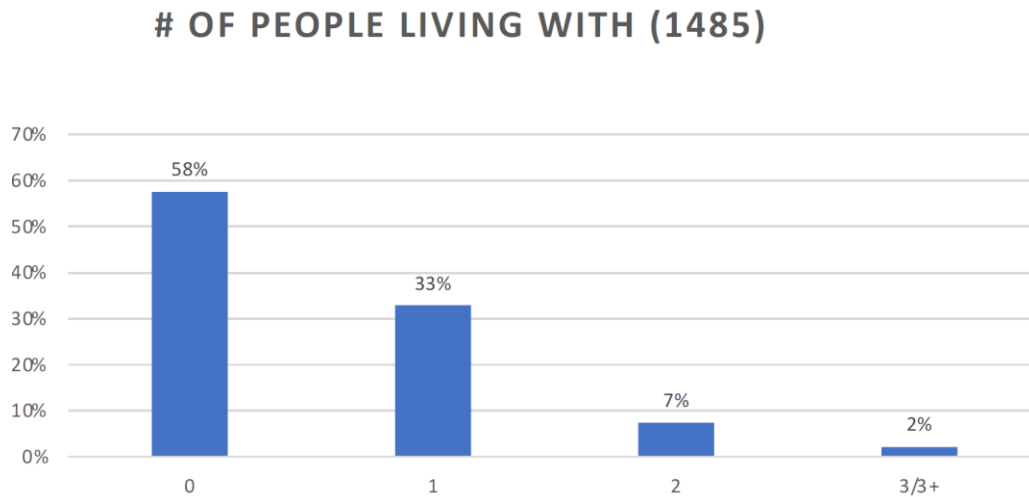


Figure 5.7: Number of people living with older adult respondents.

For the type of residence by respondents, 1529 out of 1650 older adults responded (93%) and results are illustrated in Figure 5.8. Most of the respondents reported living in a home they own, with 59% of the total. Though 3% of the respondents selected “Other (please

specify),” the detailed analysis shows that there might be some confusion (overlap) with other predefined options.

Last, the usage and the type of mobility devices by respondents were also surveyed in the questionnaire. Ninety-three percent (1531 out of 1650 respondents) provided their answers and 798 out of these 1531 reported using personal mobility devices, which shows that walker (471 respondents), cane (375 respondents), and wheelchair (168 respondents) are the most used personal mobility devices, displayed in Figure 5.9. This also indicates more than half of the responding older adults experience physical difficulties in mobility in Wisconsin.

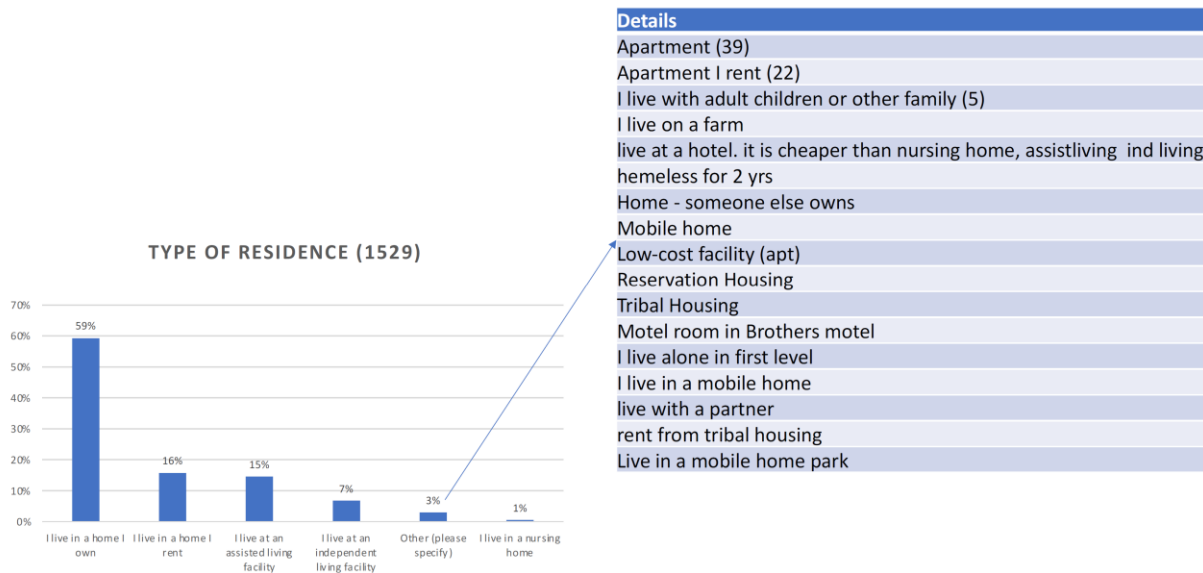
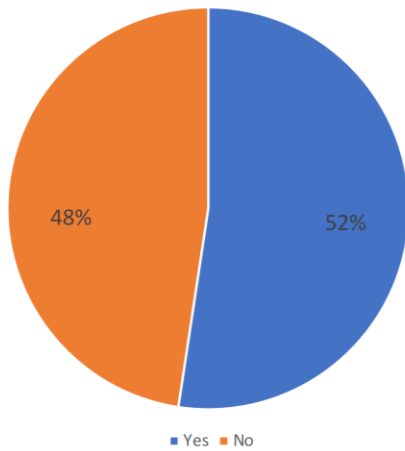


Figure 5.8: Types of residence of older adult respondents.

USE OF MOBILITY DEVICE (1531)



TYPE OF MOBILITY DEVICE (798)

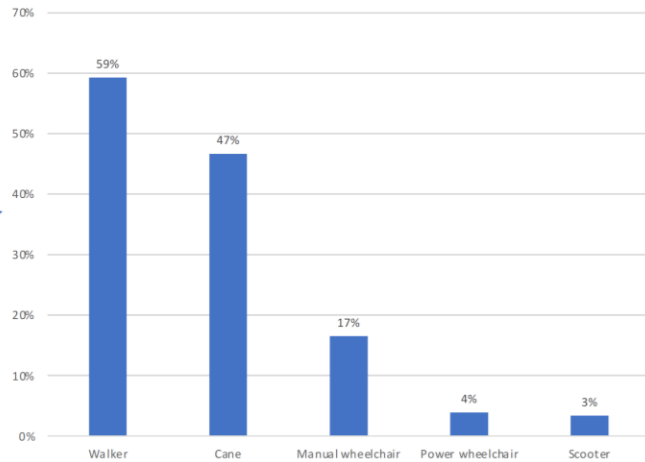


Figure 5.9: Usage and type of mobility devices by older adult respondents.

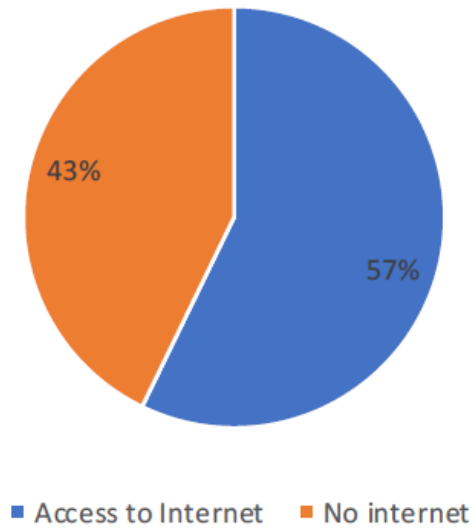
5.2 Survey Topic: Information Technology Usage

As mentioned previously, technology has played a pivotal role in transforming transportation services, particularly in catering to the needs of older adults. It has enabled the development of innovative solutions that enhance accessibility and convenience. One notable advancement is the provision of real-time notifications, which allow older adults to stay informed about the estimated arrival or departure times of transit and paratransit services. This feature greatly aids in planning their journeys and reduces uncertainties. Thus, the first survey topic was given with a series of questions to inquire about the information technology usage by older adults.

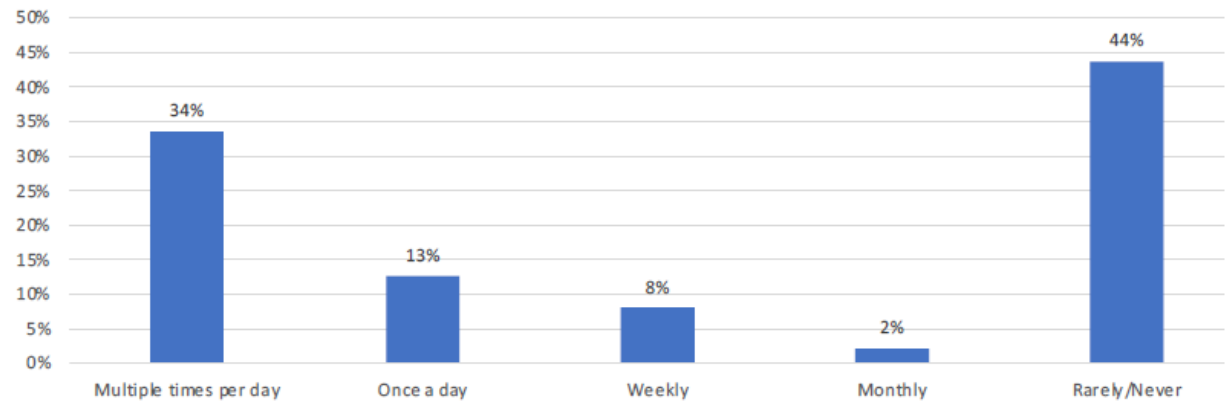
The usage of internet services was first surveyed, whose results can be found in Figure 5.10. Nearly half of the responding older adults (43%, 687 out of 1598 respondents) do not have internet access, while a similar percentage (44%, 625 out of 1421 respondents) was asked about the frequency of internet usage. The respondents also shared their opinions towards the

easiness of internet usage, and once again nearly half of respondents (46%, 610 out of 1327 respondents) found the internet difficult to use. This might simply imply the gap between the technology development and the adoption by the older adults, which might prevent the access of older adults to the advanced functions/feature offered by the service providers.

DO YOU HAVE ACCESS TO THE INTERNET? (1598)



HOW OFTEN DO YOU USE THE INTERNET?(1421)



HOW EASY IS IT FOR YOU TO USE THE INTERNET? (1327)

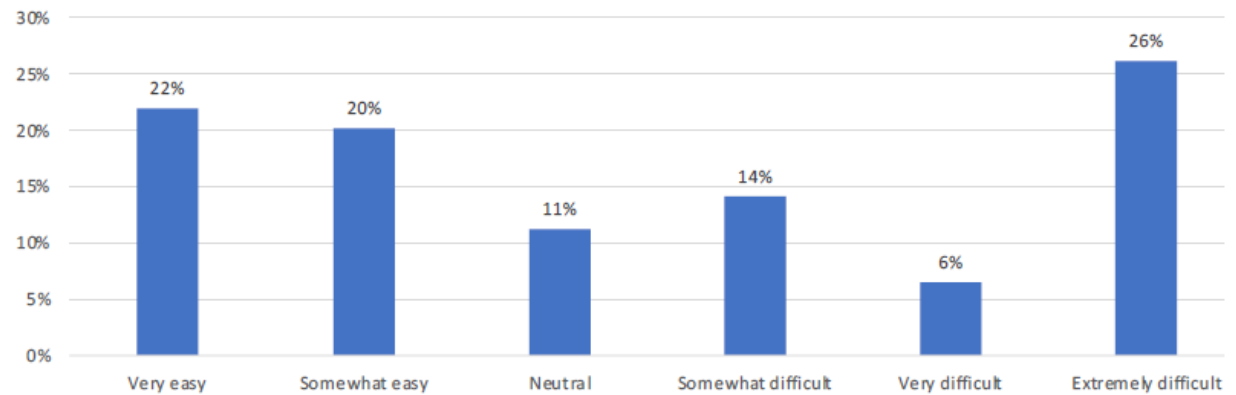
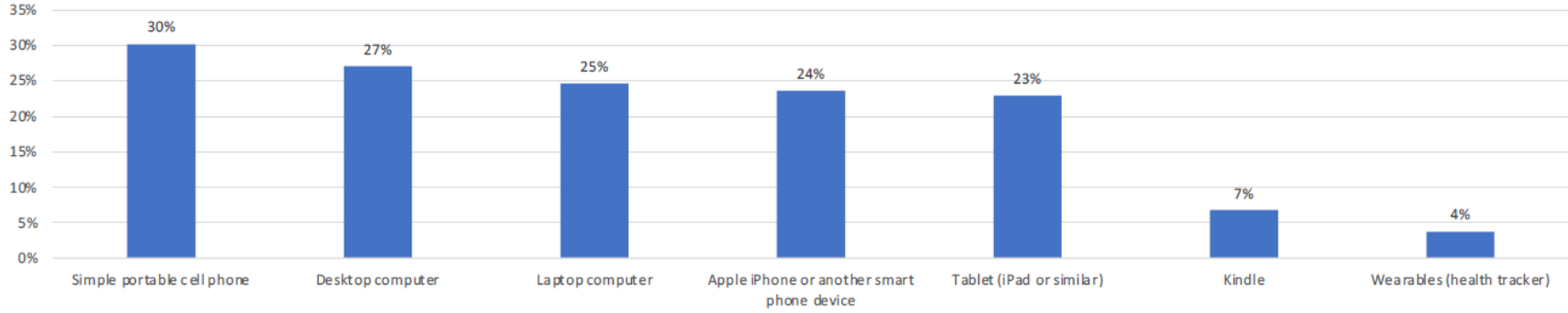


Figure 5.10: Internet services usage by older adult respondents.

Then respondents were asked about their choice of mobile devices and the extent of their usage, with 1550 and 1019 responses, respectively. The results can be found in Figure 5.11. Despite the regular usage of sending/receiving emails/messages, online shopping received the most attention by the respondents, and less than 10% of the respondents reported using the ride services. The opinions expressed by the respondents were also collected for both pre- and during COVID regarding the mobile device's usage. The general trends do not show a significant difference for almost all the predefined options.

The questionnaire then asked how the respondents find information about transportation services such as bus or taxi, for which there were 1320 responses (Figure 5.12). Most of the respondents (45%, 594 out of 1320 respondents) highly relied on friends/family members. Thirty-four percent of respondents still used the old-fashioned phone book for information retrieval of the transportation services. The selection rates for other predefined options showed either the lack of effective distribution of transportation services information or the lower adoption rate of new technologies for information retrieval.

WHICH OF THE FOLLOWING DO YOU USE? (1550)



WHAT DO YOU USE YOUR COMPUTER/DEVICE FOR? PLEASE TELL US WHAT YOU USE IT FOR NOW AND WHAT YOU USED IT FOR BEFORE COVID-19.(1019)

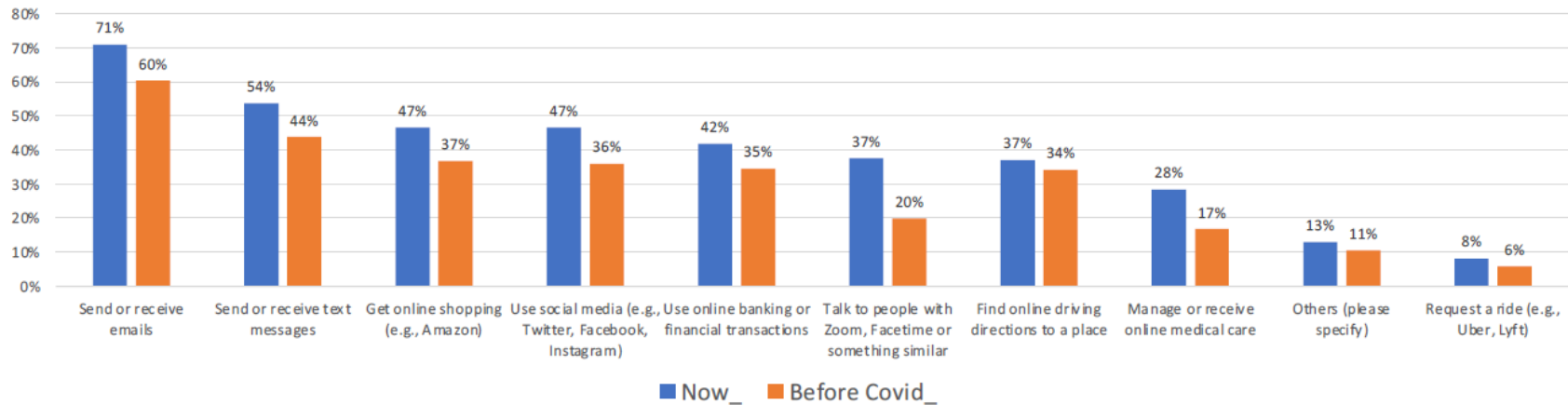


Figure 5.11: Choice of mobile devices and the extent of their usage by older adult respondents.

HOW DO YOU FIND INFORMATION ABOUT TRANSPORTATION SERVICES LIKE BUS OR TAXI?(1320)

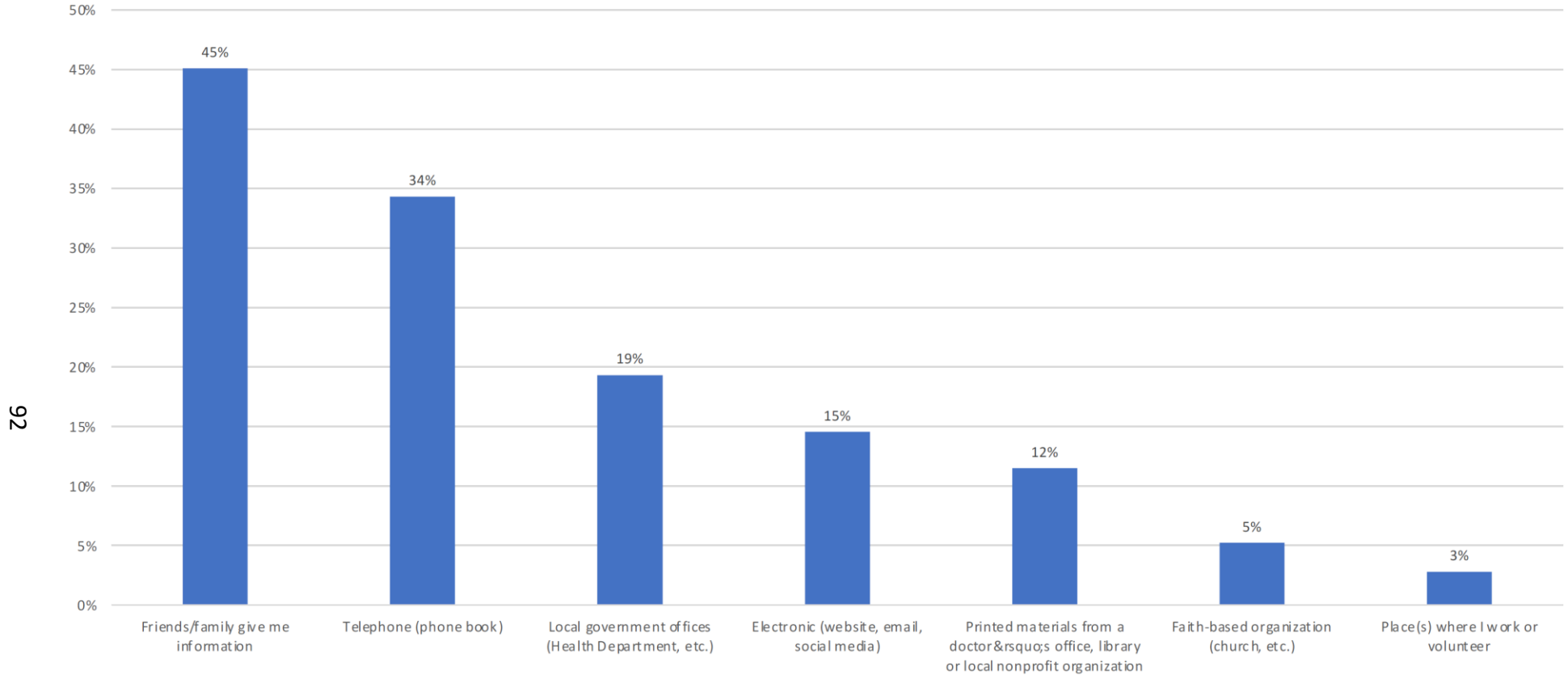


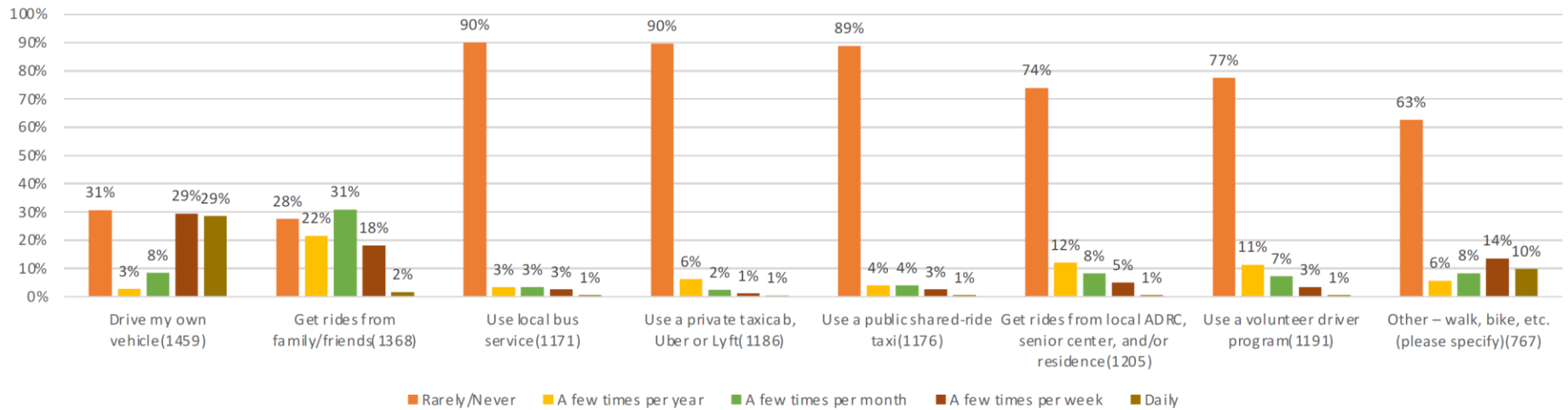
Figure 5.12: Information retrieval for transportation services by older adult respondents.

5.3 Survey Topic: Travel Patterns

The second key focus of the survey questionnaire was travel patterns exhibited by the respondents, specifically their transportation mode preferences. This aspect of the survey aimed to gain a comprehensive understanding of the mobility choices made by older adults, shedding light on their preferred modes of transportation for various travel purposes.

The respondents were initially queried about their transportation mode preferences both before and during the COVID-19 pandemic. The frequency of their mode selections is visually represented in Figure 5.13, providing a comparative overview of the changes in transportation preferences amid the pandemic. The survey results clearly highlight the dominance of self-driving and reliance on friends/family for transportation among respondents. Local public and private services were rarely used, with 70%-90% of respondents reporting infrequent or no usage. This response underscores the need to address barriers and limitations associated with local transportation options for older adults. Additionally, during COVID-19, there was a further decrease in participation in these services by survey participants.

BEFORE COVID-19, HOW OFTEN DID YOU...? (1594)



NOW DURING COVID-19, HOW OFTEN DO YOU...? (1572)

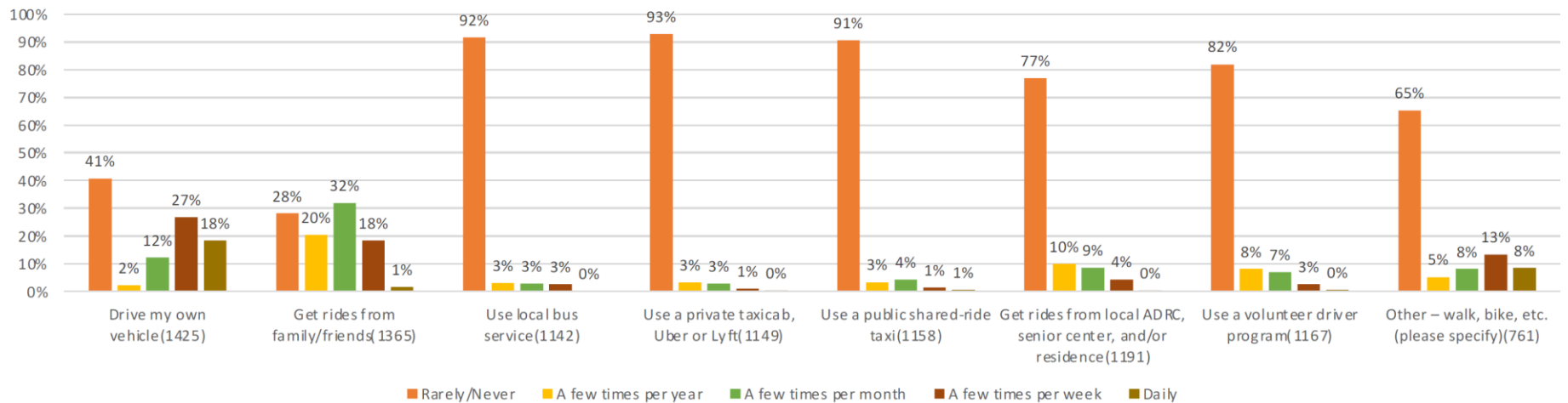


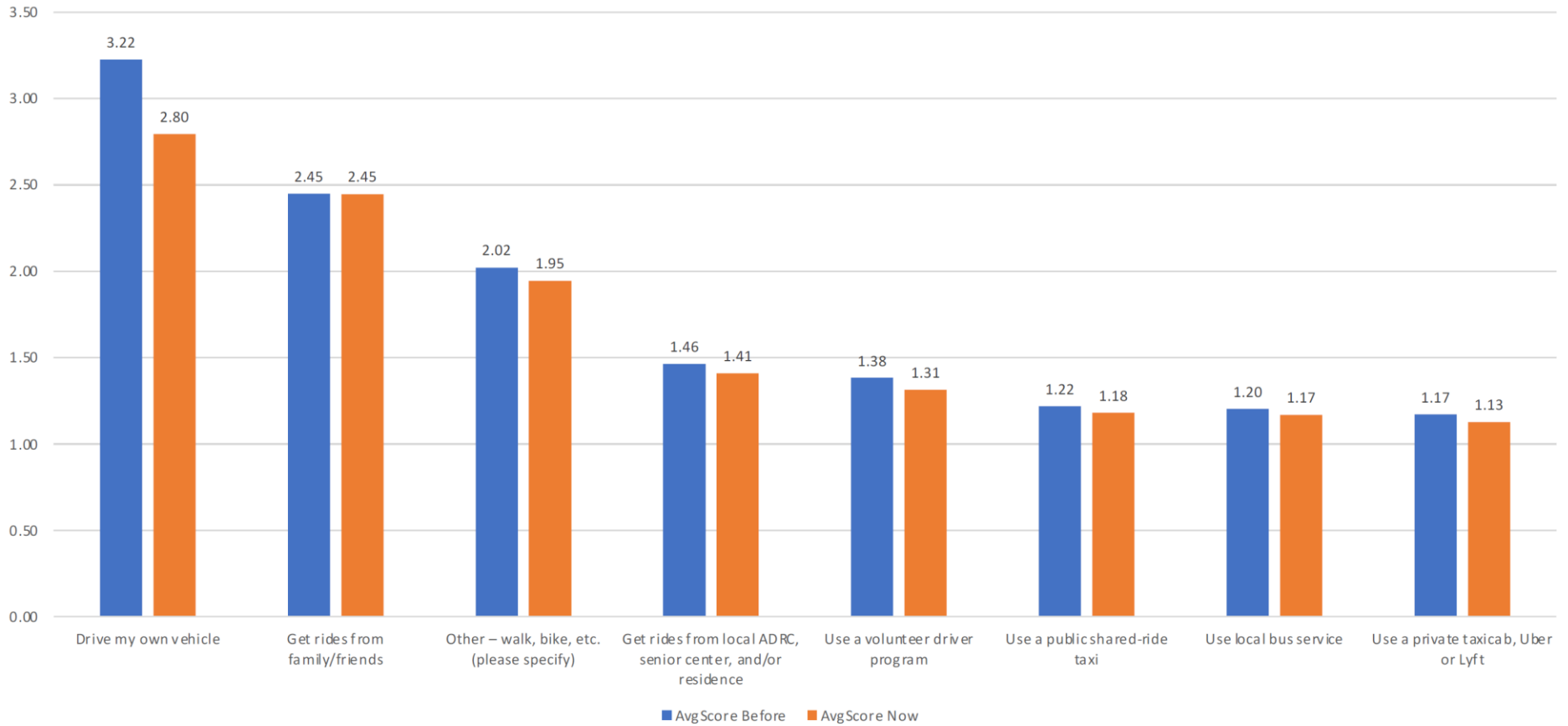
Figure 5.13: Comparative analysis of transportation mode preferences pre- and during COVID-19 by older adult respondents.

Furthermore, the survey included ratings associated with each transportation mode, allowing respondents to express their preferences. Similar patterns were observed as in the previous question, with the majority of respondents expressing a preference for owning a car. Such results can be found in Figure 5.14 below.

Next, respondents were asked to indicate the frequency of travel activities by purpose and rate the importance of each activity. The results are presented in Figure 5.15. A total of 1579 responses were received for this question. It was found that groceries ranked as the most important reason for making trips, followed by medical purposes. On the other hand, travel for a job or volunteer activities was rated as the least important. This finding emphasizes the need to ensure that alternative transportation options are accessible, affordable, and tailored to meet the specific needs of older adults who are unable to drive or choose not to drive. Additionally, these findings provide valuable guidance for policymakers, transportation service providers, and community organizations in developing strategies and initiatives that address the specific mobility needs of older adults, enhance transportation options, and promote active and independent living. By understanding the preferences and priorities of older adults, stakeholders can work towards designing transportation systems and services that effectively meet their needs and improve their overall quality of life.

**AVERAGE SCORE COMPARISON: BEFORE & NOW COVID-19, HOW OFTEN DO YOU...?
(1594 VS. 1572)**

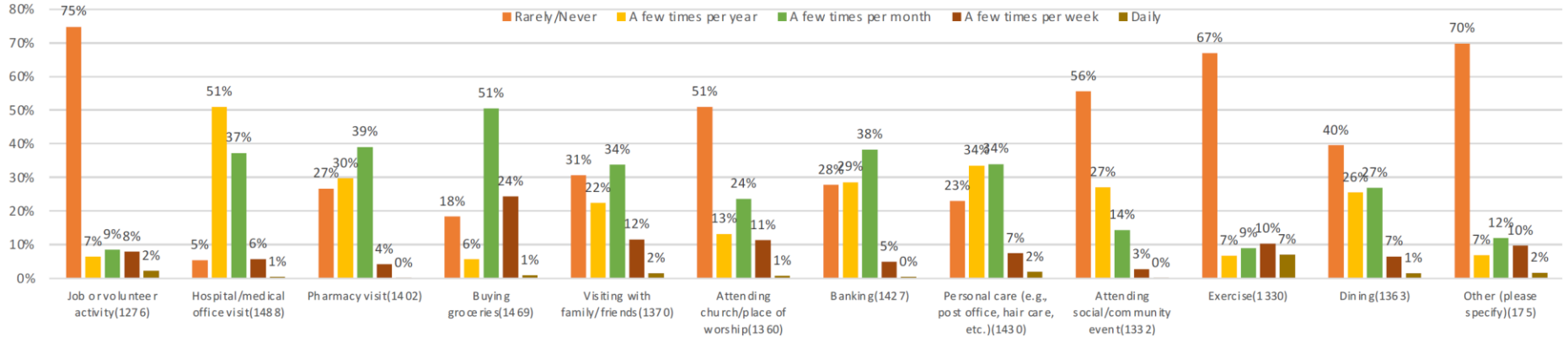
96



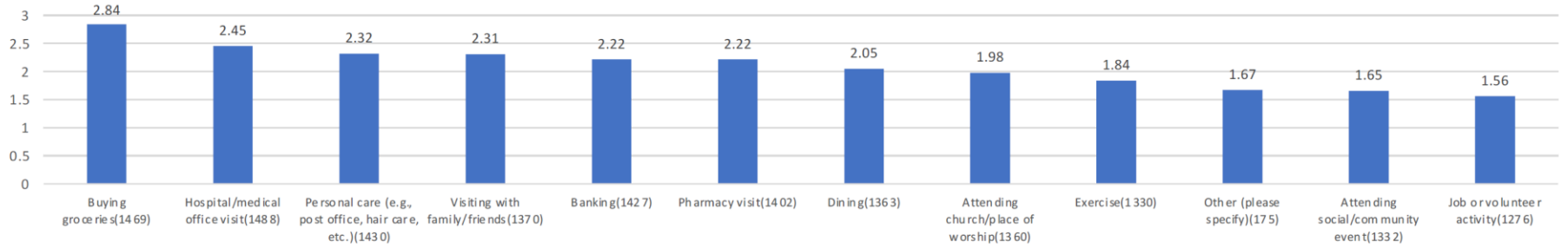
Rarely/Never	A few times per year	A few times per month	A few times per week	Daily
1	2	3	4	5

Figure 5.14: Average score comparison for mode choice: before and now COVID by older adult respondents.

HOW OFTEN DO YOU MAKE TRIPS FOR...?(1579)



AVERAGE SCORE



Rarely/Never	A few times per year	A few times per month	A few times per week	Daily
1	2	3	4	5

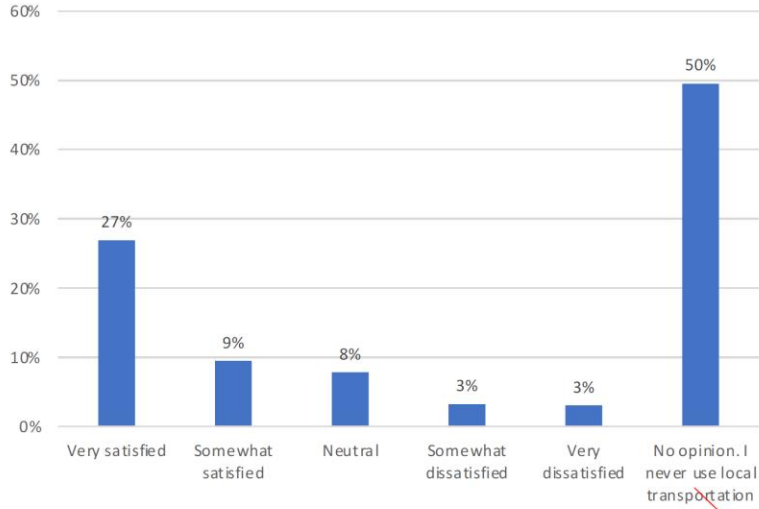
Figure 5.15: Frequency and importance of travel activities by purpose by older adult respondents.

5.4 Survey Topic: Satisfaction with Local Transportation Services

The third major survey topic focused on gauging the satisfaction levels of respondents with local transportation services. This section also gathered valuable insights into the key factors that influence older adults' decisions when choosing transportation options, such as driver behaviors and the availability of special features or assistance provided by the transportation services. By gathering opinions on these important aspects, the survey aimed to identify areas of improvement and understand the specific needs and preferences of older adults for accessing transportation services.

The first question within this topic investigated the overall satisfaction of respondents as users of local transportation services that they most frequently use. The corresponding results are displayed in Figure 5.16, with a total of 1532 (93%) responses received. Notably, 50% of the respondents reported having no opinion on service quality, which can be attributed to their lack of prior usage of local transportation services. This observation aligns with the findings from the earlier discussion on travel patterns among the respondents. Among the remaining respondents, 27% expressed being "Very Satisfied," while 9% claimed to be "Somewhat Satisfied," indicating a positive opinion towards the local transportation services. The same question was also posed to service providers, and the results, presented in Figure 5.16, exhibit different distribution patterns among the various attitudes. However, both sides share a similar overall trend, indicating a positive perception of the services when respondents have actually used them. In addition, it seems there are some misconceptions regarding local transportation here as 10% of respondents who answered "no opinion" actually used local transportation before (on their answers from previous questions)

IN GENERAL, HOW SATISFIED ARE YOU WITH THE LOCAL TRANSPORTATION SERVICE YOU USE MOST OFTEN? (1532)



The same question from service provider's survey

IN GENERAL, HOW WOULD YOU RATE THE ATTITUDES OF YOUR CLIENTS TOWARDS TRANSPORTATION SERVICES IN YOUR COMMUNITY? (99)

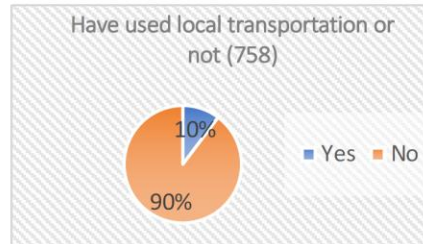
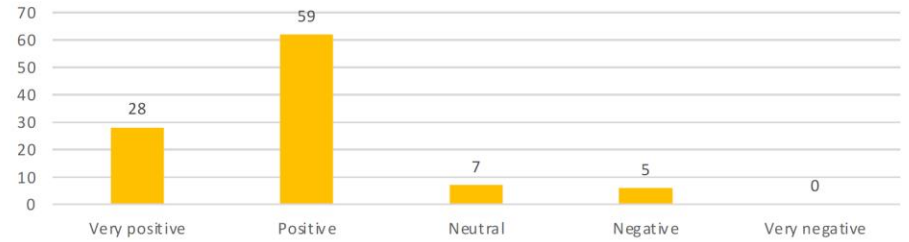


Figure 5.16: General satisfaction with local transportation services by older adult respondents.

Next, the respondents were asked to provide their selections of and to rate some predefined features of the transportation identified by the project team, including:

- Ride comes on time
- Ride is available at the time I need it
- Vehicle takes me to where I want to go
- There is real time information that tells me when the service will arrive
- I do not need to schedule my trip days in advance
- I can arrange my trip with an app or website
- There is “one call does it all” for all transportation service information I want to know
- There is good coordination between transportation and medical services
- There is a travel trainer who will escort and teach me about using transportation services
- The cost of the trip is affordable
- It is easy to pay for the trip by credit card or vouchers
- Vehicle is equipped with ramp or wheelchair lift
- I feel safe on the vehicle
- Vehicle is comfortable and clean
- I can carry as many bags as I need
- Language assistance is available
- Other (please describe)

The survey solicited feedback from both older adults and transportation service providers on the same question. The results are presented in Figures 5.17 and 5.18, with Figure 5.18 ranking each option based on the perspective of older adults. While there is a general consensus on most options between users and providers, there appears to be a notable discrepancy, particularly regarding “real-time information” and “wheelchair lifts.” Additionally, the survey included an open comments section where older adult respondents could provide text input on their expectations for transportation features and services. Table 5.2 showcases these comments, which primarily fall into categories such as "driver behavior" and "special feature/ assistance."

HOW IMPORTANT ARE THE FOLLOWING FEATURES OF TRANSPORTATION WHEN YOU TAKE A TRIP?(1055)

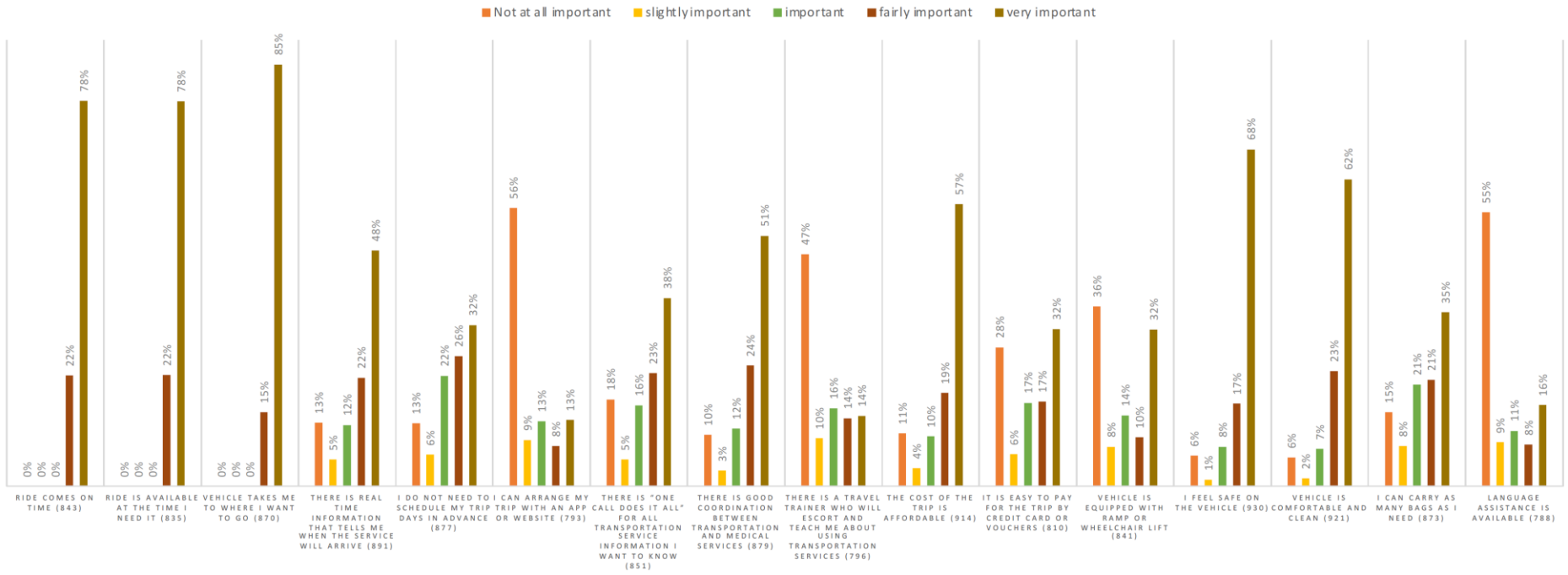
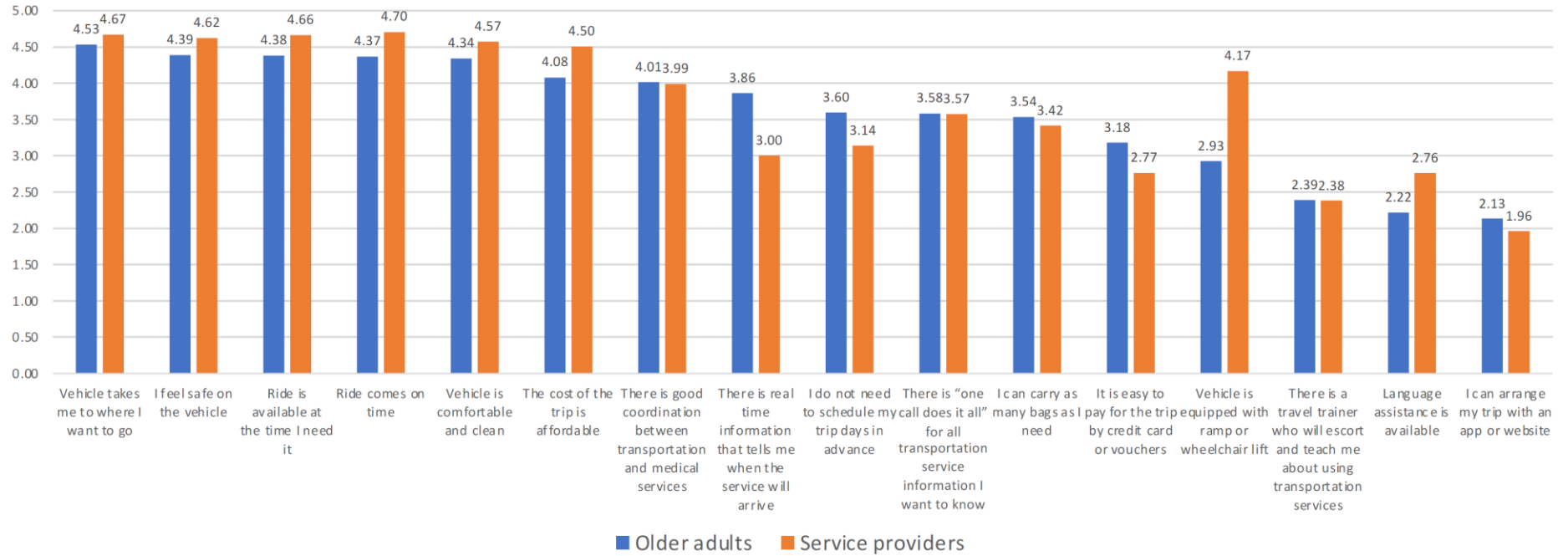


Figure 5.17: Feature importance of transportation (services) by older adult respondents.

** The same question has been asked to both older adults and transportation service providers*

Average score Comparison: How IMPORTANT are the following features of transportation when older adults take a trip*?



1	2	3	4	5
Not at all Important	Slightly Important	Important	Fairly Important	Very Important

Figure 5.18: Average score comparison for features of transportation (services) between older adults and service providers.

Table 5.2: Open Comments About the Topic of Satisfaction by Older Adult Respondents

Topic	Response
Driver Behavior (12)	Ask for more awesome drivers.
	Bus drivers, friendly and polite, helpful.
	A friendly driver.
	Driver doesn't smell like cigarette smoke.
	Driver is able to maneuver a wheelchair.
	Driver is friendly and considerate of older people.
	Driver is polite and pleasant.
	Driver is so respectful.
	Drivers are nice and know how to assist.
	Drivers are professional very nice.
	Drivers are trustworthy, safe, on time.
	Pleasant, helpful driver.
Special Features/Assistance (14)	Assistance for the blind.
	Available restroom.
	Can be able to have an extra person.
	Can help hold a walker.
	Door-to-door, as needed, dialysis guidelines.
	Easy to get into the vehicle.
	Assistance to and from the store.
	Help getting in and out of the bus or car.
	Make other stops for minor time wastes.
	More services.
	Need restaurants to deliver.
	Oxygen tanks.
	They help me with my bags and walker on steps.
	Need restaurants to deliver.
Vehicle is large enough to haul one person with knee surgery.	

5.5 Survey Topic: Travel Challenges and Limitations

The fourth key focus of the survey questionnaire aimed to understand the travel challenges and limitations faced by older adults. This valuable insight can help identify and address the specific barriers that hinder their mobility and access to transportation services. By gaining a deeper understanding of these challenges, appropriate strategies and interventions can be developed to enhance the overall travel experience for older adults and ensure their transportation needs are adequately met.

A total of 1,028 older adults responded to the question regarding the problems they have experienced when using or attempting to use transportation services in the last two years. Among these participants, 35% indicated that they hadn't encountered any travel-related issues. These findings are visually represented in Figure 5.19. Notably, the most significant grievances voiced by older adult service users revolved around schedule availability and route selection. Additionally, it is pertinent to highlight that 15% of respondents faced challenges while boarding or disembarking vehicles. Further insights reveal that around one-tenth of participants encountered concerns related to affordability.

In addition to quantitative data, qualitative feedback was also collected from the respondents, as shown in Table 5.3. The comments provided by older adults encompass various concerns, including fear due to poor driving skills, drivers not wearing masks during the pandemic, noisy vehicles, incidents involving drivers under the influence of drugs or alcohol, drivers lacking knowledge of destinations, inadequate assistance with seat belts, dissatisfaction with smoking drivers, difficulty understanding directions, and speeding by some drivers to make

up time. These comments provide valuable insights into the specific challenges faced by older adults when using transportation services.

Furthermore, respondents were asked if they have ever discontinued using transportation services due to the aforementioned problems they selected or mentioned. The results are depicted in Figure 5.20. Out of the 1,650 respondents, 49% (811 individuals) provided a response to this question, which aligns with the number of local transportation service users identified in the earlier survey topic on travel patterns. Interestingly, the data reveal that only 13% of respondents have been deterred from using transportation services as a result of these issues.

WHAT PROBLEMS HAVE YOU EXPERIENCED WHEN USING (OR ATTEMPTING TO USE) TRANSPORTATION SERVICES IN THE LAST TWO YEARS?(1028)

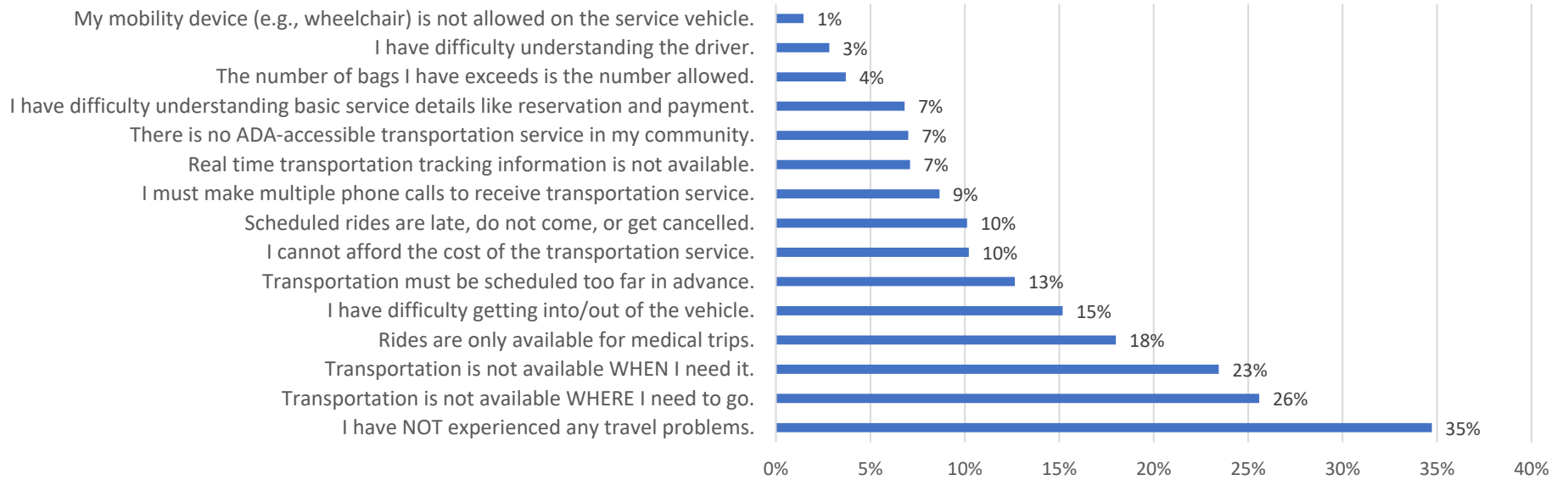


Figure 5.19: Problems experienced by older adults when using transportation services.

Table 5.3: Open Comments about the Topic of Travel Challenges and Limitations by Older Adult Respondents

Topic	Response
Travel Challenges and Limitations (9)	Being afraid because of poor driving skills. Most of the drivers are over 65. Some have poor driving behavior.
	Drivers on occasion don't wear masks during this pandemic.
	Extremely noisy vehicle - about 120 dB.
	Had one driver's skills decrease after picking me up after an appointment as he had used drugs or alcohol.
	Sometimes drivers don't know how to get to the destination.
	There was no help with the seatbelt from the driver, which I asked for, and he got in and drove off without it fastened. I don't ride any place without my seatbelt and was in an accident. Reported it to the office, and it didn't sound like it was a concern.
	The last time I used public transportation, I did not like it because the driver smokes. I have never taken a taxi service then.
	The van goes over white lines. The driver is always on the phone looking for directions.
	Vehicles from some drivers speed to make up time.

HAVE YOU STOPPED USING TRANSPORTATION DUE TO THE ABOVE PROBLEMS? (811)

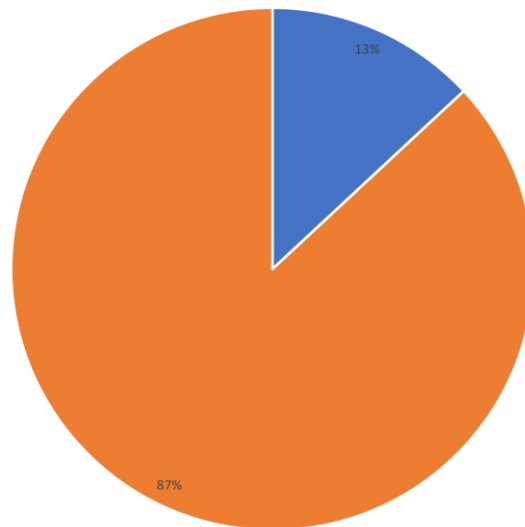


Figure 5.20: Impact of transportation problems on service usage by older adult respondents.

5.6 Survey Topic: Suggestions for Improvement

The last topic covered by only one question was to ask about any suggestions for improvement to the local transportation services provided to older adults. A total of 252 responses were obtained, and a wide range of text input was collected. The project team classified those suggestions into thirteen categories, with the number of responses provided in the bracket for each of the categories:

- Availability (77)
- Schedule (51)
- Ride Information (23)
- Ride Program (23)
- Affordability (21)
- Ride Quality (16)
- Assistance/Help (13)
- Reliability (8)
- Ease of Payment/Booking (6)
- Driver Behavior (6)
- Safety (5)
- Focus on people who do/cannot drive (2)
- Vehicle Tracking (1)

The suggestions provided by older adults for improving local transportation services encompass a wide range of areas. Under the category of Availability, respondents expressed

the need for public buses or trains that can cross county lines, increased flexibility in destinations and tasks, more pickup and drop-off locations, and assistance in getting to the vehicle for those with mobility limitations. They also emphasized the importance of having available rides on weekends, holidays, and Sundays, as well as a smaller-scale travel option for personal and church-related activities.

Regarding Schedule, participants highlighted the challenges of scheduling in advance, especially for early or late appointments, and the need for better communication and coordination to avoid appointment cancellations. They suggested accommodating multiple stops at stores, providing emergency call-in options, extending weekend hours, and reducing the lead time required to arrange transportation.

In terms of Ride Information, older adults emphasized the importance of knowing the cost when booking a ride, better advertising and publicity for transportation services, confirmation of reservations and pickup times, and access to comprehensive information about available services, costs, and how to use them. They also recommended providing written material on transportation programs, streamlining registration processes, and offering updated information on transportation options.

Suggestions for the Ride Program included allocating more funding to expand programs, recruiting more volunteer drivers, making transportation services more accessible and affordable for all age groups, improving coordination between medical facilities and transportation services, and addressing issues related to rude drivers and limited-service hours.

In terms of Ride Quality, participants suggested using vehicles that are clean, well-maintained, and equipped with wheelchair accessibility. They emphasized the need for vehicles

that are easy to enter and exit, have enough seating capacity, and are suitable for individuals with specific needs such as oxygen tanks or walkers.

Assistance and help were highlighted as crucial factors, with suggestions for fostering a helpful and supportive environment among riders and addressing the disconnection between different transportation services. Participants also emphasized the importance of reliable and punctual transportation services, ease of payment through prepayment options or digital platforms, and the need for courteous and professional drivers.

Safety concerns were also raised, with suggestions such as enforcing speed limits, providing written conduct rules for passengers, ensuring compliance with COVID-19 safety measures, and maintaining vehicles in good repair for a comfortable and secure travel experience.

Finally, under the category of Vehicle Tracking, older adults expressed an interest in receiving ride notifications via text messages to stay informed about the arrival of their transportation.

These suggestions from older adults provide valuable insights for improving local transportation services, addressing concerns related to availability, schedule flexibility, ride information, program effectiveness, ride quality, assistance and help, reliability, ease of payment and booking, driver quality, safety, and vehicle tracking. Incorporating these suggestions can contribute to enhancing transportation options and ensuring a more satisfactory travel experience for older adults in the community.

5.7 Summary

The survey results from older adults provided valuable insights into various aspects of transportation services. The survey received a total of 1,571 returned surveys, along with 79 online responses, totaling 1,650 responses. Efforts were made to accurately map the responses by county and tribe, resulting in 96% coverage. The survey analysis focused on socio-demographic characteristics and survey topics related to information on technology usage, travel patterns, satisfaction with local transportation services, travel challenges and limitations, and suggestions for improvement.

Regarding socio-demographic characteristics, the survey revealed that the majority of respondents were females (63%) and aged 65 or older. Income distribution and race aligned with general trends, with a significant portion of respondents reporting unemployment. Most respondents lived alone or with one other person, and a high percentage (93%) reported using personal mobility devices, such as walkers, canes, and wheelchairs.

In terms of information technology usage, the survey found that nearly half of the respondents lacked internet access, highlighting a potential digital divide among older adults. Online shopping was the most common activity, while ride services had low adoption rates. Friends and family members were the primary source of transportation information for respondents.

The survey also explored travel patterns and mode preferences. Self-driving and reliance on friends and family were dominant modes of transportation, while local public and private services had low usage rates. Groceries and medical purposes were the most important travel activities, while job or volunteer activities were rated as the least important.

Regarding satisfaction with local transportation services, approximately half of the respondents had no opinion, indicating limited usage of local services. Among those who expressed an opinion, the majority reported being very satisfied. The survey also collected feedback on specific features of transportation services, revealing a consensus on most options between users and providers, with some discrepancies related to real-time information and wheelchair accessibility.

The survey identified travel challenges and limitations faced by older adults. The most prominent issues reported were schedule availability and route choice. Comments provided by respondents highlighted concerns such as poor driver behavior, lack of mask-wearing during the pandemic, noisy vehicles, and drivers lacking knowledge of destinations. However, only 13% of respondents discontinued using transportation services due to these problems.

Last, older adults provided their suggestions for improving local transportation services. These suggestions covered various aspects, including availability, schedule flexibility, ride information, affordability, ride quality, assistance, reliability, ease of payment and booking, driver behavior, safety, and vehicle tracking. Incorporating these suggestions can contribute to enhancing transportation options and addressing the specific needs of older adults.

Chapter 6 Questionnaire Survey Results: Service Providers

Within the context of our study, the collection of questionnaire responses from older adults primarily revolved around mailed hard copies, with a limited number of online submissions. On the other hand, when it came to the questionnaire distributed to service providers, an exclusive reliance on the online survey platform Qualtrics was employed. Throughout the span of March 2021, a comprehensive total of 103 responses were garnered. These encompassed input from diverse sources including 13 transit agencies drawn from the WisDOT Rural Public Transit/Transit Planning Program Manager list, 83 specialized service providers and mobility managers sourced from the WisDOT Specialized Transit Program Manager and Wisconsin Association of Mobility Managers list, and finally, 7 tribal aging programs referenced from the Greater Wisconsin Agency on Aging Resources (GWAAR) Transport Specialist list. It should be noted that we combined responses from specialized service providers and mobility managers together as a great number of names from the two lists overlapped. The distribution of responses can be seen in Figure 6.1.

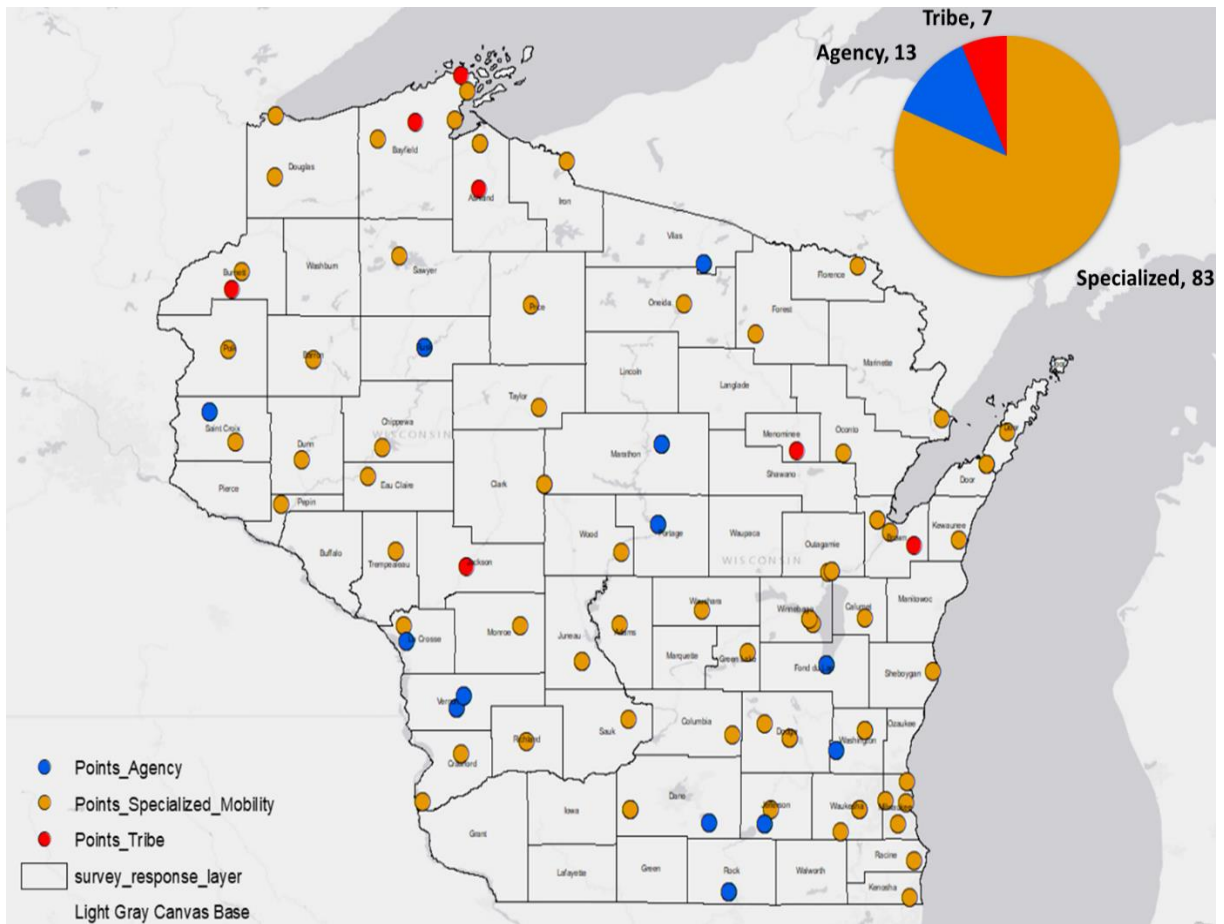


Figure 6.1: Spatial Distribution of the Responding Service Providers in Wisconsin.

Note: Some large urban areas, such as Milwaukee County and Fond du Lac County, have been involved for service provider service to understand the best practices of public transit services by such areas.

Because the questionnaire for service providers was structured similarly to the one distributed to the older adults, it can also be classified into two major themes with similar sub-themes in each: 1) profiles of the responded service providers (type of primary role, type of services, and personnel/staff composition), and 2) survey topics (information technology/management system usage, travel pattern of users, perceived satisfaction from users, problems/issues in providing services and coordination, and suggestions/plans for

improvement). The rest of the subsections for service providers' survey results firstly present the profiles of the respondents, and then provide the analysis of each survey topic.

6.1 Profiles of Responded Service Providers

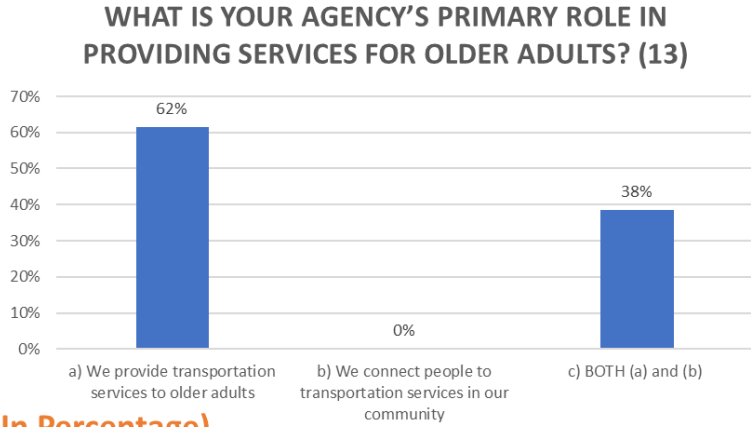
In order to gain a comprehensive understanding of the issues from the perspective of service providers, it is crucial to examine their profiles, which encompass three key aspects: 1) the type of primary roles they fulfill, 2) the main services they offer, and 3) the composition of their personnel and staff. By delving into these aspects, we can obtain valuable insights into the unique characteristics and capabilities of service providers, enabling us to identify potential challenges and opportunities for improvement. Understanding the diverse roles, services, and personnel composition within the service provider landscape will facilitate a more informed and targeted approach to addressing the issues at hand and ultimately enhancing the delivery of transportation services to the older adults. Thus, one of the major portions in the survey questionnaire was to collect such information by asking the following three questions:

1. What is your agency's primary role in providing services for older adults?
2. What transportation service(s) do you provide?
3. Who provides the rides?

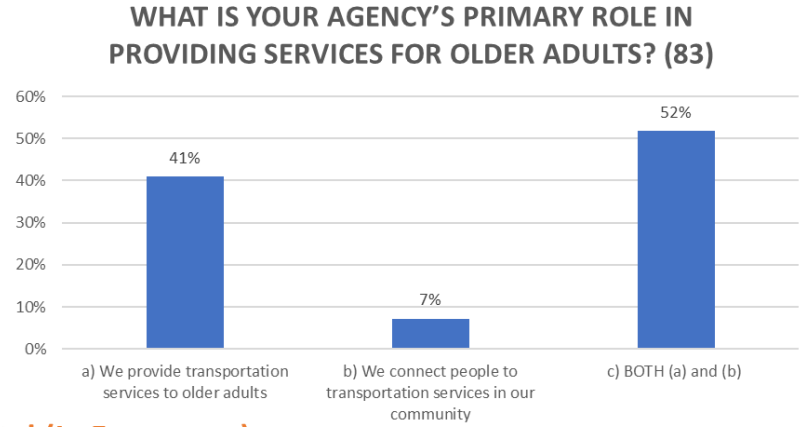
Figure 6.2 presents the findings regarding the primary roles of service providers in offering services for older adults, categorized by the type of provider. The results demonstrate that the vast majority of service providers, regardless of their specialization, acknowledge their agencies' involvement in providing services for older adults. Notably, while a few specialized mobility service providers may not specifically cater to older adults, the overall trend highlights

a recognition of their responsibility towards this demographic. This underscores the commitment and dedication of service providers towards addressing the transportation needs of older adults within their respective communities.

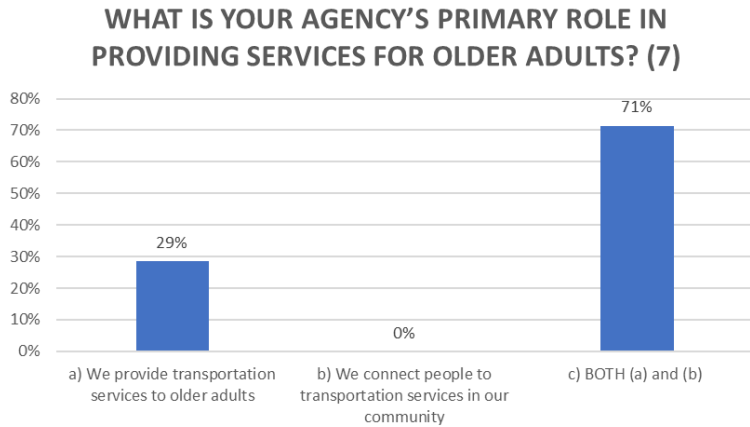
Agency (In Percentage)



Specialized (In Percentage)



Tribe (In Percentage)



Total (In Frequency)

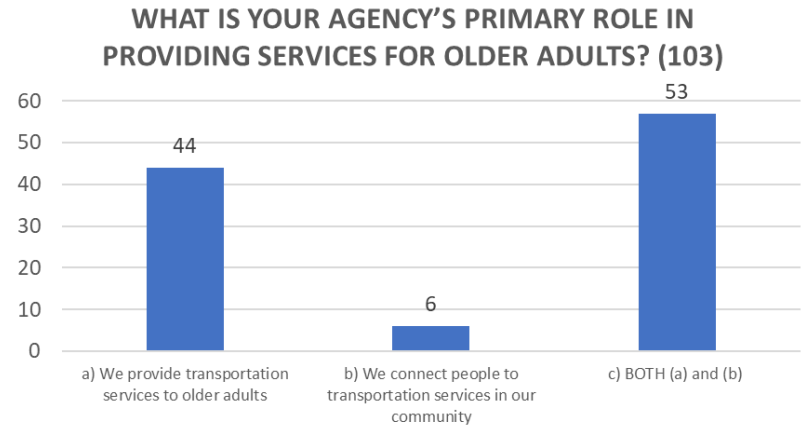
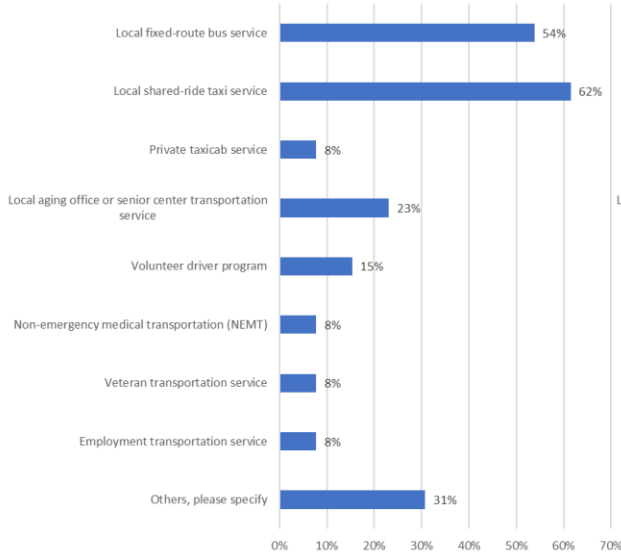


Figure 6.2: Agency's primary role in providing services for older adults by service provider type.

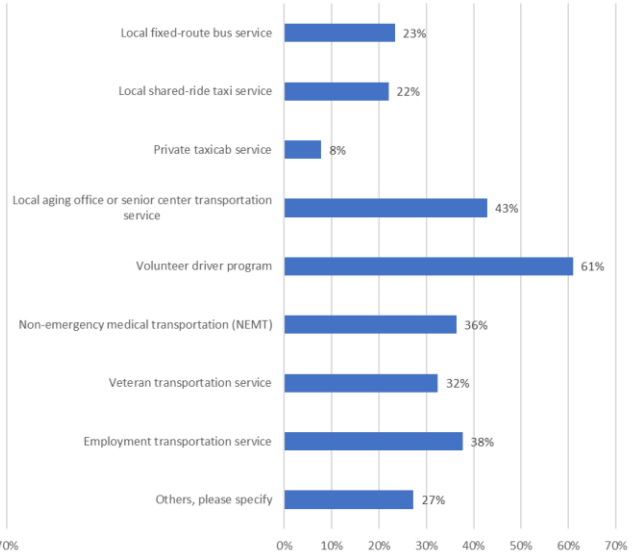
Agency (In Percentage)

WHAT TRANSPORTATION SERVICE(S) DO YOU PROVIDE (13)



Specialized (In Percentage)

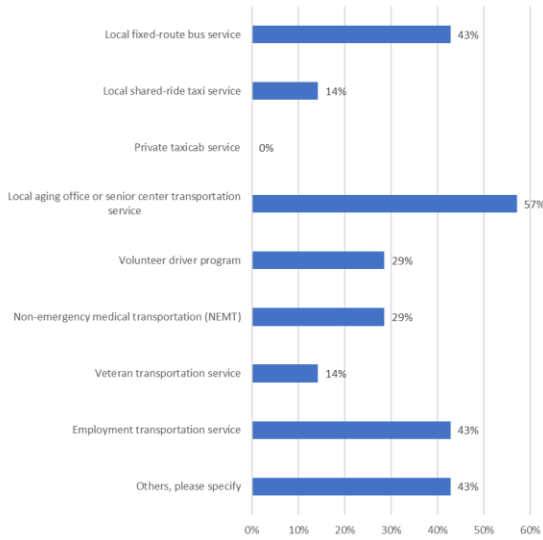
WHAT TRANSPORTATION SERVICE(S) DO YOU PROVIDE (77)



a) General Transit and Specialized Mobility

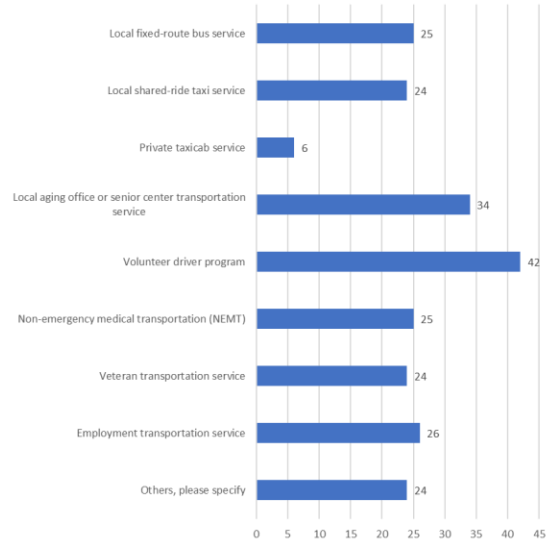
Tribe (In Percentage)

WHAT TRANSPORTATION SERVICE(S) DO YOU PROVIDE (7)



Total (In Frequency)

WHAT TRANSPORTATION SERVICE(S) DO YOU PROVIDE (97)



b) Tribal Aging Program and Total

Figure 6.3: Type of services provided by service provider type.

Figure 6.2 and Figure 6.3 display the results of the second question of the type of services provided by service provider (type). The survey question asked each agency to specify the transportation service(s) they provide. The responses varied among the three different types of agencies: general transit agencies, specialized mobility service providers, and tribal aging programs.

Among the general transit agencies (represented by 13 respondents), the most commonly selected services were local shared-ride taxi service, chosen by 8 respondents, and local fixed-route bus service, chosen by 7 respondents. Other selected services included private taxicab service, local aging office or senior center transportation service, volunteer driver program, non-emergency medical transportation (NEMT), veteran transportation service, and employment transportation service.

For specialized mobility service providers, which had 77 respondents, the top selected services were local fixed-route bus service and local shared-ride taxi service, chosen by 18 and 17 respondents, respectively. Additionally, a significant number of respondents selected services such as private taxicab service, local aging office or senior center transportation service, volunteer driver program, NEMT, veteran transportation service, and employment transportation service.

Last, the tribal aging programs (represented by 7 respondents) also offered a range of transportation services. The most frequently selected services among this group were local fixed-route bus service and local aging office or senior center transportation service, chosen by 3 and 4 respondents, respectively. Other selected services included local shared-ride taxi

service, volunteer driver program, NEMT, veteran transportation service, and employment transportation service.

Overall, the responses highlighted the diverse array of transportation services provided by these agencies. It is evident that while there are some similarities in the types of services offered, each agency type has its own unique focus and range of offerings to cater to the transportation needs of older adults in their respective communities.

Additionally, there was also an option for service providers to provide additional information if their services were not listed. The results are shown in Table 6.1. The text input responses revealed a variety of services beyond those listed in the question. Some of the additional services mentioned included discounted taxi vouchers, fuel vouchers, vehicle purchase and repair loan programs, and vehicle repair grant programs. Other services included ADA paratransit, non-fixed route bus services, community exploration programs for individuals with disabilities and seniors, and demand response transportation. There were also services related to door-to-door transportation for disabled individuals, wheelchair transportation, social day trips, and specialized transportation for seniors and people with disabilities.

Table 6.1: Additional Services Provided by Participated Services Providers

Transportation Services	Service Provider Type
1/2 price taxi vouchers, 1/2 price fuel vouchers, vehicle purchase and repair loan program and vehicle repair grant program	Specialized
ADA Paratransit	Specialized
Bus Service not fixed route	Specialized
community exploration for our community day program for individuals with disabilities and seniors.	Specialized
Demand Response Public Transportation for all within our service area.	Specialized
door to door transportation for disabled	Specialized
I am selecting both options for "taxi", but we do not charge a fare, all of our	Specialized

Transportation Services	Service Provider Type
rides are provided on a donation basis and no one over 60 or disabled is turned away due to a lack of being able to donate.	
Microtransit Paratransit	Specialized
non-emergency medical wheelchair transportation	Specialized
Our agency works with local private taxicab companies to provide voucher rides that cost the rider 50% of the usual cost of the trip. We also offer no interest vehicle repair and purchase loans. Some unemployed or those living on SSI may qualify for a repair grant for repairs and safety issues.	Specialized
Out of Town Medical Appointments	Specialized
sell taxi tickets at 1/2 price Have a fun day and shopping day busses.	Specialized
Shopping, employment, education, recreation for seniors and disabled	Specialized
Social day trips on bus to regional events and locations.	Specialized
Social visits	Specialized
Specialized transportation for seniors and people with disabilities, both ambulatory and wheelchair accessible. Regional hospital discharge for seniors and people with disabilities, both ambulatory and wheelchair accessible. Referrals and authorizations for these services received from MCO and MA Waiver.	Specialized
Sub-grant \$85.21 to rural transit system	Specialized
We contract with agencies to provide transportation for employment and medical appointment due to staff shortages.	Specialized
We deliver food from pantry to door. We provide activity transportation to local care facilities and nursing homes. Provide transportation for sheltered workshops daily.	Specialized
We provide funding for the Oneida-Vilas Transit Commission for public transportation in the two counties. Limited areas for this service.	Specialized
We provide transportation for our nursing home residents to medical appointments and on occasion for our assisted living residents to medical appointments.	Specialized
We transportation individuals as part of a CSP program with the state	Specialized
Wheelchair vans on a call for availability basis.	Specialized
ADA paratransit service	Agency
Deviated fixed route	Agency
Express, Fixed-Route Bus Service	Agency
Paratransit service for individuals who are unable to use fixed route bus service due to a disability. The taxicab service we provide is a contracted service for individuals who are unable to utilize our other public transportation options. We also provide fixed flexible rural bus routes to certain areas of our county.	Agency

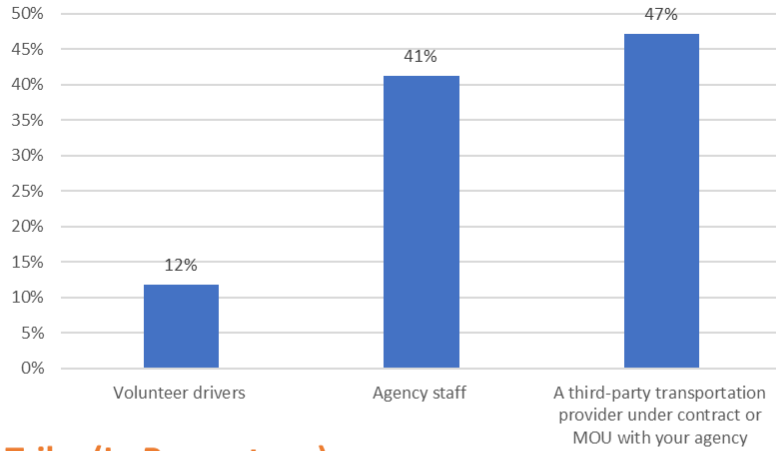
The last question for obtaining the profile information of the service provider asked about who provides the rides for the transportation services offered by the participating agencies. The responses varied among the different types of agencies and are demonstrated in Figure 6.4.

For general transit agencies, the majority of respondents (47%) indicated that the rides are provided by a third-party transportation provider under contract or memorandum of understanding (MOU) with their agency. Agency staff accounted for 41% of the responses, while volunteer drivers were selected by 12% of the respondents. Among specialized mobility service providers, both agency staff and volunteer drivers played significant roles in providing rides. The majority of respondents (68%) stated that agency staff are responsible for providing the rides, closely followed by volunteer drivers at 65%. A smaller portion (29%) indicated that rides are outsourced to a third-party transportation provider under contract or MOU. In the case of tribal aging programs, agency staff were primarily responsible for providing the rides, as indicated by 80% of the respondents. Volunteer drivers accounted for 20% of the responses, while no respondents selected a third-party transportation provider under contract or MOU.

These responses highlight the diverse approaches taken by different types of agencies in terms of who provides the rides for transportation services. While agency staff are heavily involved across all agency types, the reliance on volunteer drivers and third-party transportation providers varies. Understanding the distribution of responsibilities can help in comprehending the operational dynamics and resource allocation within each agency type.

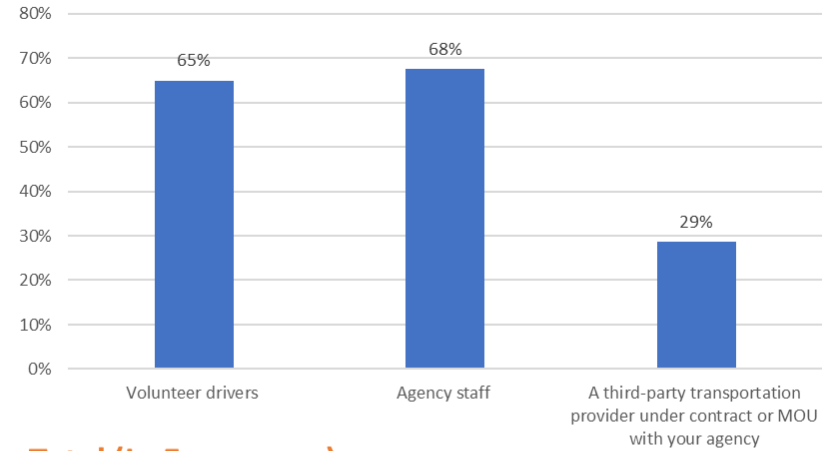
Agency (In Percentage)

WHO PROVIDES THE RIDES? (13)



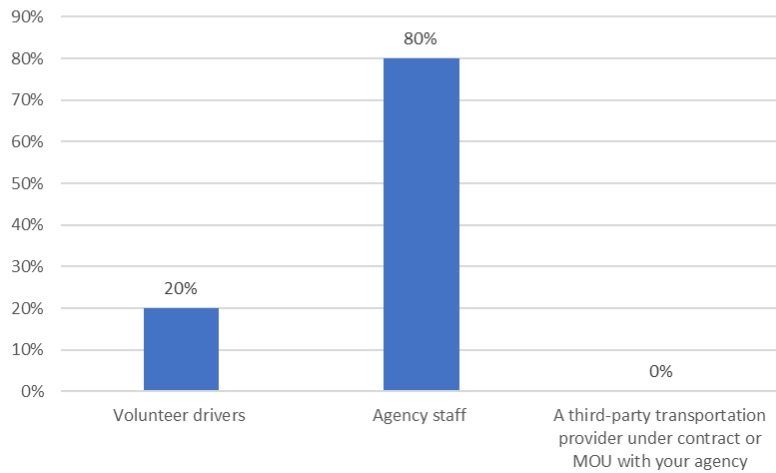
Specialized (In Percentage)

WHO PROVIDES THE RIDES? (77)



Tribe (In Percentage)

WHO PROVIDES THE RIDES? (7)



Total (In Frequency)

WHO PROVIDES THE RIDES? (97)

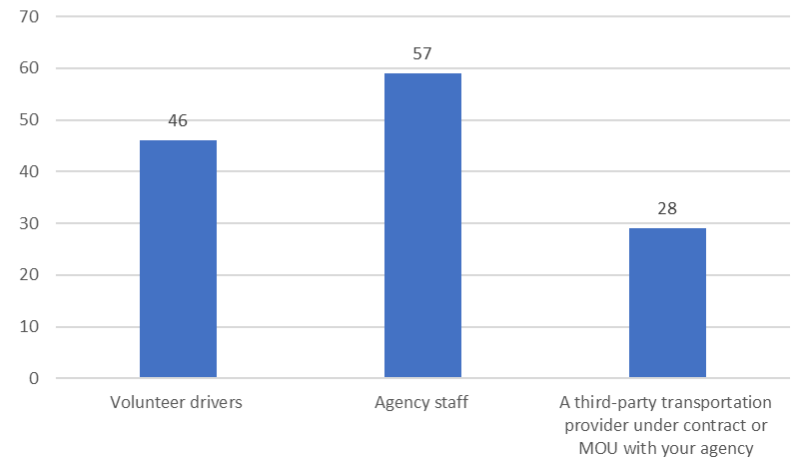


Figure 6.4: Personnel/Staff composition for providing services by different type of service providers.

6.2 Survey Topic: Information Technology/Management System Usage

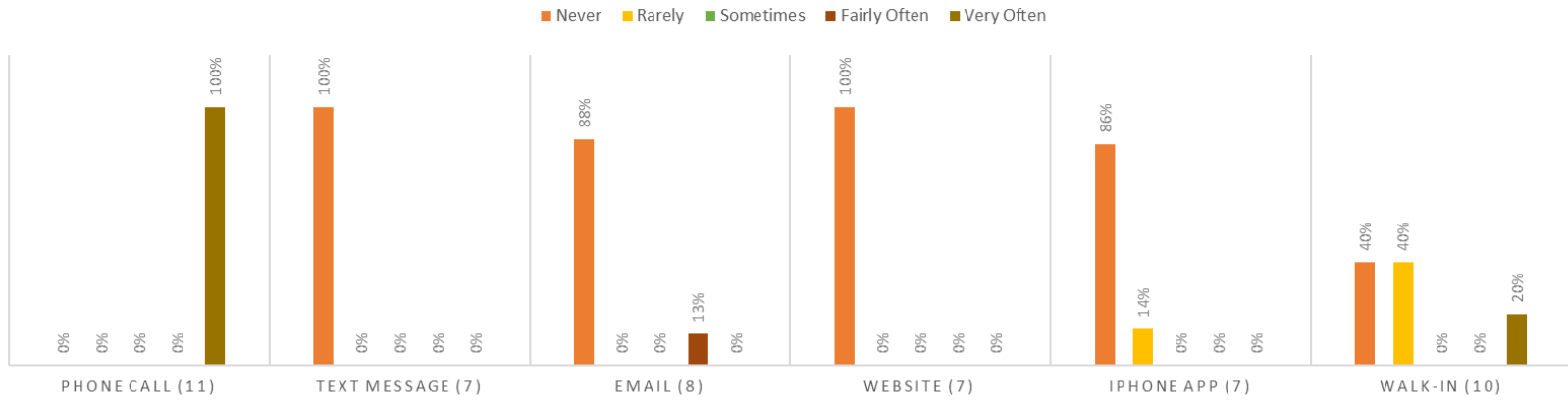
In order to better understand the usage of information technology and management systems in transportation services, with a specific focus on serving older adults, a series of questions were included in the survey questionnaire. By examining how clients typically book services, the lead time for bookings, confirmation timelines, software usage, and mobility management services, we can assess the benefits and limitations of these systems in catering to the needs of older adults. Additionally, the section explores how agencies share information about their transportation services with clients, providing insights into the effectiveness of communication channels for reaching this demographic. Understanding the role of technology and management systems in serving older adults is crucial for optimizing service delivery, addressing accessibility challenges, and ensuring the efficient use of resources. This section contributes valuable knowledge to enhance transportation services tailored to the unique requirements of older adult passengers.

The first question aimed to gather insights from service providers regarding the frequency of different booking methods used by their clients. The results can be found in Figures 6.5 to 6.7. Making phone calls to request services tends to be the most popular and used way. The results highlight the flexibility and adaptability of clients from tribal aging programs, who use various methods with varying frequencies. This indicates the diverse approaches employed by tribal aging program agencies to meet their clients' transportation needs. Furthermore, the survey responses revealed a relatively low internet adoption rate among older adults, as confirmed by all three types of service providers, very similar to the results from the older adult survey. It is particularly surprising that no participants from general

transit agencies reported website usage by their clients for service requests. Similarly, limited usage of mobile devices, such as phone apps, was observed across all three types of service providers, which may be attributed to the absence of available mobile apps. Additional open comments were also retrieved and shown in Table 6.2. It can also be observed that some else (e.g., family, friends, medical professional, Managed Care Organization (MCO)) sometimes helps the older adults to request the services.

Agency (In Percentage)

TYPICALLY, HOW DO YOUR CLIENTS BOOK TRANSPORTATION SERVICE(S)? (13)



Specialized (In Percentage)

TYPICALLY, HOW DO YOUR CLIENTS BOOK TRANSPORTATION SERVICE(S)? (76)

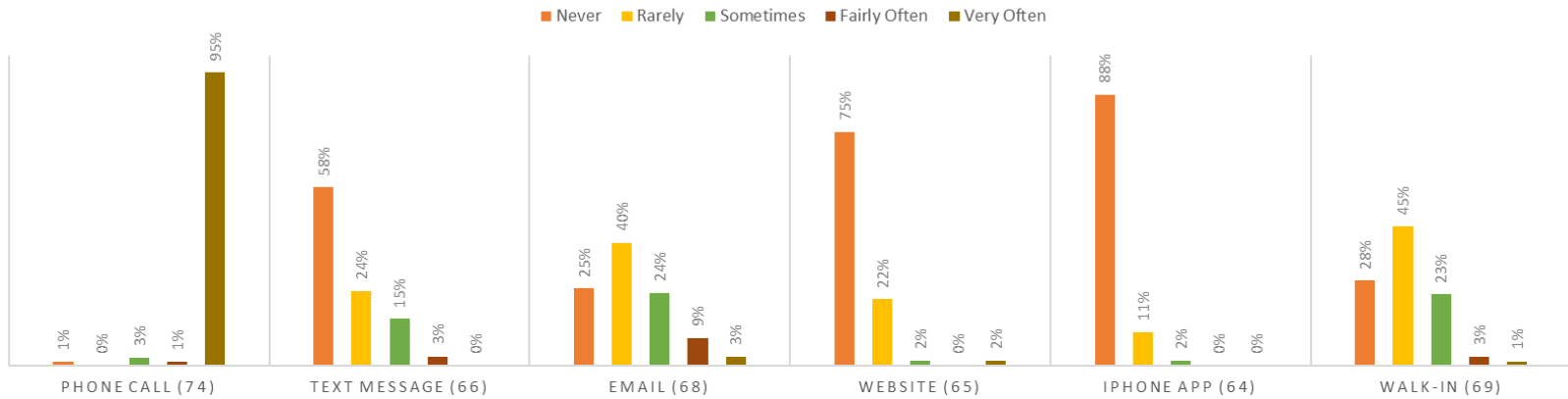
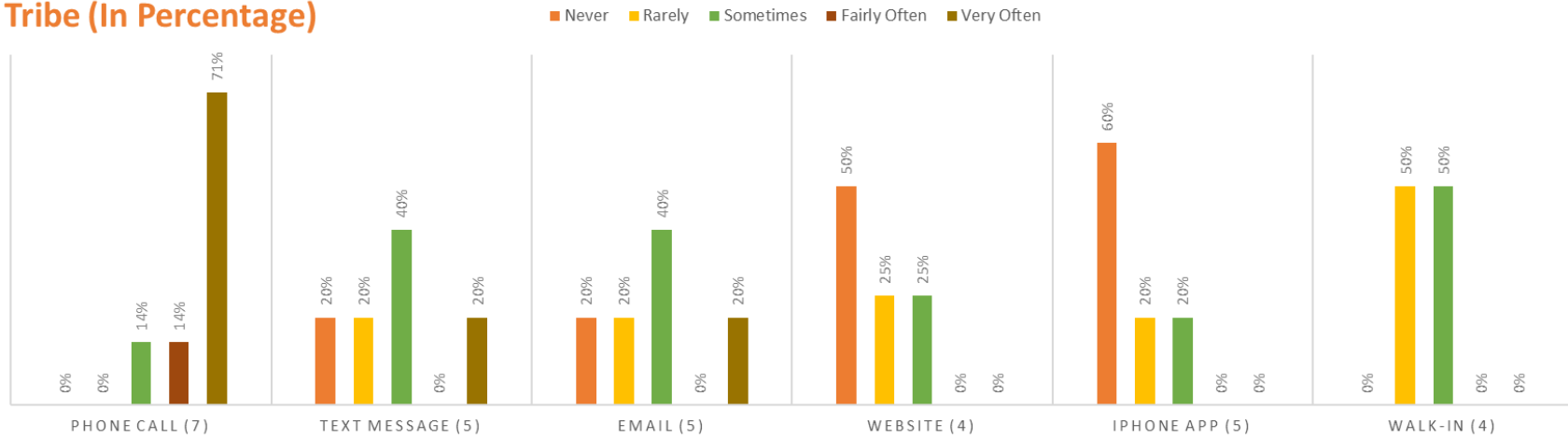


Figure 6.5: Perceived frequency of different booking methods used by clients (General Transit and Specialized Mobility).

TYPICALLY, HOW DO YOUR CLIENTS BOOK TRANSPORTATION SERVICE(S)? (7)

Tribe (In Percentage)



TYPICALLY, HOW DO YOUR CLIENTS BOOK TRANSPORTATION SERVICE(S)? (96)

Total (In Frequency)

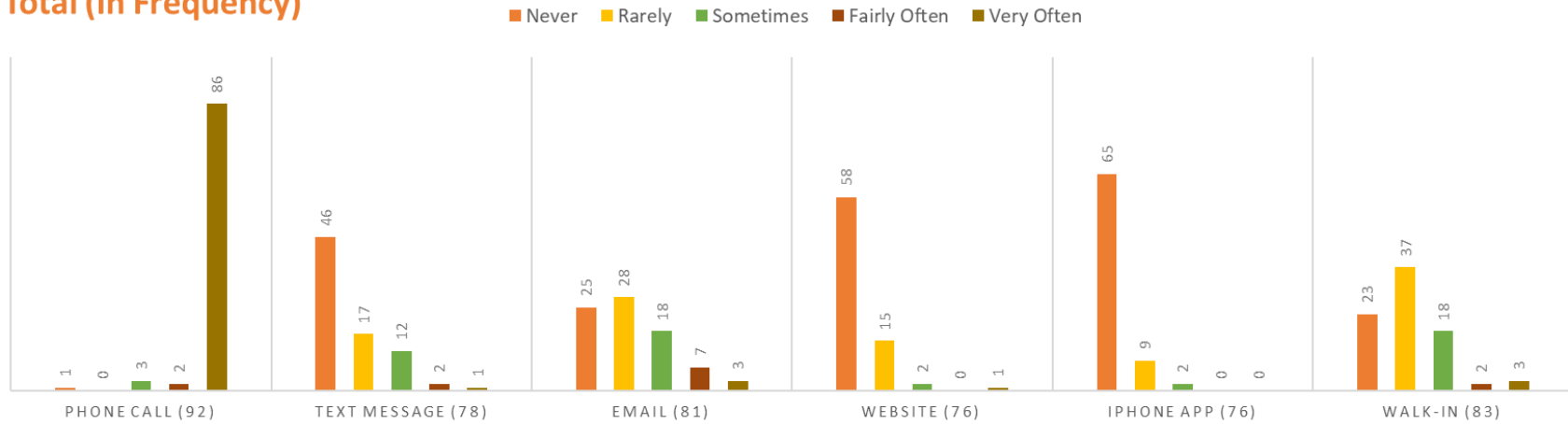


Figure 6.6: Perceived frequency of different booking methods used by clients (Tribal Aging Programs and Total).

Weighted Average Score

TYPICALLY, HOW DO YOUR CLIENTS BOOK TRANSPORTATION SERVICE(S)? **AVERAGE**

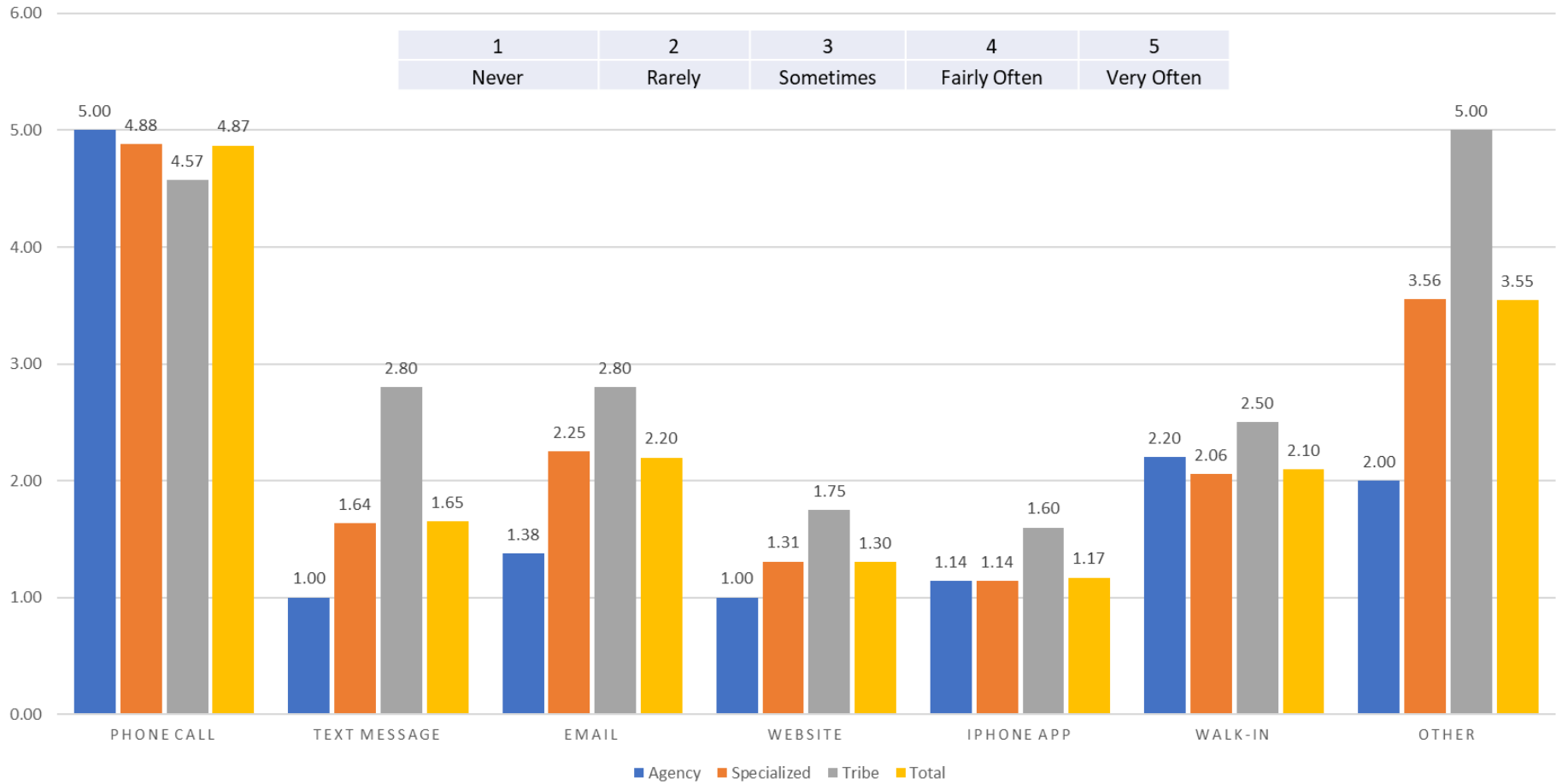


Figure 6.7: Perceived frequency of different booking methods used by clients (Weighted Average Score).

Table 6.2: Additional Comments to Question of “Typically, how do your clients book transportation service(s)?”

Comments	Service Provider Type
fixed route locations (bus stops)	Agency
Fixed route bus service	Agency
Paratransit rides book by phone. Fixed-route rides are not booked.	Agency
The method used to book service varies depending on the service.	Agency
We will be launching a website request service in the next few weeks and an app by end of year	Agency
Also fixed route (scheduled)	Specialized
Bus stop	Specialized
Fixed-route bus service	Specialized
I'm not really sure how they book them.	Specialized
MCO (Managed Care Organization) books	Specialized
referred from MCO or MA Waiver	Specialized
rider contacts us through hospital staff helping them to arrange rides	Specialized
They are regulars and we keep them in the book until they ask to be removed.	Specialized
Through a family member, or medical professional on occasion, and in almost all instances booking is by phone.	Specialized
through case managers	Specialized
We very rarely coordinate rides. Most often our participants use family or community members and then they arrange the rides themselves and just turn in the voucher to us after the fact for payment	Specialized

Subsequently, the survey included inquiries about the booking procedures, encompassing two key aspects: 1) the advance notice period for clients when booking the service, and 2) the typical timeframe for agencies to confirm bookings after clients make a request.

Figures 6.8 to 6.11 showcase the outcomes obtained from these questions, demonstrating the current practices among the participating public transit agencies. It can be seen from the results that people who request specialized mobility services tend to schedule their rides earlier than those using other means of transportation. This suggests that individuals relying on specialized mobility services may have specific requirements or logistical considerations that necessitate advanced planning. On the other hand, general transit service agencies reported a higher frequency of bookings made with shorter notice periods, indicating that clients using these services may have more immediate transportation needs or prefer a more flexible approach.

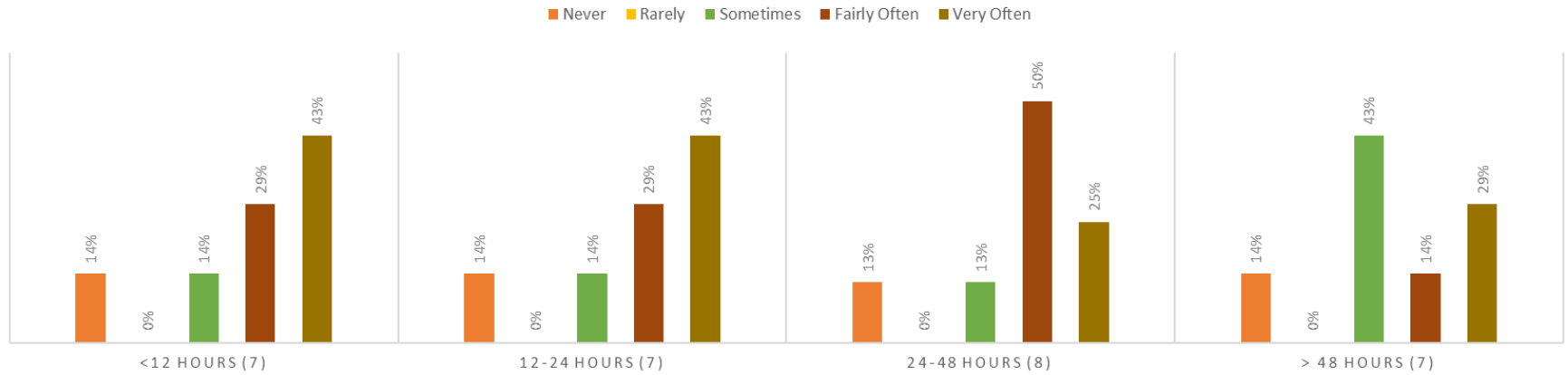
In terms of the time frame for confirming requests from agencies, all general transit service agencies claimed to provide instant confirmation without any delays. This real-time confirmation can contribute to increased customer satisfaction and convenience. Both specialized mobility service providers and tribal aging program agencies shared a similar practice, with specialized mobility service providers typically confirming bookings no later than the next day after the request is made by the clients. This quick response time ensures that clients can rely on their scheduled rides and make necessary arrangements accordingly.

Additional comments were provided by respondents in relation to the confirmation practice, summarized in Table 6.3. Although most of the input could be classified within the

predefined options, some respondents elaborated with further explanation and details. These comments shed light on factors influencing the confirmation process, such as driver availability, the requested time frame, and the type of transportation service. They highlighted the importance of coordinating with drivers, particularly in volunteer driver programs, and the need to provide clients with driver information closer to the scheduled date. These comments provided a more nuanced understanding of the confirmation practices employed by the agencies, emphasizing the various considerations and challenges involved in ensuring smooth and reliable transportation services for clients.

Agency (In Percentage)

HOW FAR IN ADVANCE DO YOUR CLIENTS BOOK THE SERVICE? (8)



Specialized (In Percentage)

HOW FAR IN ADVANCE DO YOUR CLIENTS BOOK THE SERVICE? (63)

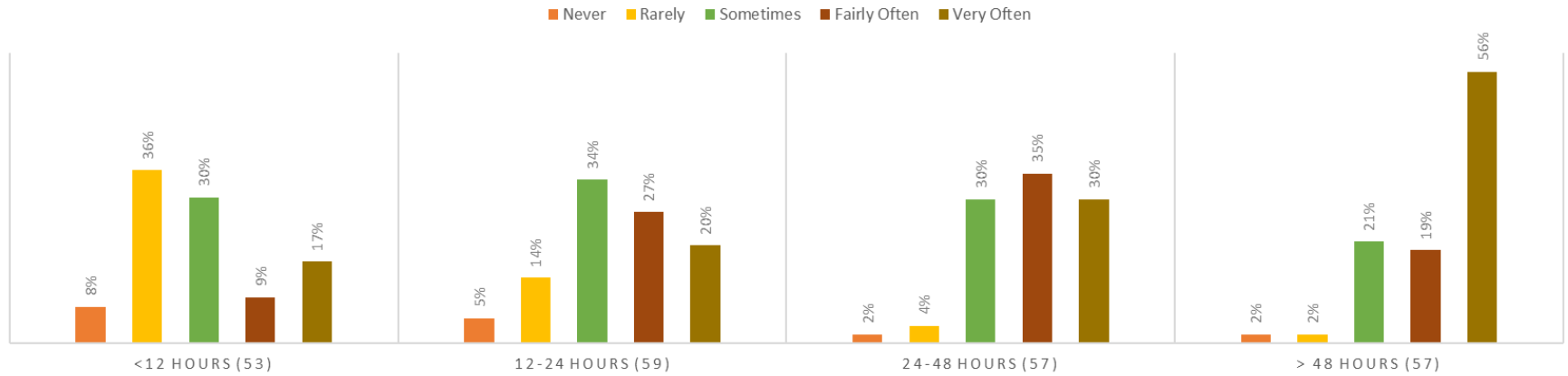
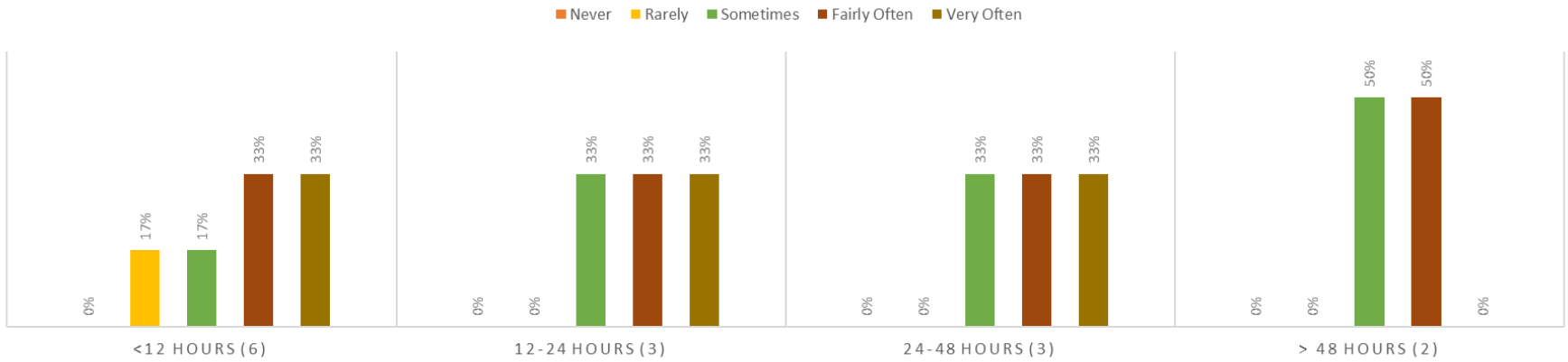


Figure 6.8: Advance notice period for clients when booking the service (General Transit and Specialized Mobility).

Tribe (In Percentage)

HOW FAR IN ADVANCE DO YOUR CLIENTS BOOK THE SERVICE? (6)



Total (In Frequency)

HOW FAR IN ADVANCE DO YOUR CLIENTS BOOK THE SERVICE? (77)

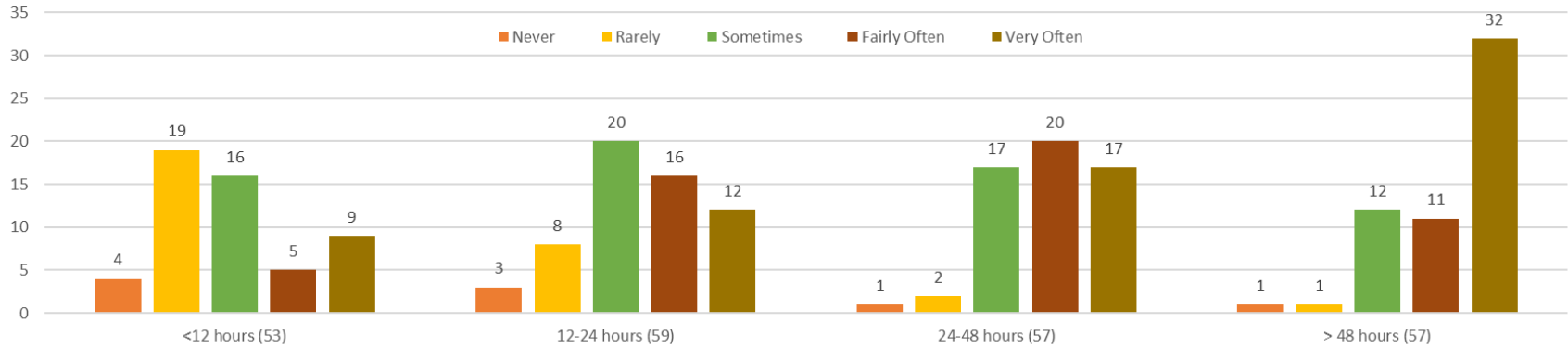


Figure 6.9: Advance notice period for clients when booking the service (Tribal Aging Program and Total).

Weighted Average Score

HOW FAR IN ADVANCE DO YOUR CLIENTS BOOK THE SERVICE? AVERAGE

135

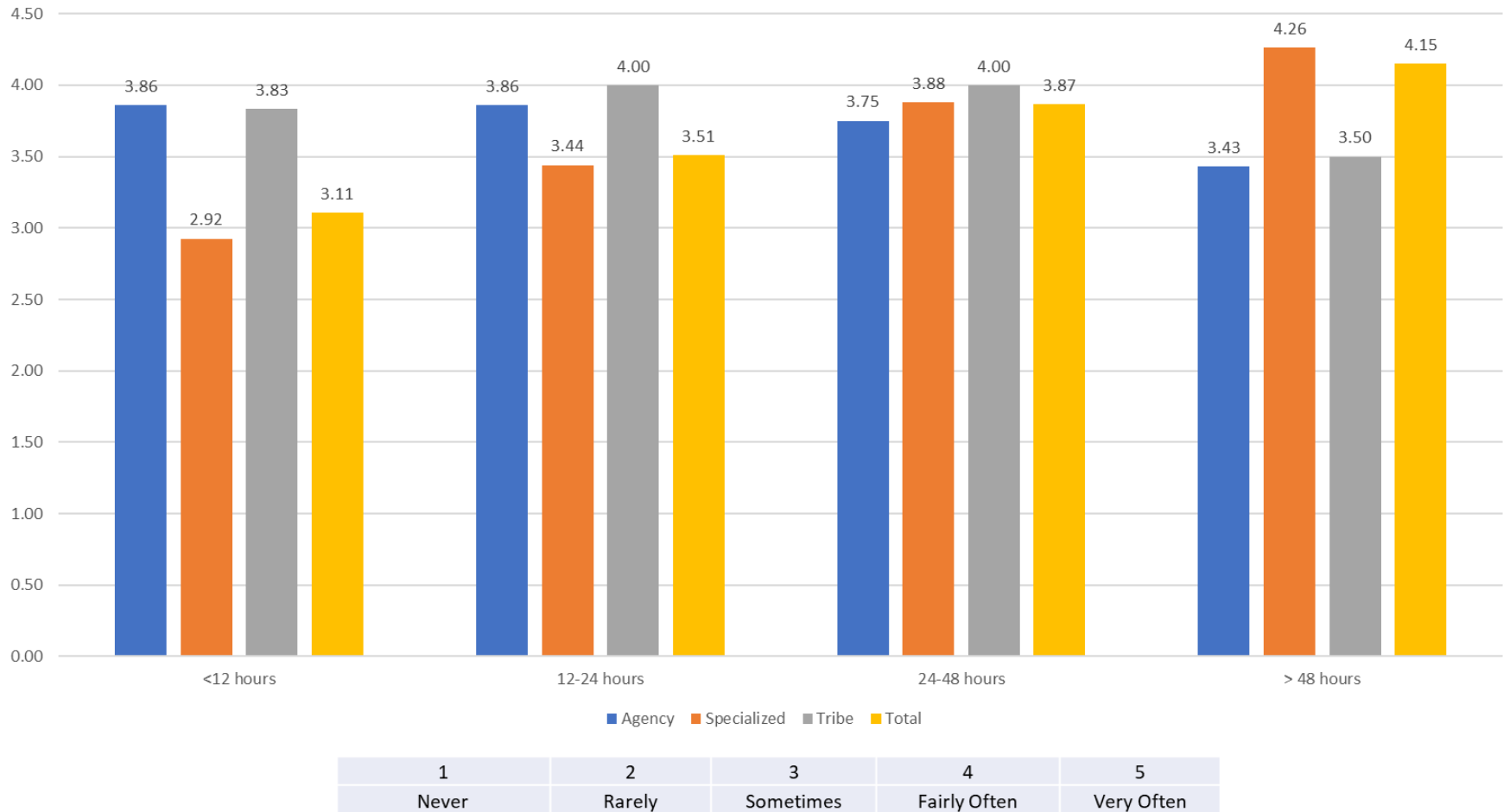
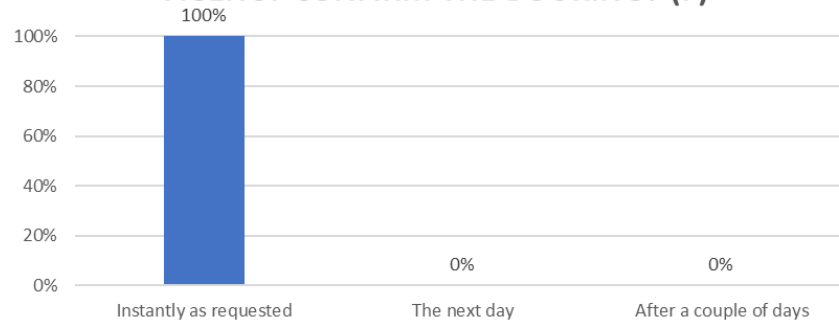


Figure 6.10: Advance notice period for clients when booking the service (Average Weighted Score).

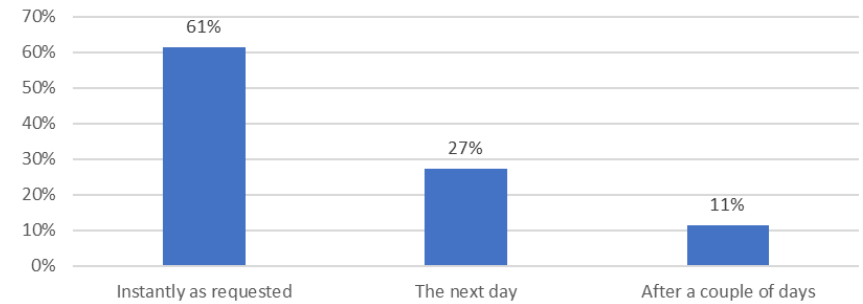
Agency (In Percentage)

TYPICALLY, HOW LONG AFTER A CLIENT BOOKS A RIDE WITH YOUR AGENCY DOES YOUR AGENCY CONFIRM THE BOOKING? (7)



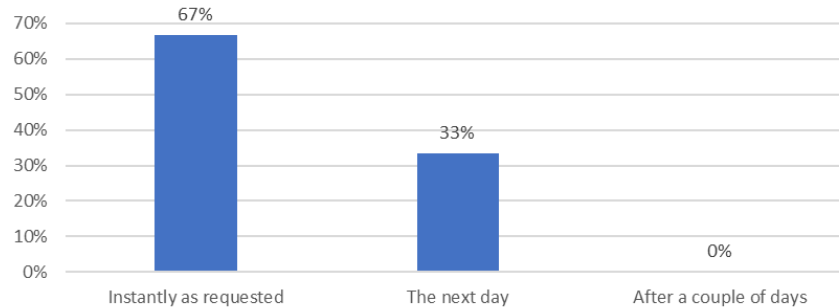
Specialized (In Percentage)

TYPICALLY, HOW LONG AFTER A CLIENT BOOKS A RIDE WITH YOUR AGENCY DOES YOUR AGENCY CONFIRM THE BOOKING? (44)



Tribe (In Percentage)

TYPICALLY, HOW LONG AFTER A CLIENT BOOKS A RIDE WITH YOUR AGENCY DOES YOUR AGENCY CONFIRM THE BOOKING? (6)



Total (In Frequency)

TYPICALLY, HOW LONG AFTER A CLIENT BOOKS A RIDE WITH YOUR AGENCY DOES YOUR AGENCY CONFIRM THE BOOKING? (57)

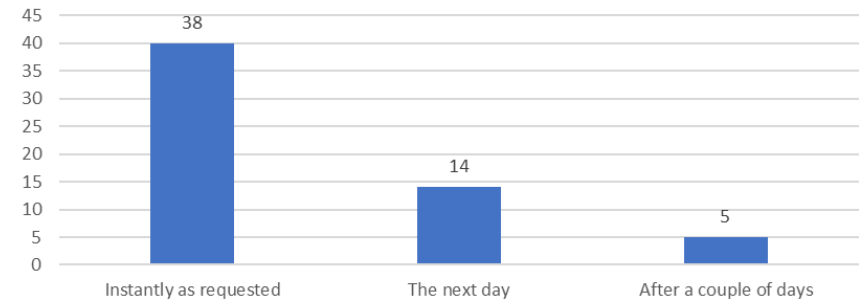


Figure 6.11: Responses to typical timeframe for agencies to confirm bookings after clients make a request.

Table 6.3: Additional Comments by Respondents in Relation to the Confirmation Practice

Comments	Service Provider Type
As I said before we rarely need to find rides for our consumers. Maybe once a week just depends on what is happening. Most times they give us a few days' notice as requested and then I try to find a driver. Our consumers know that we may not be able to find them a driver so often they will call several weeks in advance, and I try to find one with a few days and get back to them	Specialized
Confirm drivers on a weekly basis. Schedule for the following week on Thus & Fri and then as they come in for that week.	Specialized
Confirmation is given immediately if it is local transport, if it is a transport that will be out of town or a lot of wait time, the person is given notice the next day.	Specialized
Day before ride normally	Specialized
A few hours	Specialized
Generally, within a few hours but occasionally is the next day	Specialized
It depends on how much notice we receive.	Specialized
Same-day rides confirmed ASAP (depending on requested time, availability, and amount of other requests). Next day rides confirmed next day or a few hours later. In Advanced Rides confirmed the day before the requested day or the day of the ride request.	Specialized
Shared Ride Taxi: Instantly, Volunteer Driver Program: Within a day	Specialized
This depends on how far in advance a client requests the ride and if a volunteer driver and/or third-party provider is available to provide transportation on that given day.	Specialized
Usually, the same day or the next day.	Specialized
Varies by the different service options. Volunteer rides need more coordination and confirmation, may be a day to several days later. Also varies on how soon the ride is needed, 24 hours versus 2 weeks away.	Specialized
Volunteer driver rides are generally confirmed on the same day but not instantly. Minibus rides are generally confirmed instantly.	Specialized
We let them know that the ride is booked but then call again to give them the information as to who the driver will be closer to the date.	Specialized
Within a couple of hours	Specialized

Next, participants were questioned about their use of software for ride scheduling. They were asked whether they employed software, the specific software used, and their recommendations or concerns about the software. The responses provided valuable insights into the landscape of software use among the participating service providers.

The use of software for scheduling was first examined, and the findings are presented in Figure 6.12. The results indicate that a majority of general transit agencies, specifically 62%, reported employing software for scheduling. In contrast, the use of software for scheduling was less prevalent among specialized mobility service providers, with 44% indicating its use, and transit service providers from tribal aging programs, with 43% using such software. Among the agencies that employed software, various software solutions were mentioned: Assisted Rides, Ecolane, PC Tran, Mediroutes, Cabmate/Arcus, RouteMatch, and SchedulesPlus/My Senior Center. Participants provided recommendations and feedback on the software they used. Positive remarks were made about Assisted Rides, Ecolane, and PCTrans, highlighting their ease of use, reliability, and responsive customer support. However, some concerns were raised about certain software, such as PC Trans, regarding poor support and lack of web-based functionality. Overall, the responses reflect a range of experiences and opinions regarding the software used for ride scheduling, with some agencies highly recommending their chosen software solutions while others continue to explore alternatives.

According to the provided specific comments, Table 6.4 summarizes each software for ride scheduling mentioned by respondents. The results show that Assisted Rides was the most frequently mentioned software, with ten respondents recommending it. It was praised for its ease of generating reports, suitability for rural areas, and reasonable pricing. Ecolane and PC

Tran were also mentioned by five respondents each and received positive recommendations.

An internally built database was mentioned once and considered a beneficial solution.

Mediroutes and Cabmates/Arcus, despite having some issues and problems, received a positive recommendation. Routematch, with its customization options and suitability for agencies with larger fleets, was mentioned by four respondents. Other software solutions such as SchedulesPlus, Route Coordinator, Tier, TransitExec 85.12 system, Trapeze, Volunteer Driver Program-FileMaker Shared Ride Taxi-Service, a self-developed program, and SignUp were mentioned by a few respondents and were generally recommended.

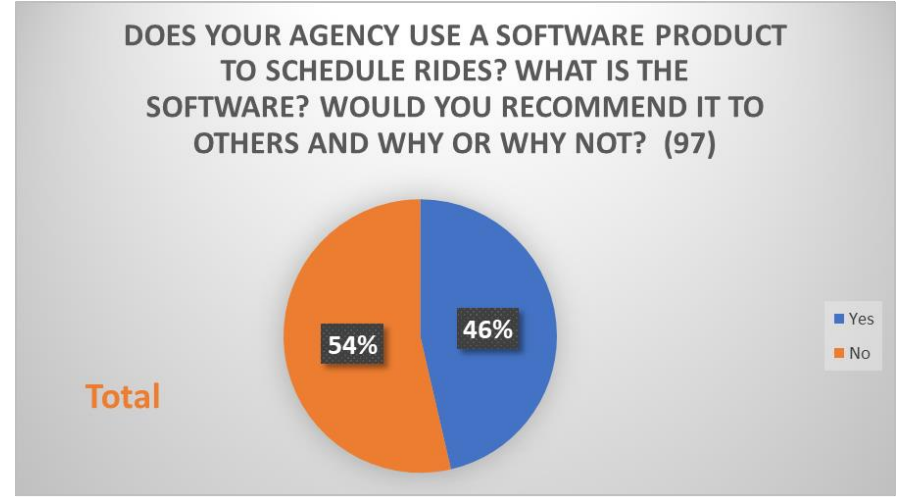
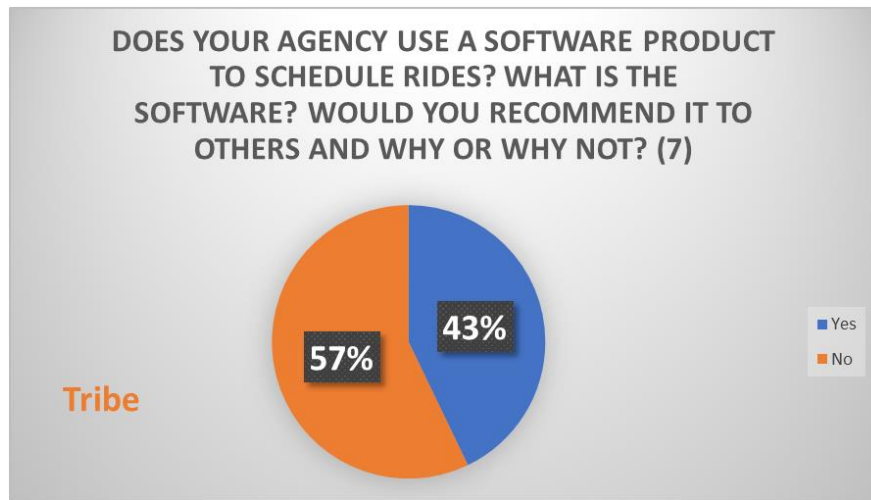
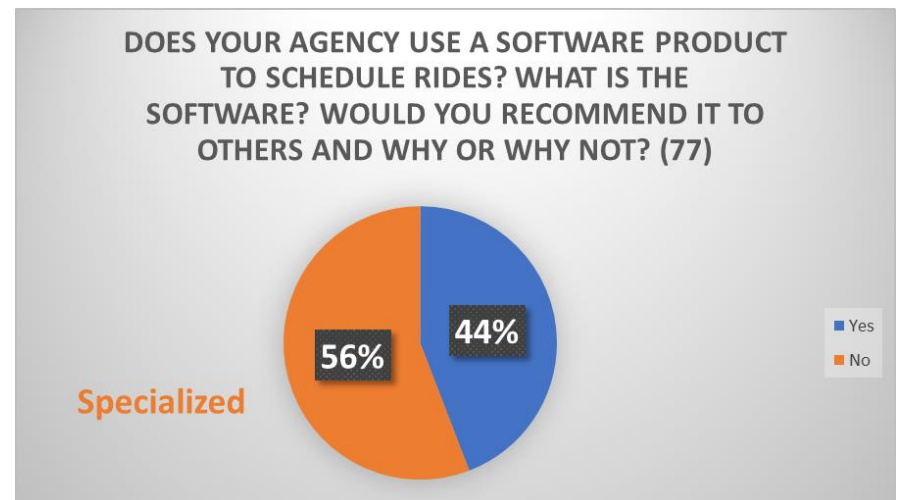
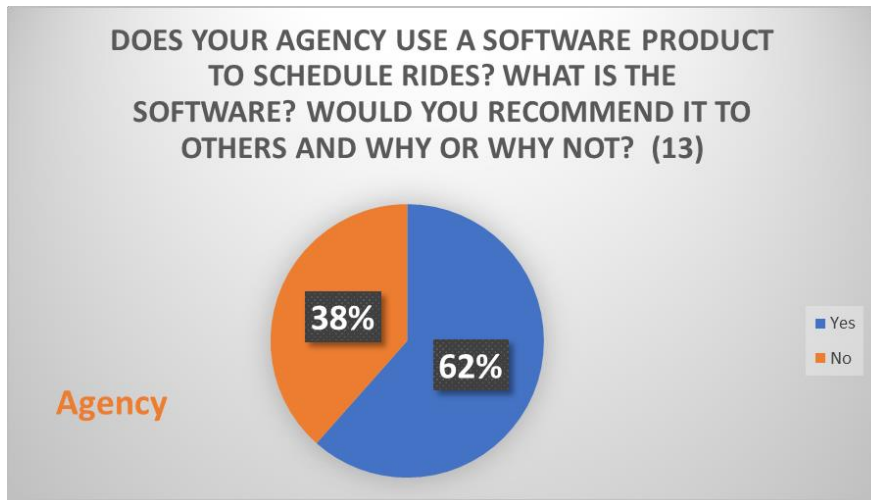


Figure 6.12: Software usage by agencies.

Table 6.4: Summary of Each Mentioned Software for Ride Scheduling in the Survey Responses

Software	Frequency	Recommended?	Key features
Assisted Rides	10	Yes	Easy do report / rural special / price reasonable
Ecolane	5	Yes	System good
PC Tran	5	Yes	-
Internally built database	1	Yes	-
Mediroutes and Cabmates/Arcus	1	Yes	Fair share of issues and problems
Routematch	4	Yes	Larger fleet of vehicles
SchedulesPlus	1	Yes	-
Route Coordinator	1	Yes	-
Tier	1	Yes	-
TransitExec 85.12 system	1	Yes	-
Trapeze	1	Yes	App
Volunteer Driver Program-FileMaker Shared Ride Taxi-Service	1	Yes	-
self-developed program	1	Yes	-
SignUp	1	Yes	-

Then, the participants were asked about the mobility management services performed by their respective agencies, and the results are presented in Figures 6.13 and 6.14. The findings indicate variations in the types of services offered across different agency types. For general transit agencies, coordinating funding, service, and programs as well as developing an inventory of transportation services were reported by all respondents. Conducting mobility needs assessments for seniors and trip planning were mentioned by 67% of respondents, while only 33% provided training for volunteer drivers. Notably, travel training for customers and transportation marketing were not mentioned by any respondents in this group. Specialized mobility service providers predominantly engaged in coordinating funding, service, and programs (78%) and providing training for volunteer drivers (59%). Approximately half of the

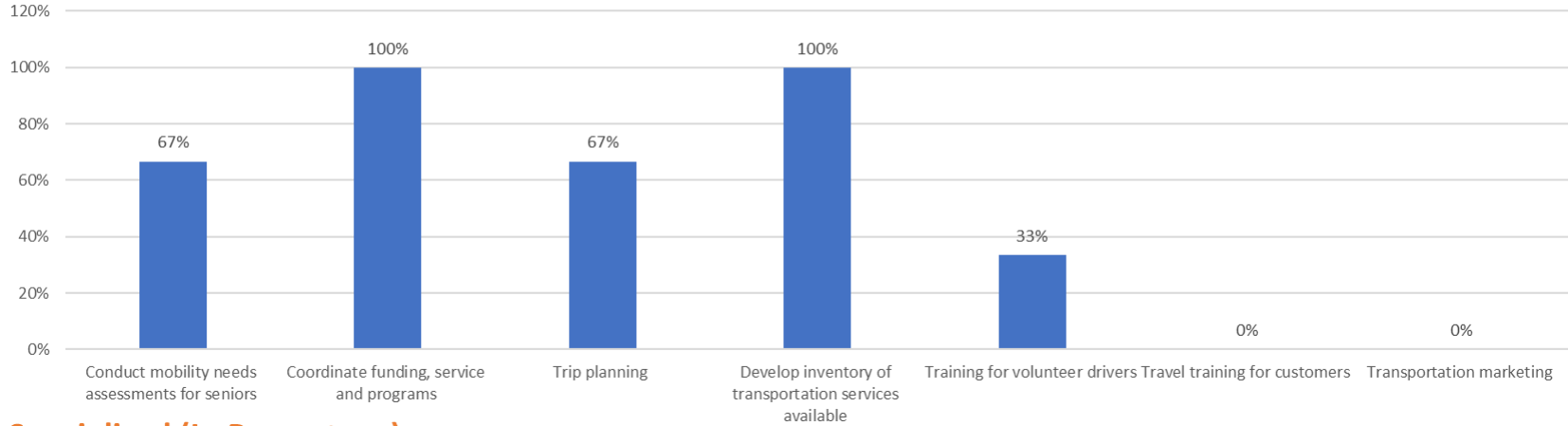
respondents reported conducting mobility needs assessments for seniors, trip planning, and developing an inventory of transportation services. Similar to general transit agencies, travel training for customers and transportation marketing were not mentioned by any respondents. Among service providers from tribal aging programs, 60% of respondents reported coordinating funding, service, and programs, with 40% conducting mobility needs assessments for seniors, trip planning, and developing an inventory of transportation services. Notably, no respondents in this group mentioned providing training for volunteer drivers, travel training for customers, or transportation marketing. Overall, the findings highlight the commonality of coordination of funding and service among agencies, with variations in other mobility management services such as needs assessments and trip planning.

Additional comments were also provided by some participants, summarized in Table 6.5. The comments reflect various mobility management services offered by the agencies. Results show that specialized service providers coordinate barrier removal initiatives such as bus stop improvements and technology for people with disabilities. Some participants from general transit agencies mentioned that their staff handles all aspects of mobility management as part of the transportation service, even without additional funding specifically allocated for it. Planning and coordination efforts between municipalities and non-profits were highlighted as well. Subsidized cross-county rides and providing durable medical equipment for loan free of charge were mentioned by specialized service providers. Additionally, some participants from general transit agencies mentioned their involvement in planning, providing technical resources, and assisting in administering funding programs. Other services mentioned included

consumer lending for vehicle acquisition, group training for various organizations, and providing transportation for non-emergency medical appointments both within and outside of town.

Agency (In Percentage)

WHAT MOBILITY MANAGEMENT SERVICE(S) DOES YOUR AGENCY PERFORM? (3)



Specialized (In Percentage)

WHAT MOBILITY MANAGEMENT SERVICE(S) DOES YOUR AGENCY PERFORM? (49)

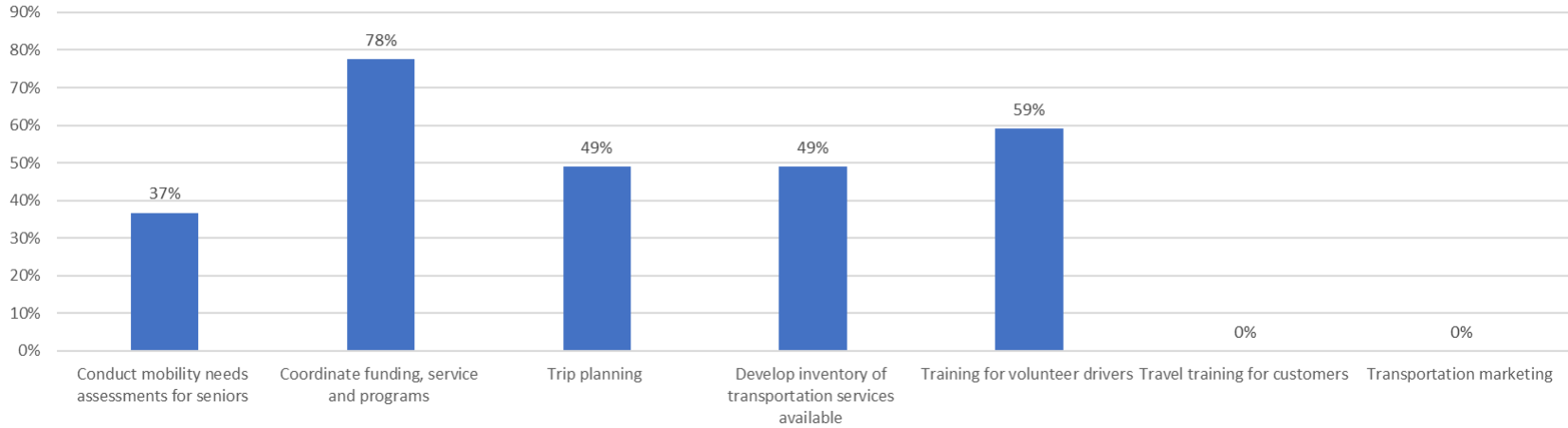
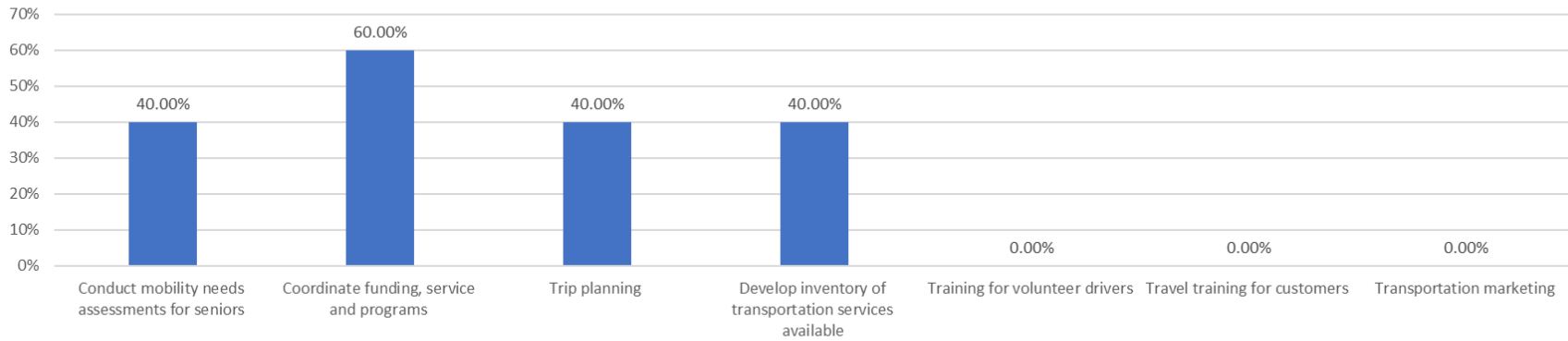


Figure 6.13: Mobility management services provided by agencies (General Transit and Specialized Mobility).

Tribe (In Percentage)

WHAT MOBILITY MANAGEMENT SERVICE(S) DOES YOUR AGENCY PERFORM? (5)



Total (In Frequency)

WHAT MOBILITY MANAGEMENT SERVICE(S) DOES YOUR AGENCY PERFORM? (57)

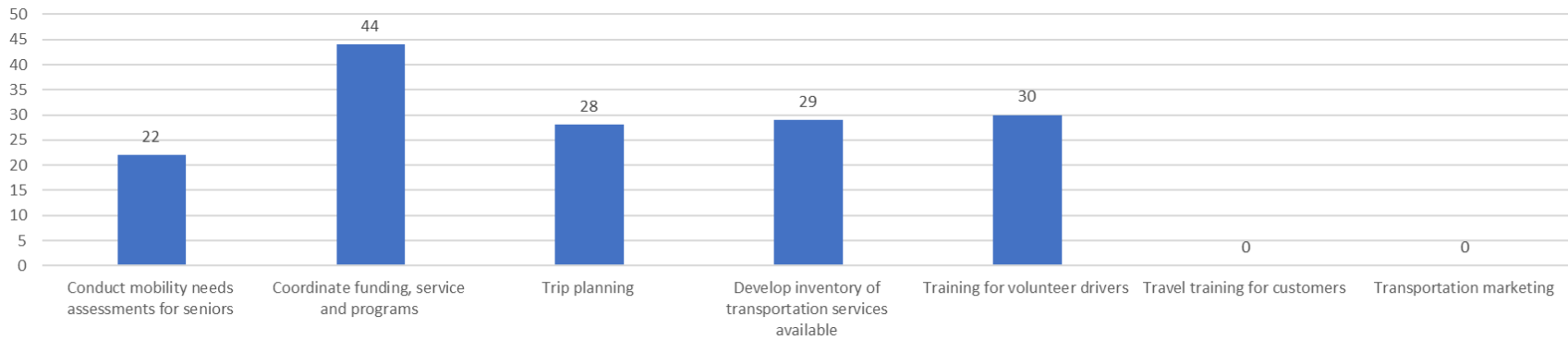


Figure 6.14: Mobility management services provided by agencies (Tribal Aging Program and Total).

Table 6.5: Summary of Additional Comments on Mobility Management Services

Comments	Service Provider Type
Coordinate barrier removal (bus stop improvements, technology for people with disabilities)	Specialized
Our staff does all of the mobility management as part of the transportation service. We receive no additional funding for it.	Specialized
Planning/Coordinating between municipalities and non-profits	Specialized
Subsidized cross-county rides.	Specialized
We offer durable medical (walkers, wheelchairs, and canes) for loan free of charge	Specialized
We provide planning and technical resources. Also, we help administer the competitive process for FTA 5310 funding.	Specialized
Wnw (Work-n-Wheels auto loan program) for clients still working and need to get to work. Consumer lending that allows retired clients to obtain small loan for vehicle.	Specialized
Group training for agencies, schools, businesses etc. Training for Volunteers is conducted by our rural supervisor, not the Mobility Manager.	Agency
Provide transportation for non-emergency in and out of town medical appointments	Agency

The last question within this topic asked participants how they share information about their agency's transportation services with their clients. The results, presented in Figures 6.15 and 6.16, highlight the various communication channels used by different types of service providers.

For general transit agencies, brochures and websites were the most common methods of sharing information, with 92% and 100% of respondents selecting them, respectively. Social media and newsletters were also used by a significant number of agencies, with 77% and 38% selecting them, respectively. Email and distribution through religious or social service

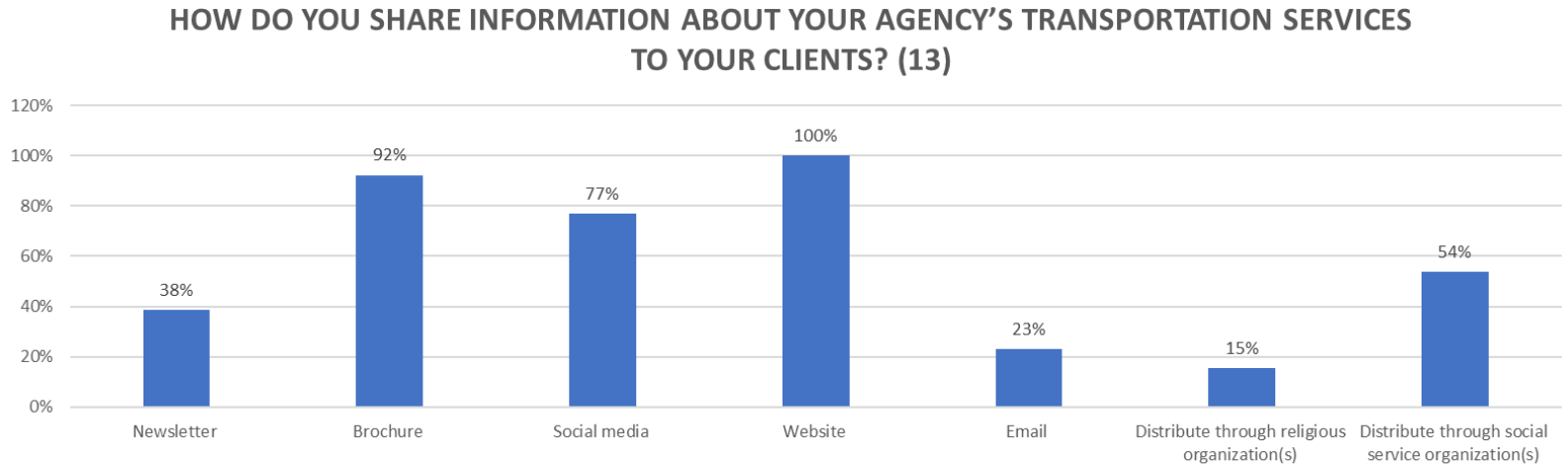
organizations were less commonly used methods. Among specialized mobility service providers, brochures and websites were again popular choices, with 77% and 87% of respondents selecting them, respectively. Social media and newsletters were also commonly used, with 71% and 63% selecting them, respectively. Similar to general transit agencies, email and distribution through religious or social service organizations were less commonly used methods. In the case of service providers from tribal aging programs, websites were the most prevalent method of sharing information, with 86% of respondents selecting them. Brochures, social media, and newsletters were also used by a significant number of agencies, with 57%, 71%, and 29% selecting them, respectively. Email and distribution through religious or social service organizations were less commonly used.

Overall, the results demonstrate that brochures, websites, social media, and newsletters are commonly employed by service providers to share information about their transportation services. These channels serve as effective means of communication to reach their respective client bases and ensure that crucial transportation information is readily accessible.

Additional comments were also collected from the respondents presented in Table 6.6. Results showed that service providers employ a variety of additional methods to share information about their agency's transportation services. These methods include advertising on the radio and in newspapers, distributing annual resource guides and directories, placing brochures at clinics and mailing them to nursing homes and assisted living organizations. Service providers also use community networks, client referrals, grocery bag stuffers, and collaborate with health and human services organizations and Aging and Disability Resource Centers (ADRCs). They engage in in-person communication and verbal discussions with family

members, as well as establish partnerships with libraries, senior centers, and local newspapers. Some providers use media releases, advertisements in movie theaters, and promote their services through community presentations and education programs. They leverage other programs such as Meals on Wheels and actively participate in local organizations and agencies, while also benefiting from word-of-mouth referrals. Municipalities often feature the transportation services on their websites and provide brochures at city hall. These various strategies help ensure that information reaches the intended audience and raises awareness about available transportation services in the community. Table 6.7 provides a brief summary of the additional comments based on the categorizations by the project team.

Agency (In Percentage)



Specialized (In Percentage)

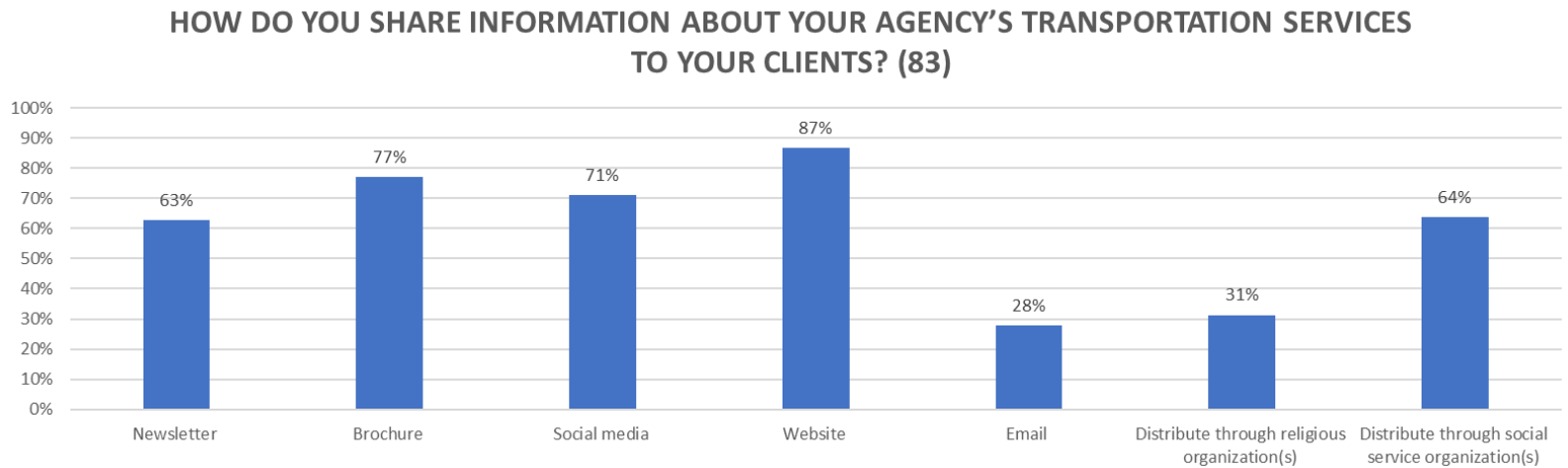
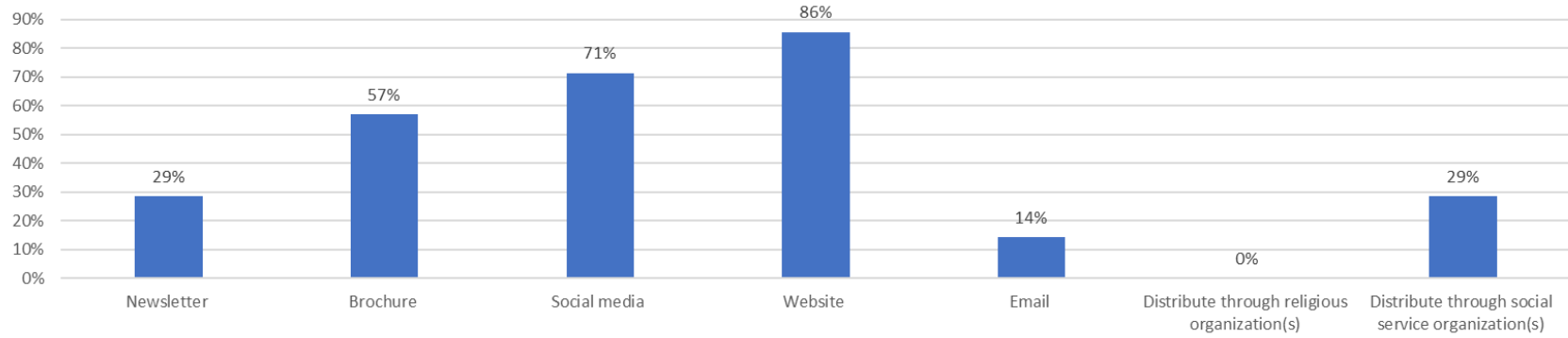


Figure 6.15: Methods of sharing information about transportation services to clients (General Transit and Specialized Mobility).

Tribe (In Percentage)

HOW DO YOU SHARE INFORMATION ABOUT YOUR AGENCY'S TRANSPORTATION SERVICES TO YOUR CLIENTS? (7)



Total (In Frequency)

HOW DO YOU SHARE INFORMATION ABOUT YOUR AGENCY'S TRANSPORTATION SERVICES TO YOUR CLIENTS? (103)

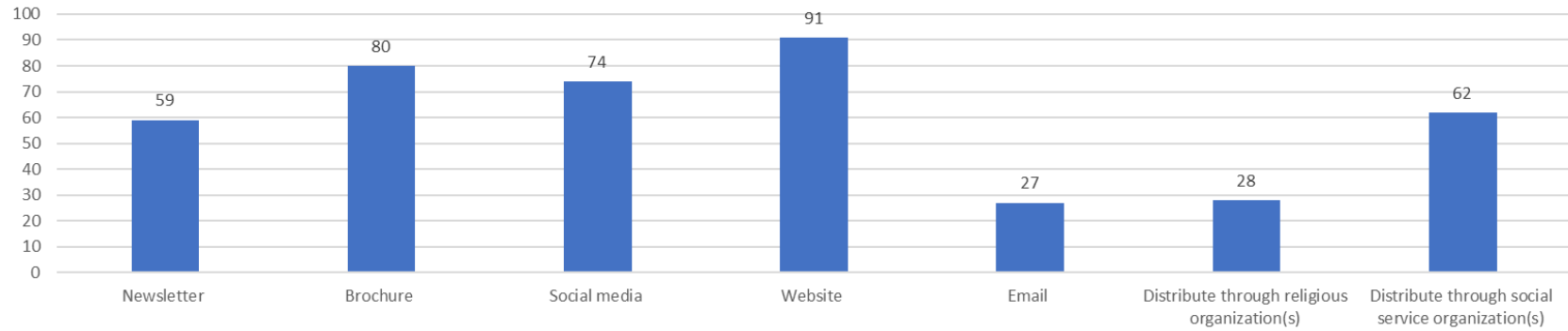


Figure 6.16: Methods of sharing information about transportation services to clients (Tribal Aging Program and Total).

Table 6.6: Additional Comments on Sharing Information about Transportation Services

Comments	Service Provider Type
Advertisement on the radio and in papers	Specialized
Annual Edition of a Transportation Resource Guide	Specialized
Annual Senior Resource Directory	Specialized
Brochures at clinics, mailings to nursing homes and assisted living organizations.	Specialized
Community network Client referrals	Specialized
Grocery bag stuffers	Specialized
Health and human services and ADRC	Specialized
In-person and verbally with family members	Specialized
Libraries, senior centers, etc.	Specialized
Local newspaper & shoppers guide	Specialized
Media Releases, ads	Specialized
Movie theaters	Specialized
Our transport service is a fixed route, so if there are any changes, they call our main line and leave a message and often times call the driver themselves to alert them to any change if the change occurs under 12-24 hours of the change.	Specialized
Promotion in our local newspaper	Specialized
Radio Ads and Newspaper Ads	Specialized
Through community presentations and education of our service to senior stakeholders like ADRC, Senior Centers, Senior housing, senior meal sites, senior care centers, healthcare providers, other community agencies, etc.	Specialized
Through other programs such as Meals on Wheels	Specialized
We are listed in all the resource and referral guides throughout our service area. Our clients are referred to us through the Aging and Disability Resource Center and the Department of Human Services.	Specialized
We have a Senior Resource Guide that is distributed County-wide	Specialized
Whoever invites us to speak to their group or agency, we're willing. We are part of many local organizations within our city/county/state.	Specialized
With the exception of 2020 we regularly go out and do transportation information presentations at lunch meetings, Learning in Retirement classes, and at nursing homes.	Specialized
Word of Mouth and MCO's	Specialized
Word of mouth, local aging unit, We are in the process of updating our brochure.	Specialized
Municipalities also have on their website and copied brochures at city hall	Agency

Table 6.7: Summary of Information Sharing Methods

Type of Information Sharing	Frequency
Newspaper	3
Radio	2
Annual Senior Resource Directory	2
Health and human services and ADRC	2
Senior center	2
Word of Mouth	2
Papers	1
Brochure	1
Community network clients' referrals	1
Grocery bag stuffers	1
In-Person	1
Libraries	1
Shoppers's guider	1
Movie Theaters	1
Post cards	1
Meals on Wheels	1
Lunch meeting	1
MCO's	1
Aging unit	1

6.3 Survey Topic: Observed Travel Pattern of Users

In the older adults' survey questionnaire, information about travel patterns was collected. However, considering possible biases from samples, a similar series of questions were also included in the agency survey questionnaire. This survey topic provided the results of such returned responses. Its purpose was to analyze the percentage of clients' trip purposes, explore how health concerns affect travel, and investigate changes in transportation services due to the COVID-19 pandemic. By gathering open comments, it captured seniors' adaptations during the pandemic. The section also examined broader impacts, such as ridership, cost, revenue, and supplemental services. These insights inform service planning and decision-making to ensure reliable and responsive transportation for older adults.

The service providers were first asked about the trip purposes of their clients in a typical month. The findings revealed the percentage distribution of clients' trip purposes, presented in Figures 6.17 and 6.18. According to the responses from three different types of service providers, some interesting patterns emerged. First, responses by participants from general transit agencies indicated that job or volunteer activities were the most common trip purpose for their clients, with 61-80% of the time being selected by 45% of respondents. Hospital/medical office visits and buying groceries were also significant trip purposes, with 41-60% of the time being selected by 25% and 25% of respondents, respectively.

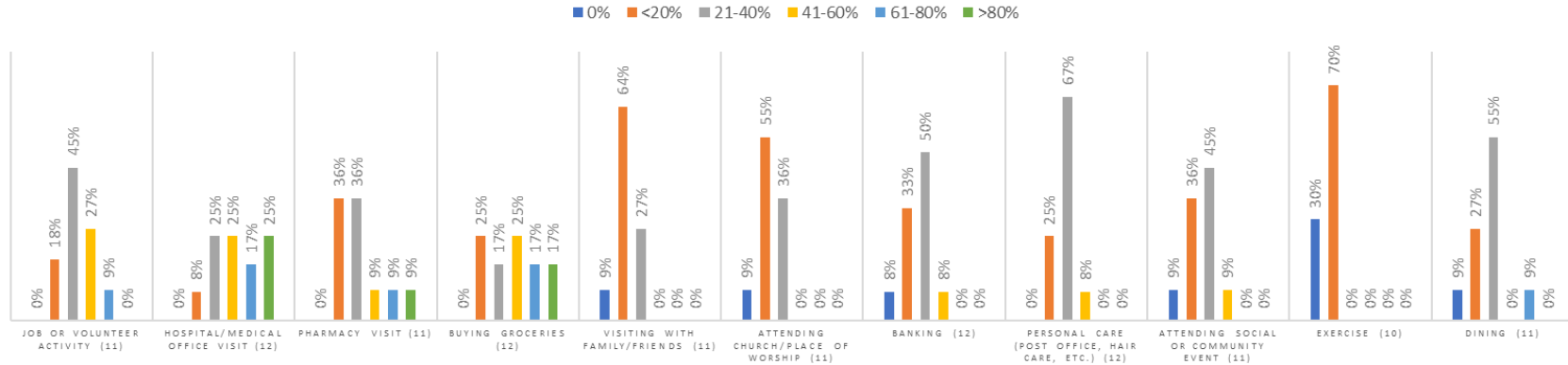
Next, responses by specialized mobility service providers showed that hospital/medical office visits were the most frequent trip purpose for their clients, with 21-40% of the time being reported by 40% of respondents. Additionally, visiting family/friends and buying groceries were also common trip purposes, with less than 20% of the time being selected by 51% and 22% of respondents, respectively.

Last, responses by participants from tribal aging program highlighted pharmacy visits as the most prevalent trip purpose for their clients, with less than 20% of the time being selected by 57% of respondents. Hospital/medical office visits and buying groceries were also significant trip purposes, with 21-40% of the time being selected by 57% and 43% of respondents, respectively. The data suggests that access to job or volunteer activities, healthcare facilities, grocery stores, and social visits are crucial for these clients.

These findings can help service providers in designing and optimizing their transportation services to better meet the needs of their clients, ensuring efficient and convenient mobility options.

Agency (In Percentage)

IN A TYPICAL MONTH, APPROXIMATELY WHAT PERCENT OF YOUR CLIENTS HAVE THE FOLLOWING TRIP PURPOSES? (12)



Specialized (In Percentage)

IN A TYPICAL MONTH, APPROXIMATELY WHAT PERCENT OF YOUR CLIENTS HAVE THE FOLLOWING TRIP PURPOSES? (80)

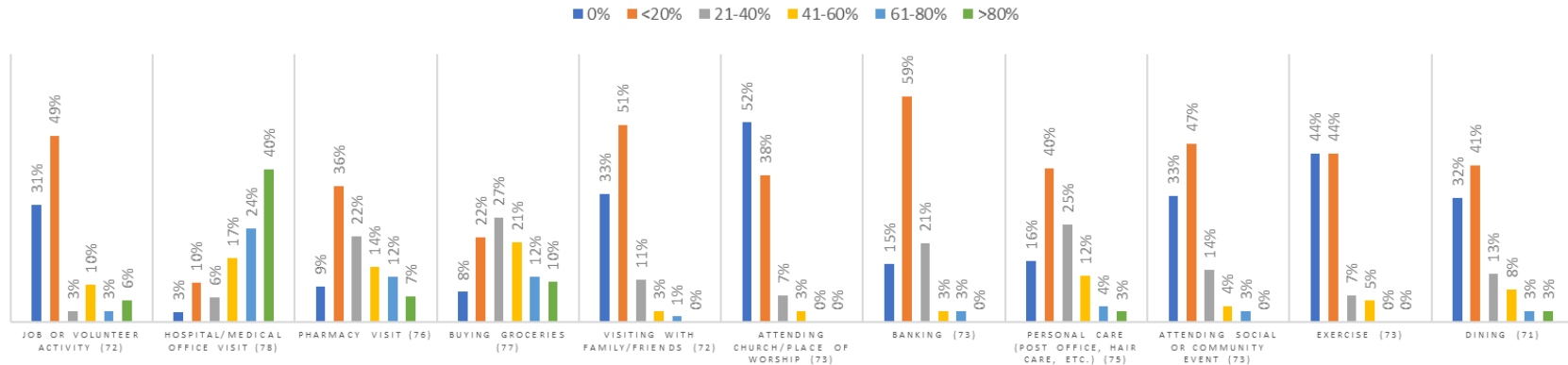
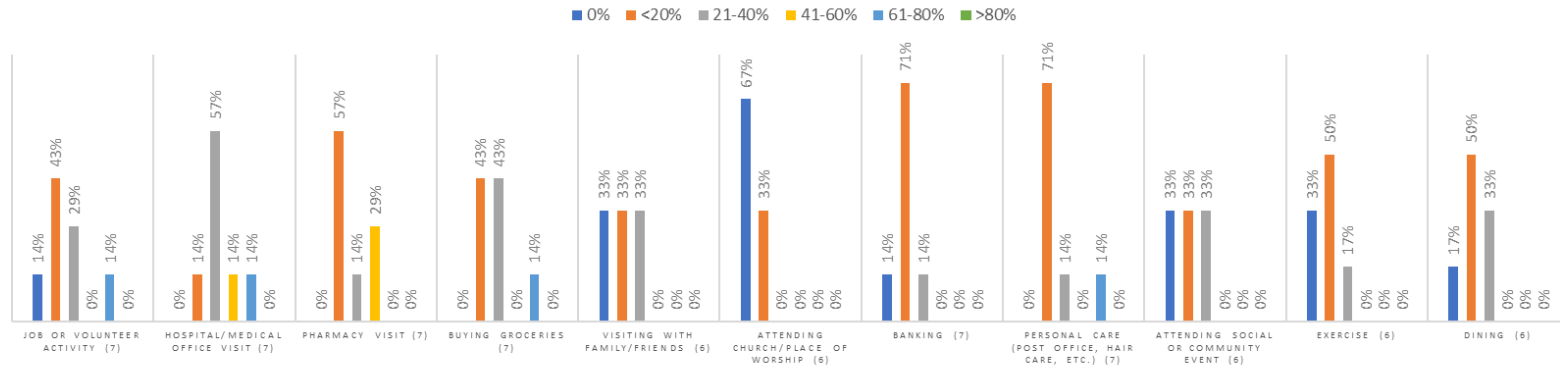


Figure 6.17: Perceived/Observed percentage distribution of clients' trip purposes (General Transit and Specialized Mobility).

Tribe (In Percentage)

IN A TYPICAL MONTH, APPROXIMATELY WHAT PERCENT OF YOUR CLIENTS HAVE THE FOLLOWING TRIP PURPOSES? (7)



Total (In Frequency)

IN A TYPICAL MONTH, APPROXIMATELY WHAT PERCENT OF YOUR CLIENTS HAVE THE FOLLOWING TRIP PURPOSES? (99)

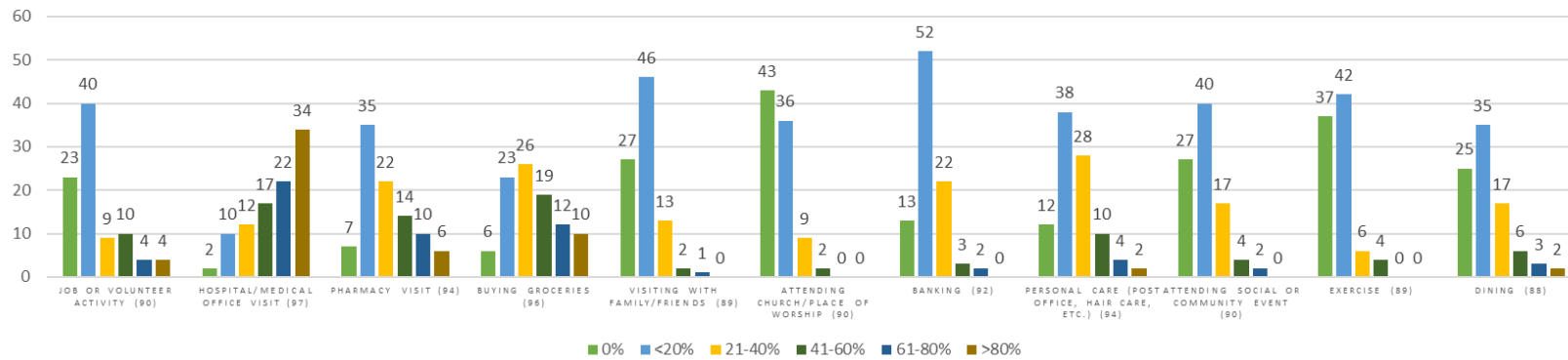


Figure 6.18: Perceived/Observed percentage distribution of clients' trip purposes (Tribal Aging Program and Total).

Following the assessment of trip purposes, participants were further queried regarding the impact of health concerns on their clients' ability to travel. The obtained estimates are illustrated in Figures 6.19 to 6.21. These figures provide insights into the frequency with which specific health issues affect the mobility of clients.

First, participants from general transit agencies reported that their clients often experienced cognitive difficulties (36% selected sometimes), followed by substantial difficulty walking or climbing steps (27% selected fairly often). Hearing and visual impairments were less frequently reported as affecting travel, with 30% and 30% of respondents selecting sometimes for deafness or difficulty hearing and blindness or difficulty seeing, respectively. The majority of respondents indicated that their clients do not have significant health concerns affecting their ability to travel.

Second, specialized mobility service providers indicated that substantial cognitive difficulties were sometimes a barrier to travel for their clients, with 46% selecting sometimes. Substantial difficulty walking or climbing steps was also identified as a moderate concern, with 46% of respondents selecting fairly often. Hearing and visual impairments had a varying impact, with 41% of respondents selecting sometimes for deafness or difficulty hearing and 37% for blindness or difficulty seeing. The majority of respondents reported that their clients do not have significant health concerns affecting their ability to travel.

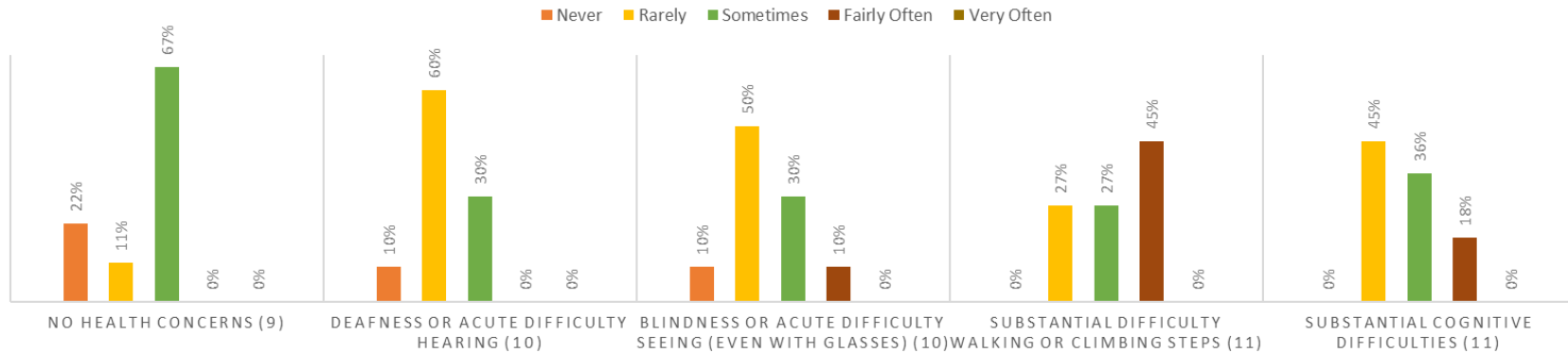
Last, participants from tribal aging programs highlighted that substantial difficulty walking or climbing steps sometimes affected their clients' ability to travel, with 57% of respondents selecting sometimes. Cognitive difficulties were also reported as a moderate concern, with 43% selecting sometimes. Hearing and visual impairments were less frequently

observed, with 29% of respondents selecting sometimes for deafness or difficulty hearing and 14% for blindness or difficulty seeing. The majority of respondents indicated that their clients do not have significant health concerns affecting their ability to travel.

These findings provide insights into the health concerns that may impact the mobility of clients served by different types of service providers. Understanding these challenges can assist in developing targeted strategies and services to accommodate the specific needs of individuals with varying health conditions, ensuring accessible and inclusive transportation options for all.

Agency (In Percentage)

HOW OFTEN DO THE FOLLOWING HEALTH CONCERNS AFFECT THE ABILITY OF YOUR CLIENTS TO TRAVEL? (12)



Specialized (In Percentage)

HOW OFTEN DO THE FOLLOWING HEALTH CONCERNS AFFECT THE ABILITY OF YOUR CLIENTS TO TRAVEL? (80)

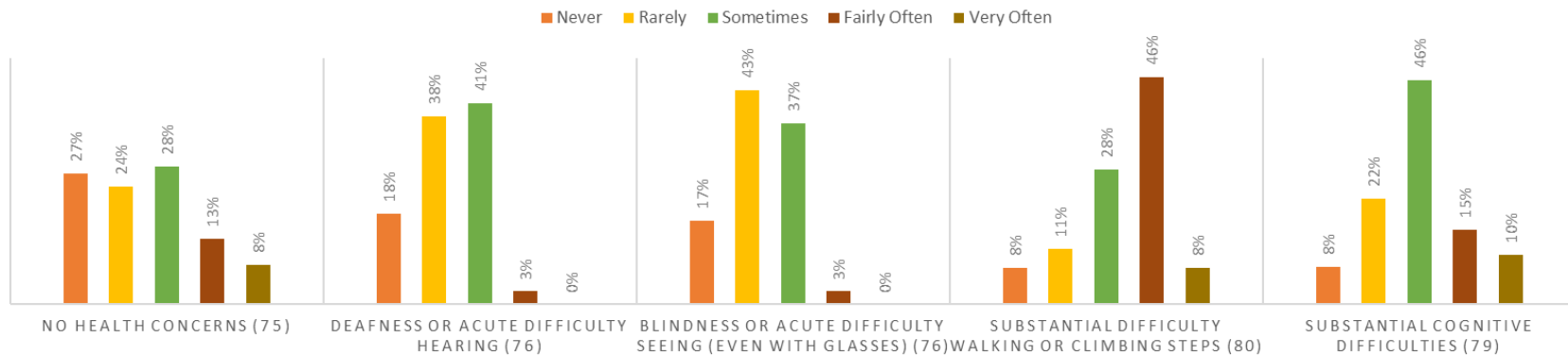
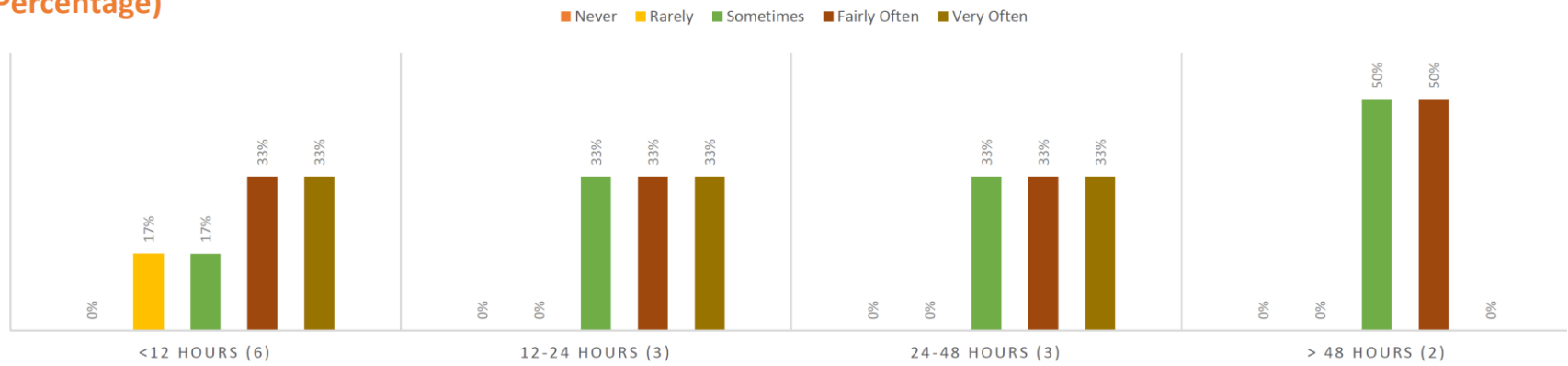


Figure 6.19: Perceived/Observed impact of health concerns on clients' ability to travel (General Transit and Specialized Mobility).

Q5 HOW FAR IN ADVANCE DO YOUR CLIENTS BOOK THE SERVICE? (6)

Tribe (In Percentage)



Total (In Frequency)

Q5 HOW FAR IN ADVANCE DO YOUR CLIENTS BOOK THE SERVICE? (77)

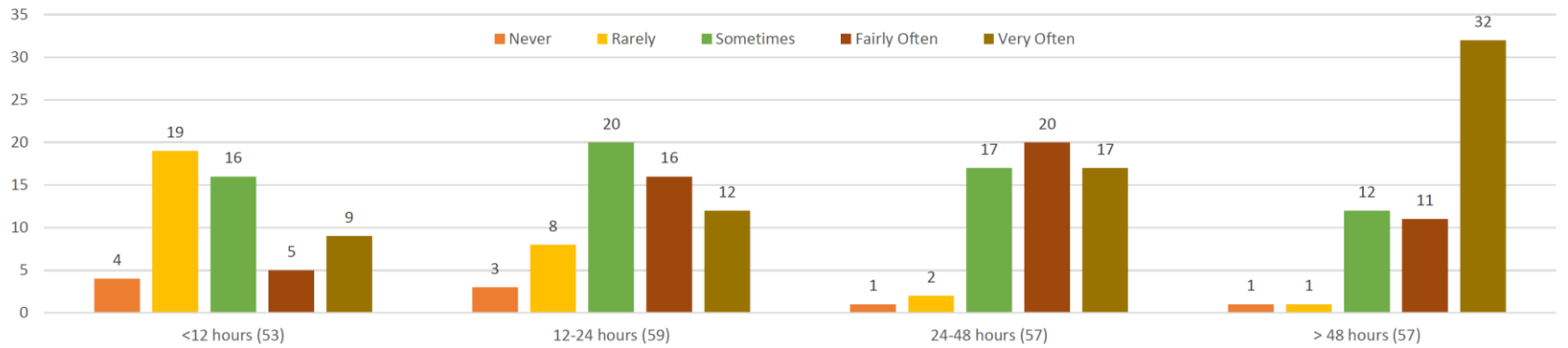


Figure 6.20: Perceived/Observed impact of health concerns on clients' ability to travel (Tribal Aging Program and Total).

HOW OFTEN DO THE FOLLOWING HEALTH CONCERNS AFFECT THE ABILITY OF YOUR CLIENTS TO TRAVEL?

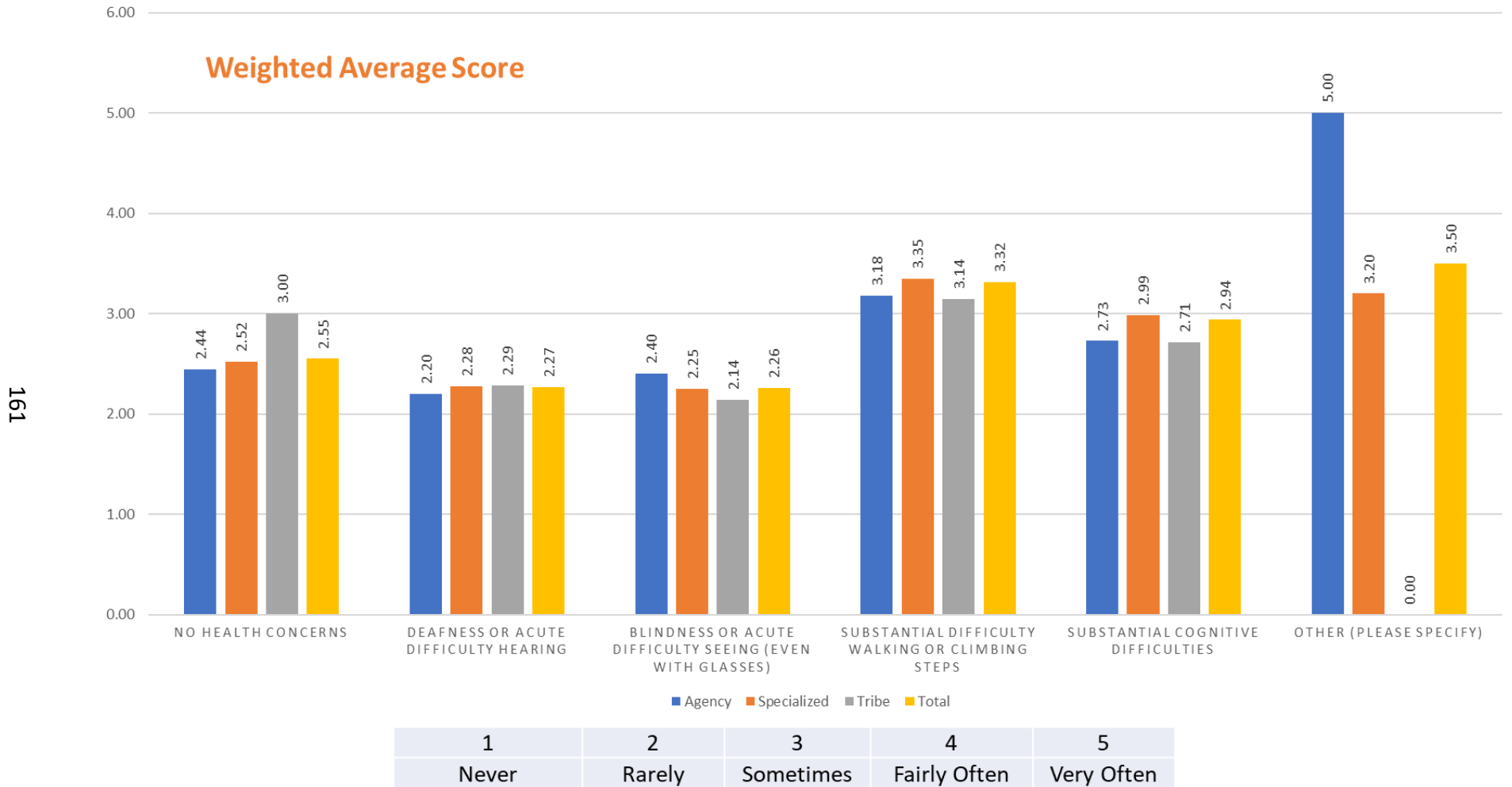


Figure 6.21: Perceived/Observed impact of health concerns on clients' ability to travel (Average Weighted Score).

Two additional questions were included in the survey to gather information from agencies about their observations on the potential impact of COVID-19. The first question focused on the travel patterns of older adults and sought to understand any changes in transportation service use. The second question aimed to capture the agencies' own experiences and assess the effects of the pandemic on various aspects such as ridership, cost, revenue, and the provision of special services. The specific questions are listed below:

1. How have senior riders changed their use of transportation services in response to the COVID-19 pandemic?
2. How have transportation services been changed (e.g., changes on ridership, cost, and revenue, supplement special service, etc.) in response to the COVID-19 pandemic?

Most service providers observed a decline in transportation service use by seniors, with fewer rides and a focus on essential appointments. Ridership decreases of 40% or more, or even temporary service suspensions, were common. Some seniors chose to stay home and rely on delivery services, while others depended on family or friends. Safety measures such as mask-wearing and social distancing were implemented, and seniors preferred riding with familiar drivers for security.

Transportation services have made changes, such as mask requirements, passenger limits, and suspending social outings. Essential trips and sanitation measures have become priorities. Ridership, revenue, and driver availability have decreased. Some services now offer free rides for COVID-19 vaccinations and alternative services like grocery delivery.

Financial challenges due to reduced ridership have been partially alleviated by federal funding.

6.4 Survey Topic: Perceived Satisfaction from Users

The third major survey topic delved into capturing the perspectives of service providers about service user satisfaction levels with local transportation services, as well as their opinions on important features that could benefit older adults. This section aims to gain insights from service providers about the attitudes and preferences of service users, with a specific focus on identifying key factors that contribute to overall satisfaction and identifying potential areas for improvement to better cater to the needs of older adults.

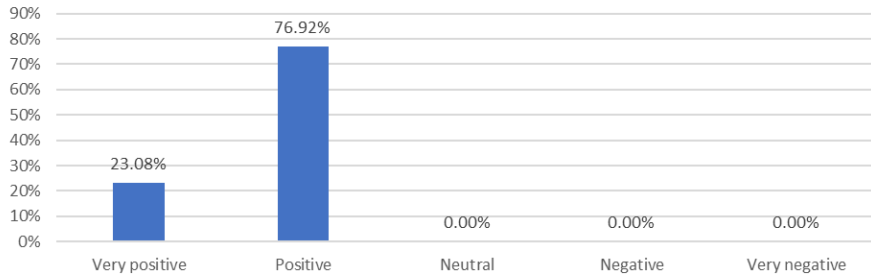
The findings regarding the perceived attitudes of clients, as reported by service providers, are presented in Figure 6.22. Overall, the prevailing sentiment towards transportation services is positive, indicating a generally satisfactory experience among service users. However, it is important to note that certain agencies within the specialized mobility services sector reported negative attitudes from their clients. This discrepancy warrants further investigation as no specific reasons were provided for these negative perceptions. To ensure high-quality transportation services for older adults, it is crucial to delve deeper into the underlying factors contributing to these findings and address any areas of concern.

Figures 6.23 to 6.25 illustrate the opinions on important features to older adults, which have been previously discussed in the older adult survey section. These figures reveal a consistent trend across the three types of service providers, with no significant variations observed. Detailed discussions on the disparities between the viewpoints of older adults and service providers have been provided, and as such, will not be reiterated here. However, it is worth emphasizing that these figures offer valuable insights into the areas where enhancements and improvements are necessary to better meet the specific needs and

preferences of older adults in transportation services. By focusing on these important features, service providers can work towards enhancing the overall experience and ensuring that transportation services are tailored to support older adults effectively in their mobility needs.

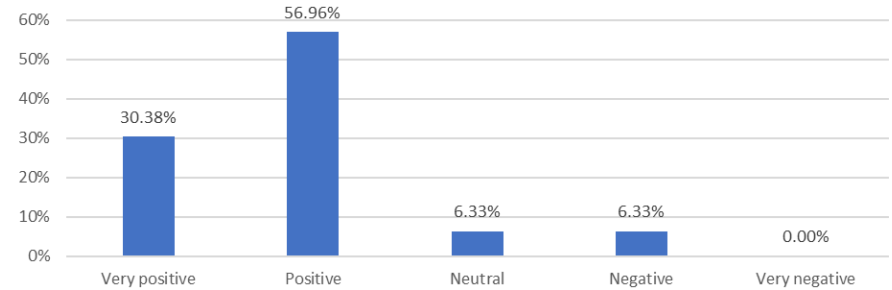
Agency (In Percentage)

IN GENERAL, HOW WOULD YOU RATE THE ATTITUDES OF YOUR CLIENTS TOWARDS TRANSPORTATION SERVICES IN YOUR COMMUNITY? (13)



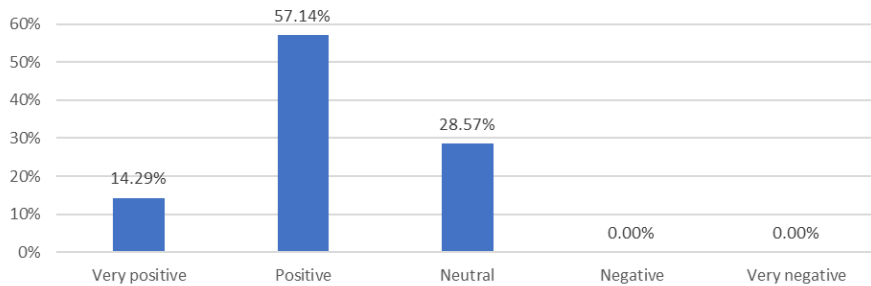
Specialized (In Percentage)

IN GENERAL, HOW WOULD YOU RATE THE ATTITUDES OF YOUR CLIENTS TOWARDS TRANSPORTATION SERVICES IN YOUR COMMUNITY? (79)



Tribe (In Percentage)

IN GENERAL, HOW WOULD YOU RATE THE ATTITUDES OF YOUR CLIENTS TOWARDS TRANSPORTATION SERVICES IN YOUR COMMUNITY? (7)



Total (In Frequency)

IN GENERAL, HOW WOULD YOU RATE THE ATTITUDES OF YOUR CLIENTS TOWARDS TRANSPORTATION SERVICES IN YOUR COMMUNITY? (99)

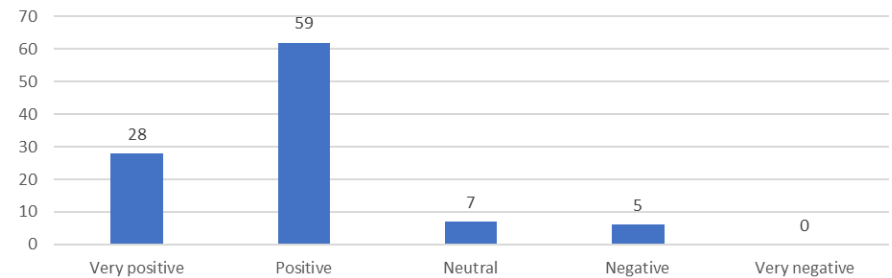
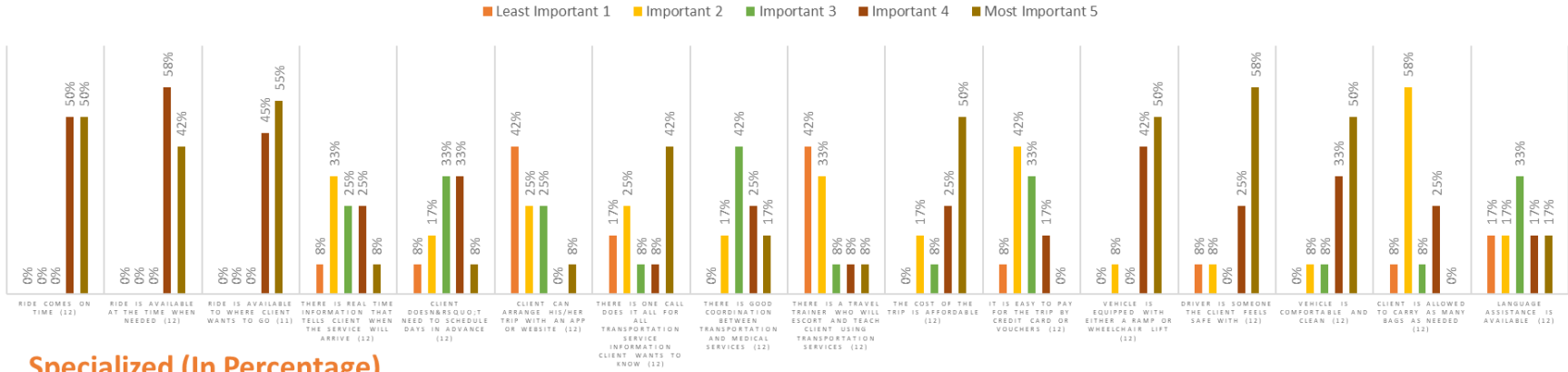


Figure 6.22: Perceived attitudes by clients from service providers.

IN YOUR OPINION, HOW IMPORTANT ARE THE FOLLOWING TRANSPORTATION FEATURES FOR SENIOR CLIENTS? (12)

Agency (In Percentage)



Specialized (In Percentage)

IN YOUR OPINION, HOW IMPORTANT ARE THE FOLLOWING TRANSPORTATION FEATURES FOR SENIOR CLIENTS? (82)

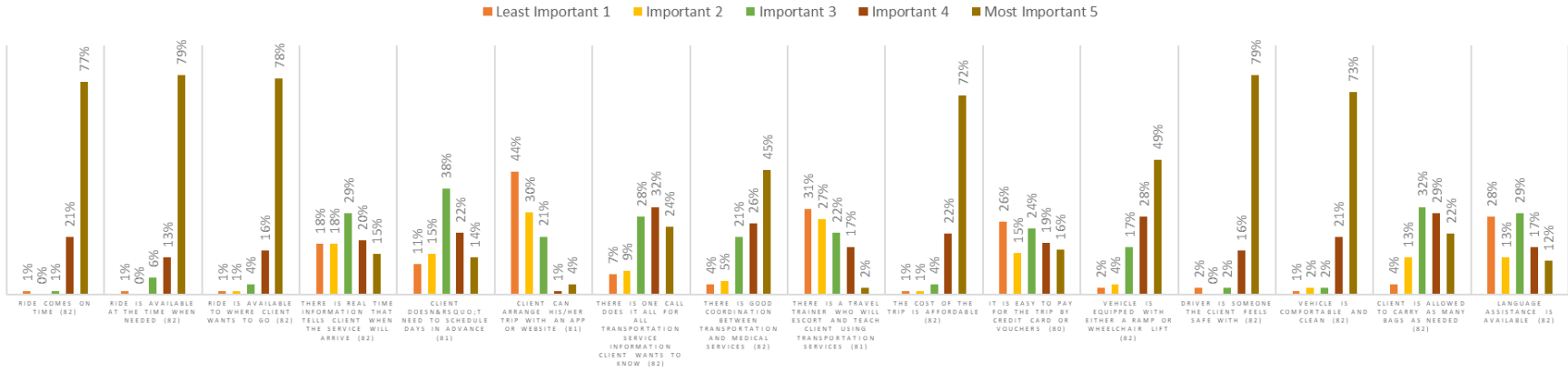
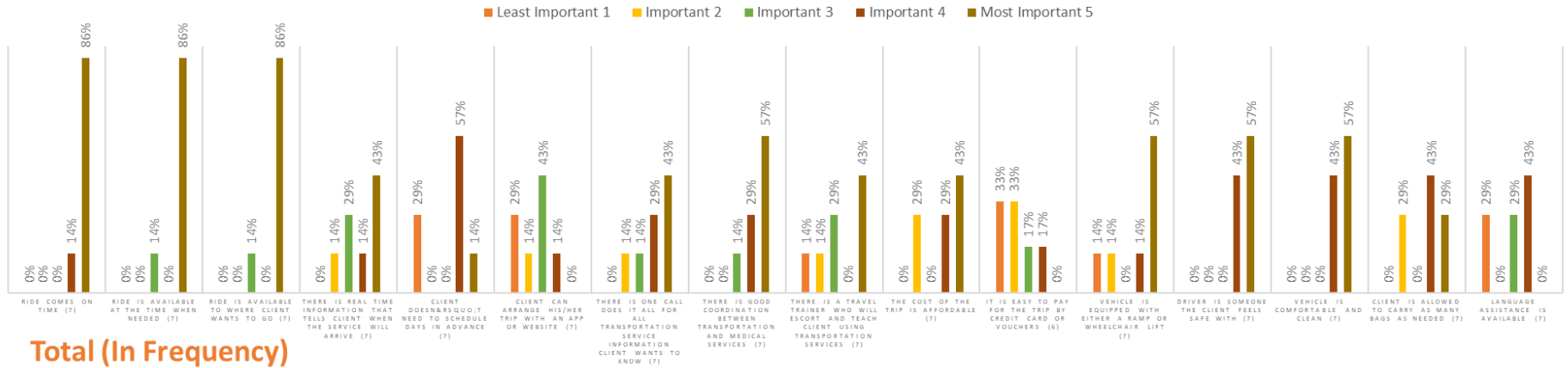


Figure 6.23: Important features of services to older adults (General Transit and Specialized Mobility).

Tribe (In Percentage)

IN YOUR OPINION, HOW IMPORTANT ARE THE FOLLOWING TRANSPORTATION FEATURES FOR SENIOR CLIENTS? (7)



Total (In Frequency)

IN YOUR OPINION, HOW IMPORTANT ARE THE FOLLOWING TRANSPORTATION FEATURES FOR SENIOR CLIENTS? (101)

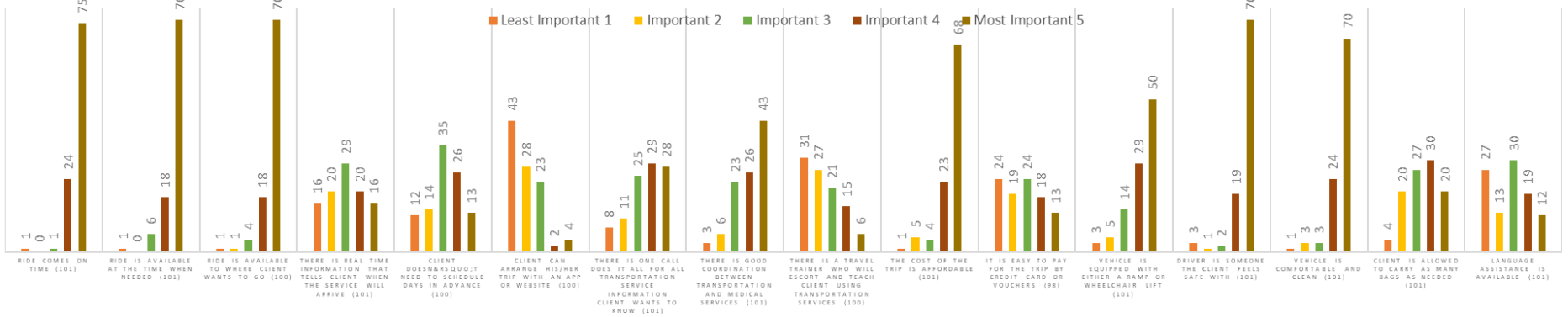


Figure 6.24: Important features of services to older adults (Tribal Aging Program and Total).

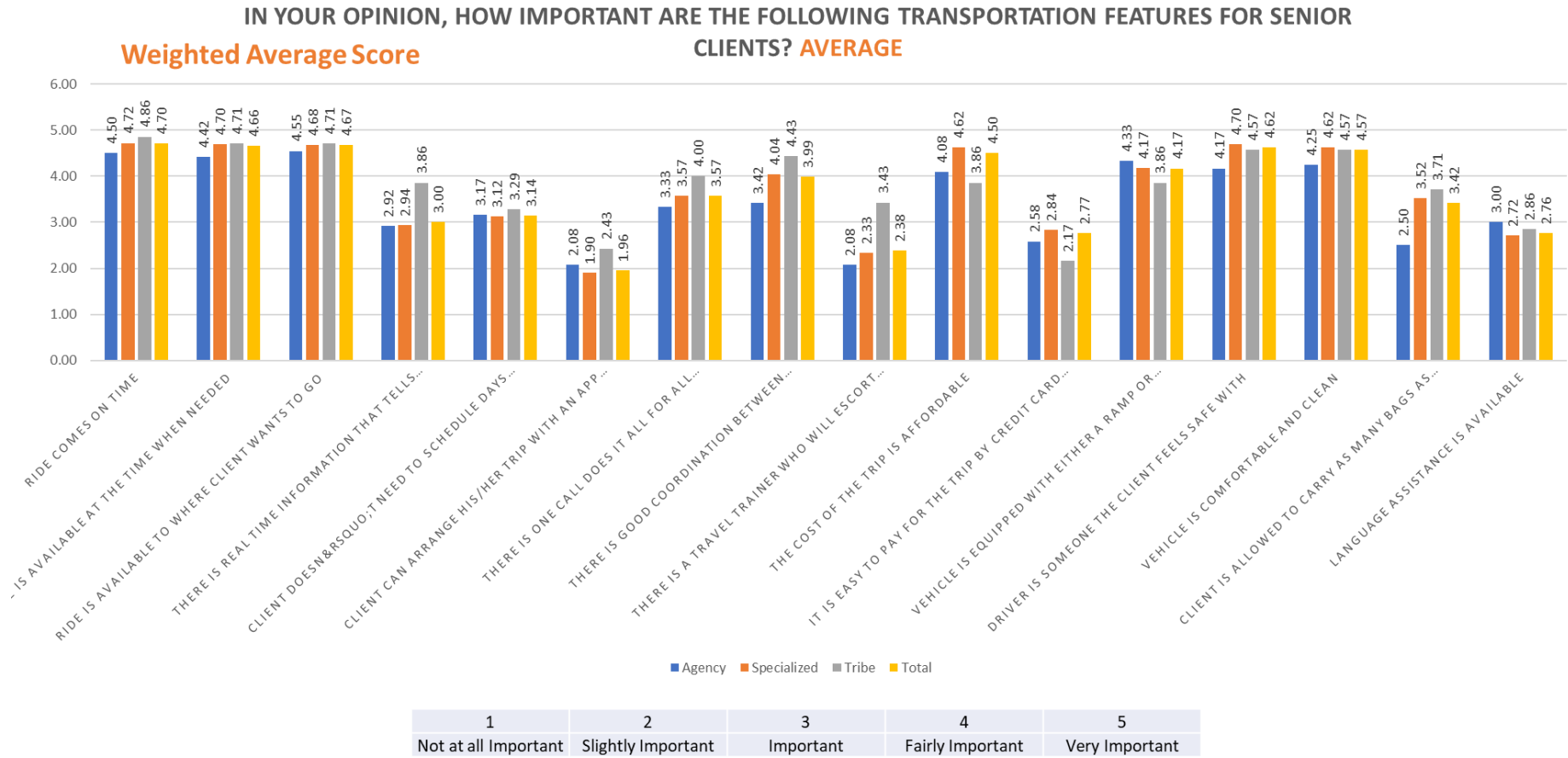


Figure 6.25: Important features of services to older adults (Weighted Average Score).

6.5 Survey Topic: Problems/Issues in Providing Services and Coordination

The fourth survey topic in the agency survey questionnaire delved into the challenges and issues encountered by service providers in their efforts to deliver transportation services and coordinate within their own organization or with other service providers. This section aims to identify the internal problems that service providers face, which may impede their ability to meet the needs of their clients effectively.

The results, presented in Figures 6.26 to 6.28, shed light on the key issues reported by service providers from different types of agencies. Notably, the top problems identified by the service providers can be summarized as follows, based on the criterion that more than 20% of respondents strongly agree, or more than 40% of respondents strongly agree plus agree:

For General Transit Agencies, the major concerns were a limited agency budget and a lack of available drivers. These limitations may hinder their ability to provide adequate transportation services and meet the demands of their clients.

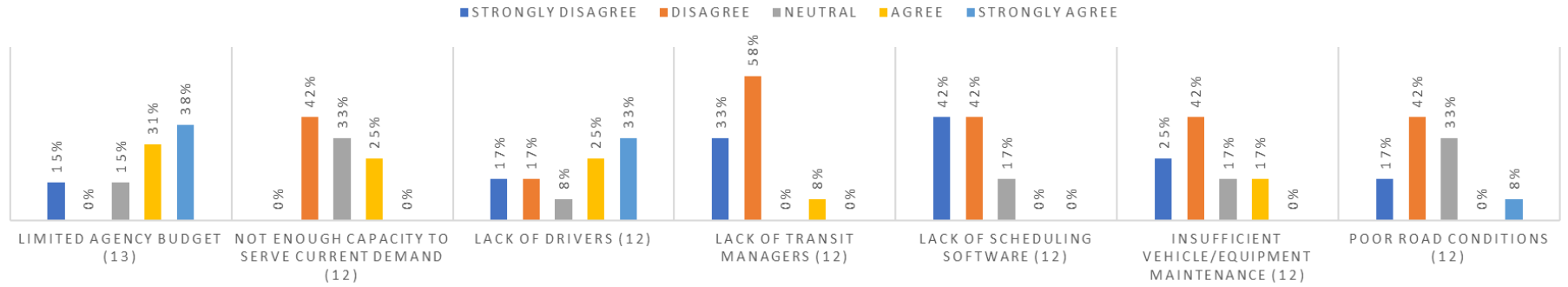
Specialized mobility service providers also faced challenges related to a shortage of drivers and limited agency budget. Additionally, they struggled with insufficient capacity to accommodate the current demand for their services. These issues may result in delays or difficulties in fulfilling transportation requests.

Service providers of tribal aging programs encountered a range of obstacles, including a shortage of drivers and insufficient capacity to meet the existing demand. They also faced challenges stemming from a lack of transit managers, poor road conditions, and limited budgetary resources. These combined factors contributed to the complexities faced by service providers in delivering transportation services to older adults and individuals in need.

Overall, the findings highlight a few recurring themes across the different types of agencies, with the lack of drivers, limited agency budget, and insufficient capacity to meet demand emerging as the most prevalent concerns. These challenges underscore the importance of addressing workforce and financial constraints, as well as improving capacity planning, to enhance the overall quality and accessibility of transportation services for older adults.

Agency (In Percentage)

WHAT PROBLEMS HAVE YOU EXPERIENCED IN PROVIDING TRANSPORTATION THAT MEETS YOUR CLIENT'S NEEDS? (13)



Specialized (In Percentage)

WHAT PROBLEMS HAVE YOU EXPERIENCED IN PROVIDING TRANSPORTATION THAT MEETS YOUR CLIENT'S NEEDS? (82)

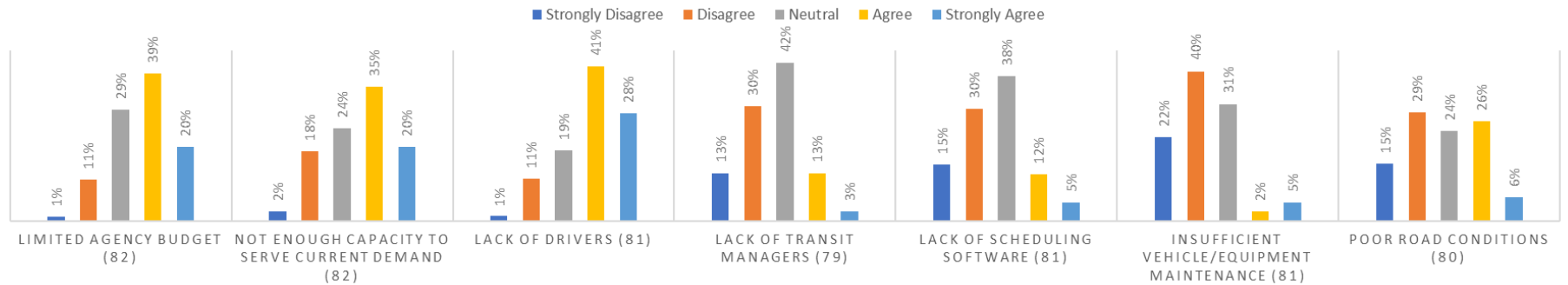
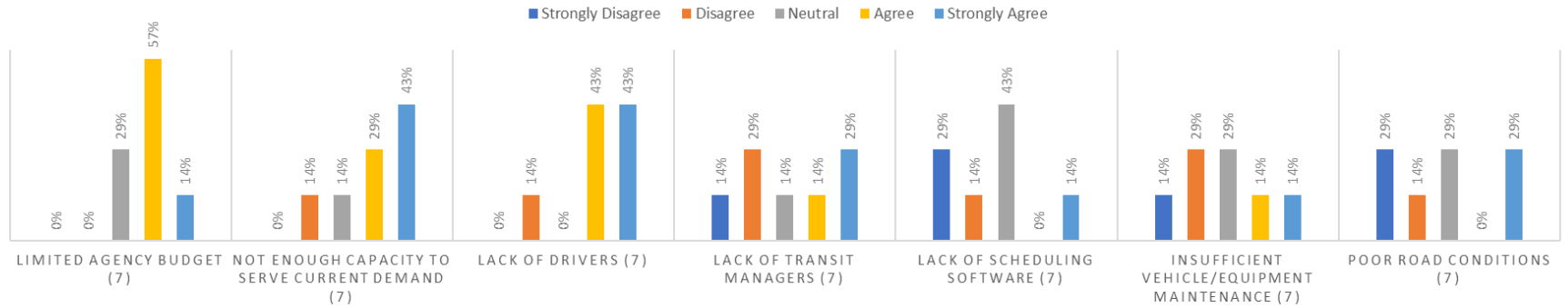


Figure 6.26: Problems experienced in providing transportation to meet client's needs (General Transit and Specialized Mobility).

Tribe (In Percentage)

WHAT PROBLEMS HAVE YOU EXPERIENCED IN PROVIDING TRANSPORTATION THAT MEETS YOUR CLIENT'S NEEDS? (7)



Total (In Frequency)

WHAT PROBLEMS HAVE YOU EXPERIENCED IN PROVIDING TRANSPORTATION THAT MEETS YOUR CLIENT'S NEEDS? (102)

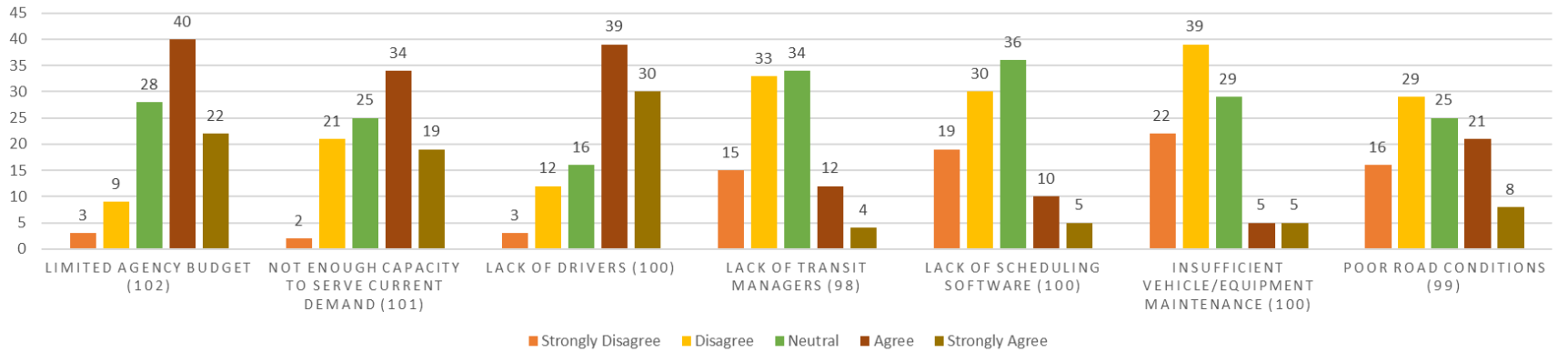


Figure 6.27: Problems experienced in providing transportation to meet client's needs (Tribal Aging Program and Total).

WHAT PROBLEMS HAVE YOU EXPERIENCED IN PROVIDING TRANSPORTATION THAT MEETS YOUR CLIENT'S NEEDS?

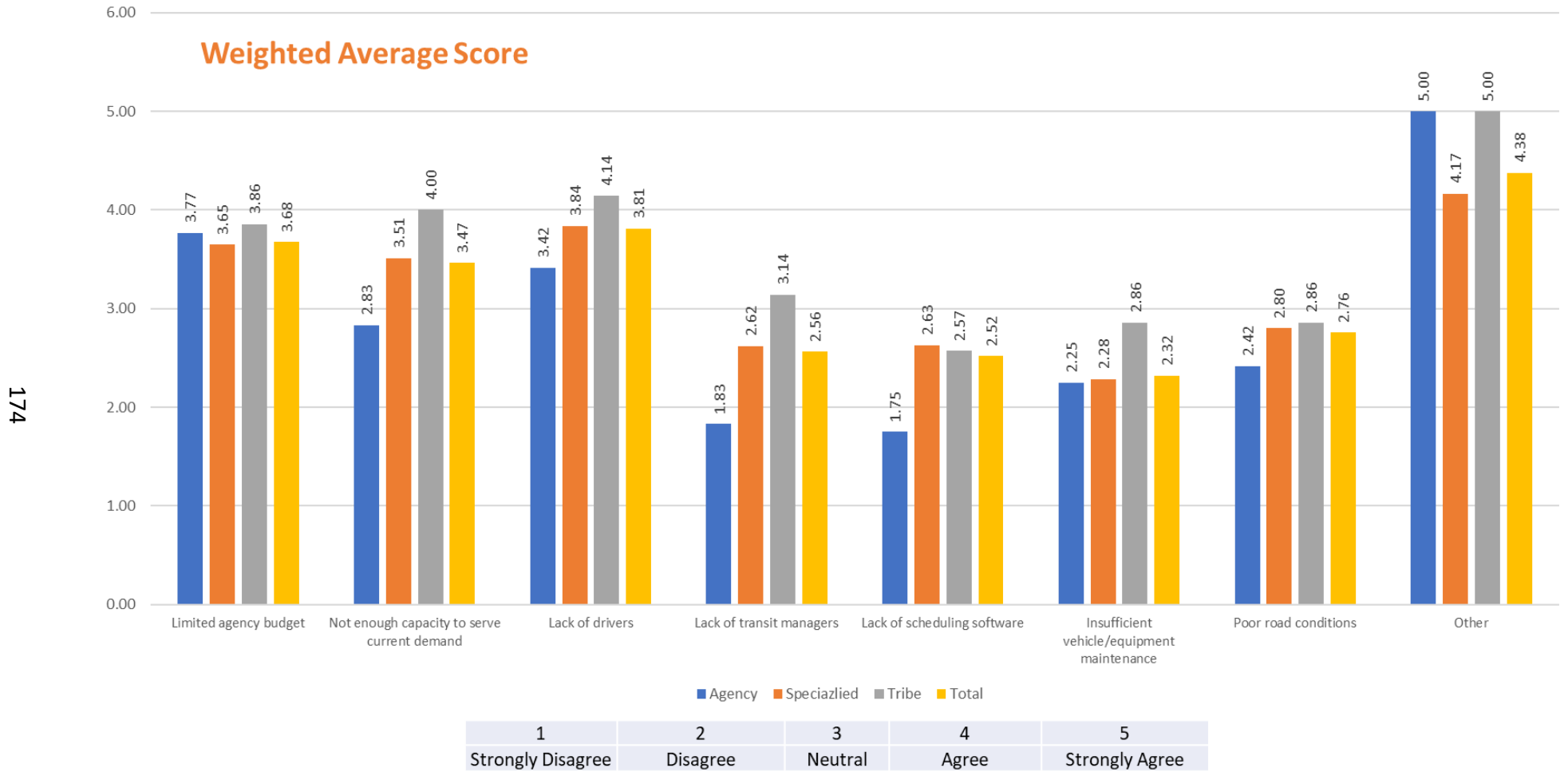


Figure 6.28: Average weighted score for problems experienced in providing transportation to meet client's needs.

Additional comments were also received from the participating service providers, highlighting some key challenges and issues faced in delivering transportation services (Table 6.8). These included concerns about inadequate transportation facilities, financial and geographic limitations, a lack of transportation options in rural communities, and limited vehicle availability. Service providers also mentioned the challenge of medical providers rescheduling or canceling appointments for frail elderly individuals, which can disrupt transportation arrangements. These comments shed light on the interconnected nature of transportation services and the need to address external factors that impact service delivery and accessibility for older adults.

Table 6.8: Additional Comments for Problems Experienced in Providing Transportation to Meet Client’s Needs

Comments	Attitude
Not adequate transportation facility	1(strongly agree)
Financial and geographic silos	1(strongly agree)
Lack of transportation offered in rural communities	2 (strongly agree, none)
lack of vehicles	1(strongly agree)
the medical providers rescheduling/cancelling a frail elderly person appointment	1(strongly agree)

Regarding coordination issues within their own organization or with other service providers, an open-ended question was included in the survey: "*What are the most significant transportation services coordination issues that your agency encounters?*" This question aimed to gather insights into the specific challenges faced by service providers in coordinating transportation services. Participants highlighted several significant transportation service

coordination issues encountered by their agencies. One major challenge identified was the lack of communication and coordination between agencies and facilities, including counties, other transportation service providers, and health providers. This lack of communication hinders the seamless flow of information and coordination necessary for efficient transportation services. Funding constraints were also identified as a significant issue, as agencies struggle to purchase new buses or expand services to accommodate all individuals in need. Limited availability and accessibility were mentioned, including a shortage of drivers, limited service areas, and inadequate transportation options for long-distance medical care or dialysis rides. Administrative factors such as territorial conflicts and regulations were cited as additional barriers that impede effective coordination efforts. Participants also emphasized the importance of knowledge and communication in addressing coordination challenges. Lack of knowledge about available transportation services among older adults and the absence of proper communication systems among service providers, older adults, and vehicle riders were highlighted as significant issues to be addressed.

6.6 Survey Topic: Suggestions/Plans for Improvement

The final survey topic in the agency survey questionnaire aimed to gather service providers' opinions and suggestions for ongoing or future improvements in transportation services. The first question within this topic asked service providers about transportation service improvements that they believe would benefit their senior clients. The results of responses to this question are presented in Figures 6.29 to 6.31.

The findings revealed key areas where service providers perceived improvements would be most beneficial to their senior clients. For general transit agencies, expanding existing services to enhance availability, implementing a centralized information service that provides comprehensive details about all available transportation options, improving guides that explain how to use local transportation services, and increasing marketing efforts for local transportation services were identified as crucial improvements.

Similarly, specialized mobility service providers emphasized the importance of expanding existing services for improved availability, establishing a one-call service that provides information about all available services and options, enhancing coordination between medical care and local transportation services, increasing marketing efforts, introducing ride vouchers or convenient payment options for regular users, and improving guides on using local transportation services.

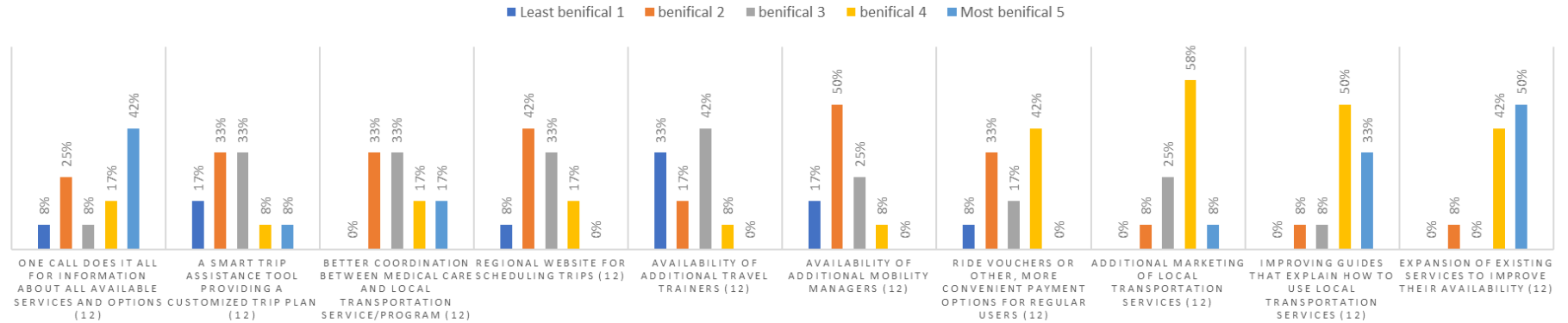
Service providers for tribal aging programs highlighted the need for a one-call service that provides comprehensive information about available services and options, expanding existing services to improve availability, better coordination between medical care and local transportation services, increasing marketing efforts, improving guides on using local transportation services, and introducing ride vouchers or more convenient payment options for regular users.

In addition to the responses, three additional comments were received. These comments emphasized the importance of marketing to aging and disability clients, the need for more drivers, and the significance of sustainable funding for transportation services.

Overall, these findings provide valuable insights into the suggestions and plans for improvements in transportation services as identified by the service providers. The identified areas for improvement could guide future initiatives aimed at enhancing the transportation experiences and meeting the specific needs of senior clients.

Agency (In Percentage)

WHAT TRANSPORTATION SERVICE IMPROVEMENTS DO YOU THINK WOULD BE BENEFICIAL TO YOUR SENIOR CLIENTS? (12)



Specialized (In Percentage)

WHAT TRANSPORTATION SERVICE IMPROVEMENTS DO YOU THINK WOULD BE BENEFICIAL TO YOUR SENIOR CLIENTS? (82)

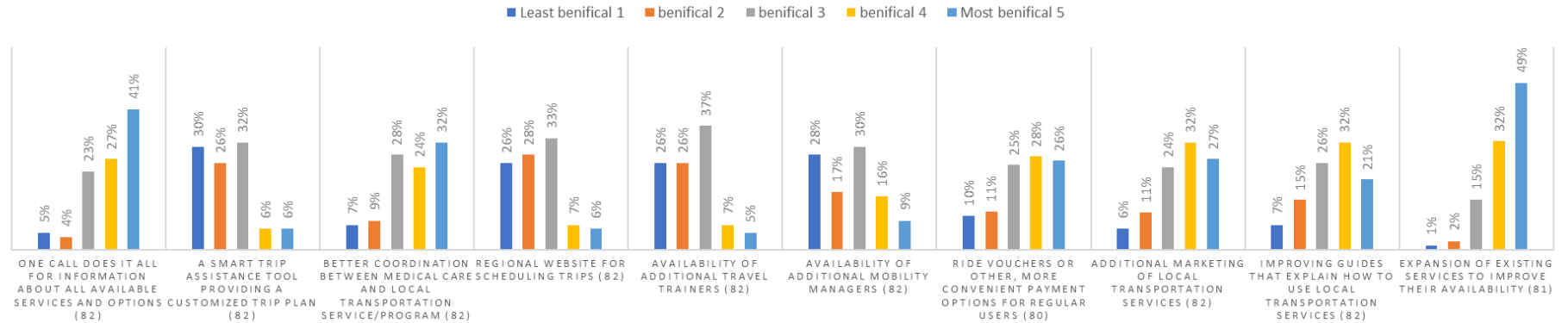
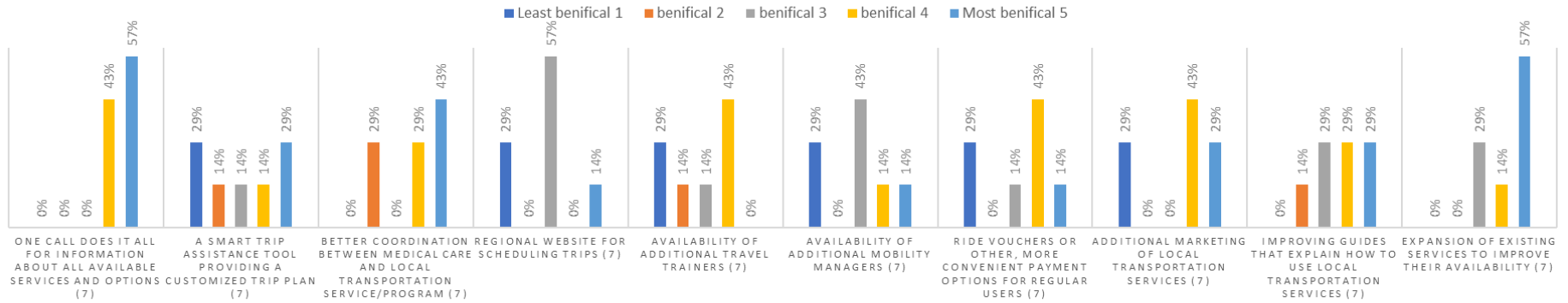


Figure 6.29: Service improvements beneficial to older adults (General Transit and Specialized Mobility).

Tribe (In Percentage)

WHAT TRANSPORTATION SERVICE IMPROVEMENTS DO YOU THINK WOULD BE BENEFICIAL TO YOUR SENIOR CLIENTS? (7)



Total (In Frequency)

WHAT TRANSPORTATION SERVICE IMPROVEMENTS DO YOU THINK WOULD BE BENEFICIAL TO YOUR SENIOR CLIENTS? (101)

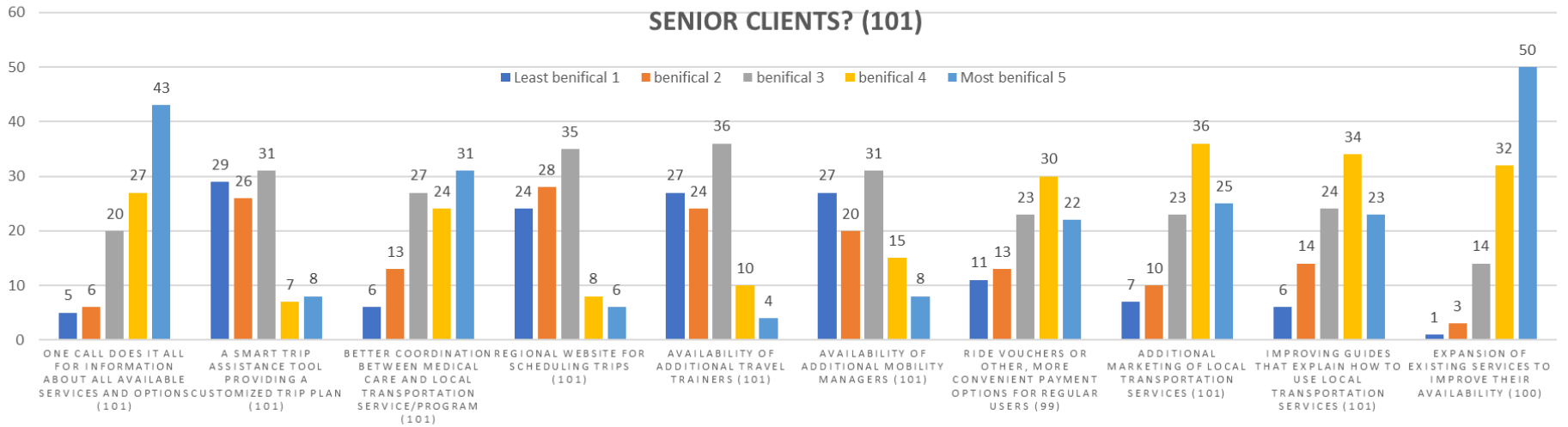


Figure 6.30: Service improvements beneficial to older adults (Tribal Aging Program and Total).

WHAT TRANSPORTATION SERVICE IMPROVEMENTS DO YOU THINK WOULD BE BENEFICIAL TO YOUR SENIOR CLIENTS?

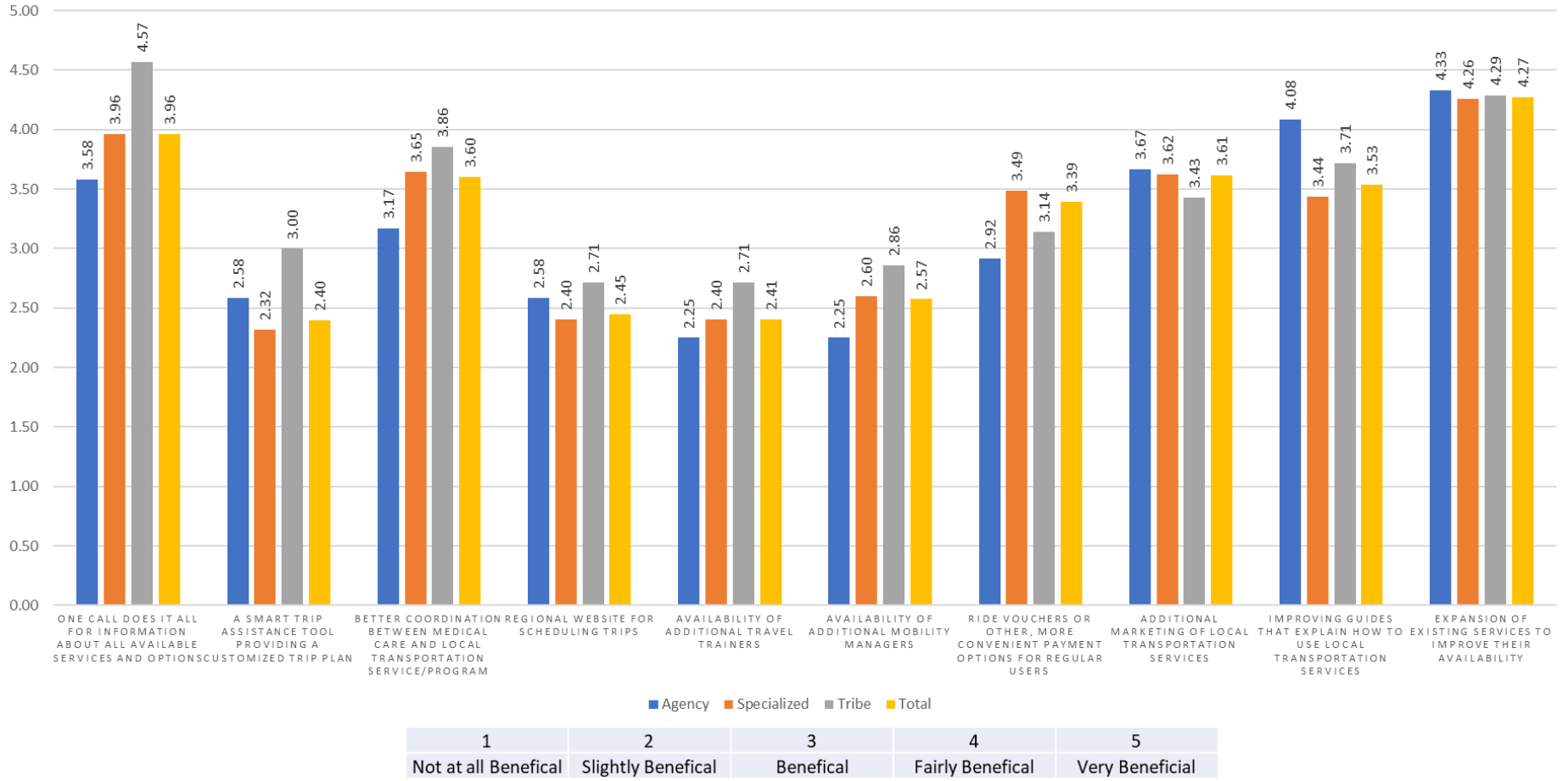


Figure 6.31: Service improvements beneficial to older adults (Average Weighted Score).

The subsequent question aimed to gather service providers' perspectives on the improvements listed above that they believed would be most readily implementable in their agency or community. This question sought to identify feasible solutions that could be effectively implemented without significant barriers or resource constraints. The results of this question, presented in Figure 6.32, provide valuable insights into the priorities and practical considerations of the service providers.

For general transit agencies, the most readily implementable improvement, as indicated by 58% of respondents, was the enhancement of guides that explain how to use local transportation services. This improvement suggests a recognition of the importance of clear and user-friendly instructions to facilitate easy access to transportation options. Additionally, 50% of respondents emphasized the need for additional marketing efforts to promote local transportation services, indicating a desire to raise awareness and increase ridership. Expanding existing services to improve availability (42%) and introducing ride vouchers or more convenient payment options (33%) were also identified as feasible improvements that could positively impact service delivery. Furthermore, 33% of respondents expressed the need for a centralized information service that consolidates all available services and options, simplifying the process for users to access comprehensive transportation information.

Specialized mobility service providers highlighted additional marketing of local transportation services (60%) as the most readily implementable improvement. This finding reflects the recognition of the importance of effective communication and outreach to reach the target audience and ensure the utilization of available services. Similar to General Transit Agencies, expanding existing services to improve availability (56%) and improving guides on

how to use local transportation services (56%) were identified as feasible improvements. Respondents also emphasized the importance of introducing ride vouchers or more convenient payment options for regular users (47%) to enhance accessibility and affordability. Additionally, 44% of providers acknowledged the value of a centralized information service that streamlines access to comprehensive transportation details. Better coordination between medical care and local transportation service/program (41%) was also considered a feasible improvement, acknowledging the potential benefits of integrating transportation services with healthcare systems.

Tribal Aging Programs placed significant emphasis on the feasibility of additional marketing efforts (71%) as a readily implementable improvement. This response highlights the recognition of the importance of outreach strategies tailored to the aging population and their specific transportation needs. Similarly, expanding existing services to improve availability (71%) was deemed feasible, underscoring the commitment to ensuring sufficient transportation options for seniors. Improving guides on how to use local transportation services (43%) was also identified as a practical step toward enhancing user experience and promoting ease of access. Better coordination between medical care and local transportation service/program (29%) was seen as a feasible improvement, indicating the recognition of the interconnectedness between healthcare and transportation services. Furthermore, the establishment of a regional website for scheduling trips (29%) was acknowledged as a potential solution to streamline the booking process and improve convenience.

Two open comment questions were included in the survey questionnaire to gather additional suggestions from service providers on the improvement of transportation services

for older adults in the community and the enhancement of mobility coordination efforts in the county or service area:

1. Please list any other suggestions to improve transportation service(s) for older adults in your community.
2. Please list any suggestions to improve mobility coordination efforts in your county/service area.

These questions provided an opportunity for service providers to share their insights and recommendations beyond the predefined options.

Suggestions to improve transportation services for older adults in their communities can be broadly categorized into three main areas: 1) coordination and funding, 2) service expansion and accessibility, and 3) communication, training, and marketing:

1. Participants emphasized the need for additional coordination and funding to implement necessary changes. They suggested coordinating with planning commissions to integrate survey feedback into transportation plans and improving coordination with clinics and hospitals to ensure transportation for medical appointments. Participants also proposed establishing a veteran's service vehicle to assist veterans in accessing VA facilities and seeking more support and funding from private pay transportation companies. They highlighted the importance of securing sustainable funding and increasing state assistance for services to the disabled and elderly.
2. In terms of service expansion and accessibility, participants stressed the need to expand transportation options for the elderly, disabled, and low-income

individuals. These include providing wheelchair-accessible options and increasing transportation availability in rural areas. They suggested improving coverage for weekends, evenings, and rural areas and establishing a single senior transportation option per county to reduce confusion and competition.

Participants also emphasized the importance of addressing the specific needs and concerns of seniors during transportation, such as physical and cognitive variables.

3. Communication, training, and marketing were also highlighted as important areas for improvement. Participants recommended improving marketing efforts to raise awareness about available transportation options and assuring the public that public transportation is safe. They emphasized the need to address the lack of knowledge about available transportation services and improve communication with doctors' offices to accommodate seniors' transportation needs for medical appointments. Training guidelines for drivers and hiring dedicated personnel to work solely on transportation services were also suggested. Participants recognized the significance of human connections and relationships in volunteer driver services for the elderly.

For the second question related to the suggestions to improve mobility coordination efforts in their county or service area, responses included three main categories: 1) collaboration, 2) expansion and funding, and 3) marketing:

1. Collaboration emerged as a key theme, with participants emphasizing the importance of collaborating with different agencies serving older adults. They

suggested working with healthcare facilities to arrange patient transportation times and collaborating with mobility managers to navigate transportation options effectively. Centralizing dispatch was also suggested to prevent duplicate trips and ensure efficient coordination. Participants emphasized the need to use volunteers more effectively between agencies and promote greater coordination across county lines.

2. Expansion and funding were identified as crucial factors for improving mobility coordination. Participants recommended expanding services to connect with park and ride bus services, particularly in areas with limited transportation options. They expressed the need for more rural transportation at affordable prices and highlighted the importance of acquiring additional drivers, vehicles, and equipment. To support these expansions, participants suggested exploring options such as implementing regional transit authorities or dedicated funding sources. Some participants even recommended exploring funding for autonomous vehicles as a potential solution.
3. Marketing was identified as a vital aspect of improving mobility coordination efforts. Participants emphasized the importance of continuing outreach and education on transportation options to ensure that individuals are aware of the available services. They proposed providing information sessions and support to medical and assisted living facilities to better assist older adults in accessing transportation resources.

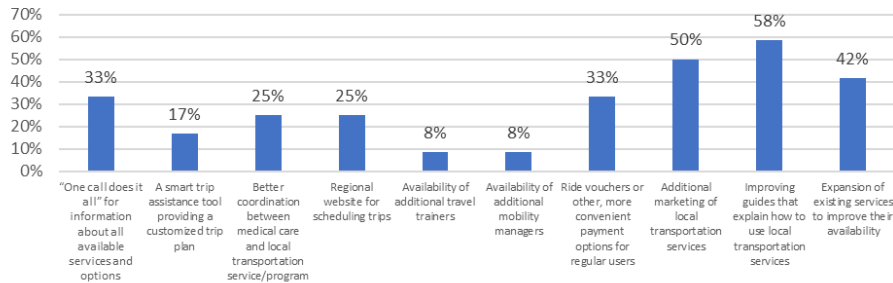
Participants also highlighted the need for accommodation in mobility coordination. They suggested adapting appointment times for seniors in rural areas to ensure convenient access to transportation services.

Last but not least, one additional open comment question was related to the post-COVID plan (“What plans have you made about your services once COVID-19 is under control (whether the service will undergo permanent changes and how)?”). There were varying plans and considerations among organizations. Some expressed a desire to return to pre-pandemic operations, aiming to resume their services as they were before the pandemic, including increasing ridership, expanding services, and reinstating previous practices such as shared rides and transportation for multiple individuals. However, many participants emphasized the importance of maintaining the safety measures implemented during the pandemic on a permanent basis. They recognized the value of continued mask usage, enhanced sanitization procedures, and limited capacity in vehicles to ensure the ongoing safety of both passengers and drivers. Some agencies have even installed sneeze barriers or dividers as an added precautionary measure. Several participants highlighted the need for ongoing evaluation and adaptation as the situation evolves. They expressed a willingness to adjust their services based on guidelines provided by the Centers for Disease Control and Prevention (CDC), funding sources, and the evolving needs of the community. In addition, there are mentions of exploring new initiatives to improve transportation services for older adults, including increased travel training opportunities to enhance independence, better coordination with other transportation options to provide seamless connectivity, and expanding lending programs to ensure access to mobility aids.

These findings provide valuable guidance for service providers in prioritizing and planning improvements that can be implemented effectively within their agencies or communities. By focusing on the most readily implementable enhancements, service providers can work towards addressing the needs and preferences of older adults, ultimately enhancing their transportation experience and overall well-being.

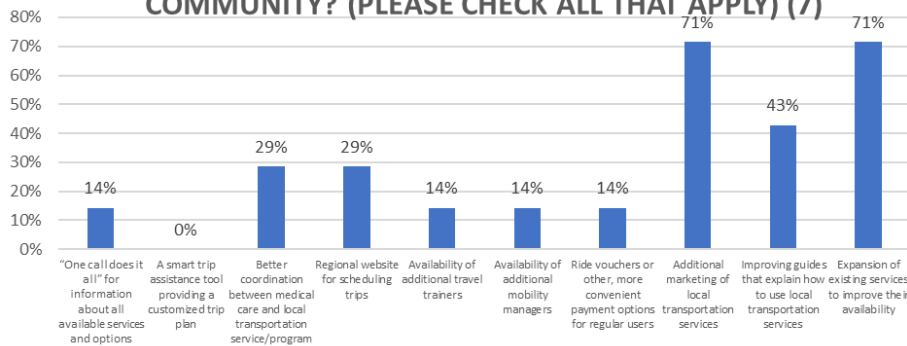
Agency (In Percentage)

AMONG THE IMPROVEMENTS LISTED ABOVE, WHICH DO YOU THINK WOULD BE MOST READILY IMPLEMENTABLE IN YOUR AGENCY OR COMMUNITY? (PLEASE CHECK ALL THAT APPLY) (12)



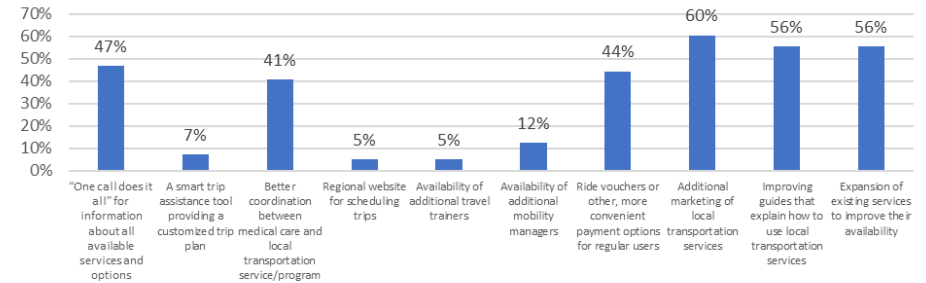
Tribe (In Percentage)

AMONG THE IMPROVEMENTS LISTED ABOVE, WHICH DO YOU THINK WOULD BE MOST READILY IMPLEMENTABLE IN YOUR AGENCY OR COMMUNITY? (PLEASE CHECK ALL THAT APPLY) (7)



Specialized (In Percentage)

AMONG THE IMPROVEMENTS LISTED ABOVE, WHICH DO YOU THINK WOULD BE MOST READILY IMPLEMENTABLE IN YOUR AGENCY OR COMMUNITY? (PLEASE CHECK ALL THAT APPLY) (81)



Total (In Frequency)

AMONG THE IMPROVEMENTS LISTED ABOVE, WHICH DO YOU THINK WOULD BE MOST READILY IMPLEMENTABLE IN YOUR AGENCY OR COMMUNITY? (PLEASE CHECK ALL THAT APPLY) (100)

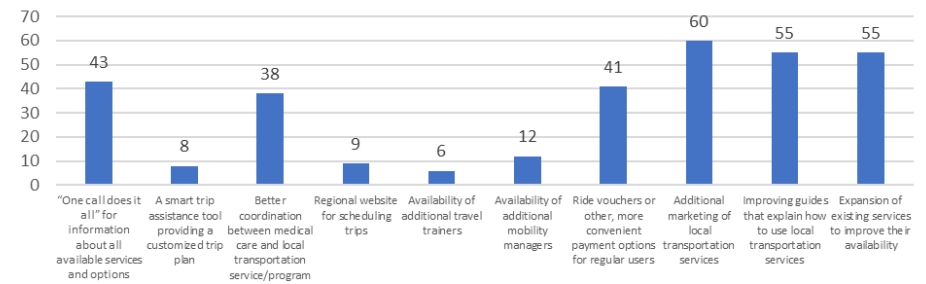


Figure 6.32: Most readily implemented improvements.

6.7 Summary

The survey of service providers yielded valuable insights into their profiles and services offered. Out of 103 responses, 13 were general transit agencies, 83 were specialized service providers and mobility managers, and 7 were from tribal aging programs. The services provided varied among the different agency types, with fixed-route bus service and shared-ride taxi service being common. Personnel composition also varied, with general transit agencies relying on third-party providers, agency staff, and volunteers, while specialized mobility providers emphasized agency staff and volunteers. Service providers from tribal aging programs predominantly relied on agency staff. Understanding these profiles and services helps identify challenges and opportunities for improvement in transportation services for older adults.

Regarding information technology and management system usage, the survey revealed that phone calls were the most popular booking method, while internet and mobile app usage were relatively low. Specialized mobility service users tended to schedule rides earlier. Agencies typically provided instant confirmation for bookings, and software usage for ride scheduling was prevalent among general transit agencies, with Assisted Rides being frequently mentioned. Communication channels such as brochures, websites, social media, and newsletters were used to share information about transportation services.

The survey on observed travel patterns showed that job/volunteer activities, hospital/medical office visits, and buying groceries were common trip purposes across different agency types. Health concerns such as cognitive difficulties in walking or climbing steps varied in their impact on travel. The COVID-19 pandemic led to reduced transportation use by seniors,

focusing on essential appointments. Safety measures were implemented, and service providers experienced decreases in ridership and revenue.

Perceived satisfaction from users revealed a generally positive sentiment towards transportation services among older adults. However, some specialized mobility providers reported negative attitudes from their clients, requiring further investigation. Important features for older adults, such as on-time performance, accessibility, affordability, and safety, were consistently highlighted. These insights could guide service providers in tailoring transportation services to meet the specific needs and preferences of older adults.

Problems and coordination issues faced by service providers included a lack of available drivers, limited budgets, and insufficient capacity to meet demand. Additional challenges included inadequate facilities, financial and geographic limitations, and administrative barriers. Coordination issues involved communication gaps, funding constraints, limited availability and accessibility, and territorial conflicts. Addressing these challenges requires improving resources, capacity planning, communication, and addressing external factors impacting service delivery.

The survey findings provide valuable insights into the mobility needs of older adults and the current practices of service providers in Wisconsin. Key areas for improvement include bridging the digital divide among older adults, addressing scheduling and route limitations, enhancing real-time information and wheelchair accessibility, and overcoming challenges faced by service providers, such as a lack of drivers, limited budgets, and coordination issues. These insights can inform targeted strategies to enhance transportation services and effectively meet the specific needs of older adults.

Chapter 7 Analytical Models on Questionnaire Survey Results

In this chapter, we delve deeper into the travel patterns of older adults, focusing on two crucial dimensions: travel purposes and frequencies, as well as mode choice. Earlier chapters have shed light on the predominant modes of transportation among older adults, highlighting that self-driving and rides from friends and family are commonly preferred, whereas public transportation usage remains relatively low. Additionally, we have observed that grocery shopping and medical appointments are among the most frequent travel activities. In this chapter, we aim to unravel the intricate relationship between socio-demographic factors and the travel behaviors exhibited by older adults. By doing so, we can gain a more comprehensive understanding of the factors influencing their travel decisions and preferences.

7.1 Measures

7.1.1 Trip Purpose Frequencies

Our first focus is to examine the trip purposes and frequencies of older adults. Building upon prior research conducted by Wang et al. (2011), Yang et al. (2019), and Han et al. (2021), we categorized trip purposes into three main categories: subsistence, maintenance, and leisure (refer to Table 7.1). Respondents provided information about the frequency of trips for each purpose, with response options including "Rarely/Never," "A few times per year," "A few times per month," "A few times per week," or "Daily."

Table 7.1: Classification of Trip Purposes

Category	Trip purposes
Subsistence	Job or volunteer activity
	Attending church/place of worship
Maintenance	Hospital/medical office visit
	Pharmacy visit
	Buying groceries
	Banking
	Personal care
	Dining
Leisure	Visiting with family/friends
	Attending social/community event
	Exercise

To enhance the clarity of our analysis and account for low response counts in certain frequency groups, we further categorized these frequencies. Specifically, we combined "Rarely/Never" and "A few times per year" into a "low" category (coded as 0), reflecting trips occurring less than once a month. We grouped "A few times per week" and "Daily" into a "high" category (coded as 2), indicating trips occurring at least once a week. The "A few times per month" category remained as "medium" (coded as 1).

7.1.2 Primary Travel Mode

The second focal point of this chapter is to explore the primary travel modes chosen by older adults prior to the COVID-19 pandemic. Although our questionnaires listed a detailed array of possible local transportation services, their usage rates were relatively low. Consequently, we consolidated all these local transportation services into a single category labeled "public transit." As a result, we have three primary travel mode categories: "self-driving," "family/friend ride," and "public transit."

It's worth noting that in cases where respondents selected the same frequency for multiple travel modes, we prioritized the order of "public transit" > "family/friend ride" > "self-driving" to emphasize the transportation needs of older adults. For instance, if a respondent indicated "A few times per week" as the highest frequency for both "public transit" and "family/friend ride," we counted it as "family/friend ride." We established "self-driving" as the baseline (coded as 0), "family/friend ride" as 1, and "public transit" as 2.

7.1.3 Socio-Demographic Variables

This chapter incorporates several socio-demographic factors to provide a comprehensive understanding of older adults' travel behaviors. These factors include age, gender, income, wheelchair use, and living arrangements.

- Age: Age data, collected in years, were grouped into three categories: 0 for ages 65 to 74, 1 for ages 75 to 84, and 2 for ages 85 and older.
- Gender: Respondents self-identified as either male (coded as 0) or female (coded as 1).
- Income: Annual household income was categorized as "high" (coded as 0, at least \$25,000) or "low" (coded as 1, less than \$25,000).
- Wheelchair Use: Information on wheelchair use was binary, with 0 indicating no use and 1 indicating use.
- Living Arrangements: Living arrangements were classified as binary: 0 for living with others and 1 for living alone.

7.1.4 Descriptive Statistics

In our dataset, we have 1009 valid cases for trip purpose analysis and 1007 valid cases for primary travel mode analysis. These cases represent a diverse sample of older adults and closely mirror the overall respondent demographics.

Descriptive statistics, detailed in Table 7.2 and Table 7.3, provide insights into the socio-demographic characteristics of the participants. The age distribution is relatively evenly spread across the three categories, with a slightly larger representation in the 75 to 84 years age group. Females make up a more significant portion of the study compared to males. Income distribution is nearly balanced, though a slightly larger proportion falls into the lower income category. While most participants do not use wheelchairs, a notable portion does. Additionally, more older adults live alone than with others.

Table 7.2: Descriptive Statistics of Variables for Trip Purpose Frequency Analysis

Variable	Code	Description	N*	Percentage**
Subsistence	0	Low, less than once a month	609	60.4%
	1	Medium, a few times per month	218	21.6%
	2	High, at least once a week	182	18.0%
Maintenance	0	Low, less than once a month	134	13.3%
	1	Medium, a few times per month	502	49.8%
	2	High, at least once a week	373	37.0%
Leisure	0	Low, less than once a month	480	47.6%
	1	Medium, a few times per month	275	27.3%
	2	High, at least once a week	254	25.2%
Age	0	60 to 74 years old	335	33.2%
	1	75 to 84 years old	366	36.3%
	2	85 years old and above	308	30.5%
Gender	0	Male	352	34.9%
	1	Female	657	65.1%
Income	0	High, Annual Household Income is above \$25,000	486	48.2%

	1	Low, Annual Household Income is less than \$25,000	523	51.8%
Wheelchair Use	0	No	895	88.7%
	1	Yes	114	11.3%
Living Arrangement	0	With others	451	44.7%
	1	Alone	558	55.3%

Notes: * Total valid N = 1009. ** Total percentages may vary slightly from 100% due to rounding error.

Table 7.3: Descriptive Statistics of Variables for Primary Travel Mode Analysis

Variable	Code	Description	N*	Percentage**
Primary Travel Mode	0	Self-driving	558	55.4%
	1	Family/friend ride	231	22.9%
	2	Public transit	218	21.6%
Age	0	60 to 74 years old	333	33.1%
	1	75 to 84 years old	367	36.4%
	2	85 years old and above	307	30.5%
Gender	0	Male	356	35.4%
	1	Female	651	64.6%
Income	0	High, Annual Household Income is above \$25,000	482	47.9%
	1	Low, Annual Household Income is less than \$25,000	525	52.1%
Wheelchair Use	0	No	893	88.7%
	1	Yes	114	11.3%
Living Arrangement	0	With others	450	44.7%
	1	Alone	557	55.3%

Notes: * Total valid N = 1007. ** Total percentages may vary slightly from 100% due to rounding error.

Regarding travel modes, a majority of older adults prefer self-driving, although a significant portion also relies on family/friends or public transit. Maintenance trips, such as medical appointments and grocery shopping, are the most frequent travel purposes among this population.

7.2 Methodology

To navigate through the intricacies of behavioral choices of older adults, this chapter leverages the capabilities of two specialized discrete choice models: the Ordinal Logit Model (OLM) and the Multinomial Logit Model (MNL). Both models are wielded to encapsulate the relationship between our independent variables - gender, age, income, wheelchair use, and living arrangement - and the respective categorical dependent variables. The choice between these models hinges on the type of categorical outcome, whether ordinal or nominal. While alternative modeling approaches may yield numerically distinct outcomes, the underlying relationships identified are expected to remain consistent across different models.

7.2.1 Ordinal Logit Model: Travel Purpose Frequencies

To dissect the relationship between our independent factors and the frequency of travel for each travel purpose, the Ordinal Logit Model is chosen. The travel purposes - Subsistence, Maintenance, and Leisure - will each be analyzed separately, but the methodology remains consistent. Within each travel purpose, the frequencies are categorized as low, medium, and high, giving the data an inherent ordinal structure suitable for the OLM.

For a specific travel purpose, the model can be represented as:

$$\log \left(\frac{P(\text{Frequency} \leq k|X)}{P(\text{Frequency} > k|X)} \right) = \alpha_k - \beta X$$

Where α_k is a threshold specific to frequency category k ; X contains our independent variables (gender, age, income, wheelchair use, living arrangement); β is the vector of coefficients.

The above representation will be applied to each travel purpose (Subsistence, Maintenance, and Leisure) independently, allowing for a detailed breakdown of the factors influencing frequency of travel for each purpose.

7.2.2 Multinomial Logit Model: Primary Mode Choice

To interpret the mode of travel choice, we apply the Multinomial Logit Model. This categorical dependent variable comprises distinct, non-ordered classes, namely: self-driving, family/friend ride, and public transit. The MNL model will gauge the probability of an individual selecting a specific mode in light of the independent variables.

The MNL for this segment is:

$$P(\text{Mode} = j|X) = \frac{e^{\beta_j X}}{\sum_{k=1}^J e^{\beta_k X}}$$

Where J denotes the total number of travel modes; X denotes our independent variables; β_j is the coefficient vector for mode j .

Prior to conducting the logistic regression analyses, we rigorously test several assumptions, none of which are violated. These include tests for multicollinearity, independence of errors, and the ratio of cases to independent variables (ensuring at least 10 cases per independent variable). The regression analyses are performed using IBM SPSS Statistics software version 28.0 (IBM Corp, 2021).

7.3 Results and Discussion

The outcomes of Ordinal Logit Model on trip purpose frequencies are presented in Table

7.4. In general, the disadvantaged population, including old older adults, female, people from

low-income household, wheelchair users, and people who live alone, make fewer trips significantly than their counterparts at least for one type of trip purposes.

A prominent observation is the inverse relationship between age and frequency of certain trips. Older adults aged 75-84 undertake fewer maintenance trips with an odds ratio (OR) of 0.656, underpinned by a 95% confidence interval of 0.491-0.876 ($p=0.004$), when compared to their younger counterparts below 75 years. This decline becomes more pronounced for those aged 85 or above, who show a marked decrease in trip frequencies across all trip purpose categories. Such findings might be attributed to the physiological and cognitive changes related to aging, potentially limiting mobility and reducing the need or desire for frequent trips.

Gender differences are evident as females tend to make significantly fewer maintenance trips than males, with an OR of 0.637 and a 95% confidence interval of 0.494-0.823 ($p < 0.001$). This discrepancy might hint towards societal roles and responsibilities, cultural attitudes, or even safety concerns influencing women's travel behaviors.

Socioeconomic disparities play a role in travel frequency. Specifically, older adults hailing from households with an annual income below \$25,000 undertake fewer subsistence trips (OR = 0.493, 95% CI: 0.378-0.642, $p < 0.001$) and leisure trips (OR = 0.599, 95% CI: 0.468-0.767, $p < 0.001$) in contrast to those from higher-income households. This trend underscores the substantial impact of financial constraints on travel behaviors, potentially limiting accessibility to essential services or recreational activities.

Wheelchair users, predictably due to their physical limitations, register lower frequencies across all trip categories. This underscores the necessity for a more inclusive infrastructure and transportation solutions tailored for this demographic.

Living arrangements wield an influence on subsistence trips. Individuals living alone engage in fewer such trips (OR = 0.635, 95% CI: 0.486-0.829, $p < 0.001$) than those cohabiting. A similar trend is found for maintenance trips with slightly lower significance ($p = 0.051$). The implications could range from social dynamics to safety concerns, underlining the importance of fostering community networks for solitary older adults.

Table 7.4: Ordinal Logit Model Results on Trip Purpose Frequencies (Reference: Low)

Variable	Subsistence			Maintenance			Leisure		
	OR ^a	(95% CI) ^b	<i>p</i>	OR ^a	(95% CI) ^b	<i>p</i>	OR ^a	(95% CI) ^b	<i>p</i>
Age (references: 60 - 74)									
75 - 84	0.963	0.716-1.296	0.806	0.656**	0.491-0.876	0.004	0.886	0.671-1.168	0.390
85+	0.667*	0.482-0.923	0.015	0.391***	0.287-0.532	< .001	0.710*	0.527-0.958	0.025
Gender (references: Male)									
Female	1.130	0.865-1.475	0.370	0.637***	0.494-0.823	< .001	0.911	0.712-1.165	0.457
Income (references: High)									
Low	0.493***	0.378-0.642	< .001	0.792	0.615-1.02	0.071	0.599***	0.468-0.767	< .001
Wheelchair Use (references: No)									
Yes	0.434***	0.278-0.677	< .001	0.339***	0.23-0.501	< .001	0.535**	0.361-0.794	0.002
Living Arrangement (references: With others)									
Alone	0.635***	0.486-0.829	< .001	0.773	0.598-1.001	0.051	0.959	0.746-1.231	0.741

Notes: ^a OR: odds ratio; ^b 95% CI: 95% confidence interval. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

The outcomes of Multinomial Logit Model on primary travel mode are presented in Table 7.5. The age factor plays a role in travel mode preferences even in the older adults group. Specifically, those aged 85 and above demonstrate a higher inclination towards family/friend rides, with an odds ratio (OR) of 0.656 (95% CI: 0.491-0.876, $p=0.004$) in contrast to self-driving, when compared with the 60-74 age group. A similar while slightly less pronounced trend is observed for the age group 75-84 ($p=0.008$). Interestingly, age does not appear to significantly influence the preference for public transit over self-driving across the board. This could indicate that while older adults may gradually relinquish personal driving, the decision to opt for public transit remains complex and multifaceted, potentially being influenced by factors beyond age.

Table 7.5: Multinomial Logit Model Results on Primary Travel Mode

Variable	Primary Travel Mode (vs. Self-driving)					
	Family/friend Ride			Public Transit		
	OR ^a	(95% CI) ^b	<i>p</i>	OR ^a	(95% CI) ^b	<i>p</i>
Age (references: 60 - 74)						
75 - 84	1.452	0.946-2.23	0.088	0.794	0.541-1.166	0.239
85+	3.214***	2.1-4.92	< .001	0.845	0.554-1.290	0.436
Gender (references: Male)						
Female	1.970***	1.369-2.835	< .001	1.370	0.966-1.943	0.077
Income (references: High)						
Low	2.745***	1.943-3.88	< .001	3.422***	2.389-4.900	< .001
Wheelchair Use (references: No)						
Yes	4.561***	2.7-7.704	< .001	4.535***	2.700-7.615	< .001
Living Arrangement (references: With others)						
Alone	0.875	0.618-1.24	0.453	1.263	0.884-1.804	0.199

Notes: ^a OR: odds ratio; ^b 95% CI: 95% confidence interval. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Females exhibit a pronounced leaning towards family/friend rides, evidenced by an OR of 1.970 (95% CI: 1.369-2.835, $p < 0.001$) compared to self-driving. Moreover, while the inclination towards public transit among females is less statistically significant ($p = 0.077$), it's indicative of a broader tendency among women to explore alternative transport options beyond personal driving. This could be shaped by factors ranging from safety concerns to societal roles, warranting further investigation.

Older adults from households earning below \$25,000 annually manifest a clear reliance on both family/friend rides and public transit. This aligns with the intuition that owning and maintaining a vehicle can be economically challenging for them, prompting a shift towards more economical or accessible travel options.

Wheelchair users' travel behaviors underline the critical importance of accessibility. Their pronounced dependence on family/friend rides and public transit is emblematic of the physical barriers they face with self-driving. It emphasizes the urgent need for infrastructural enhancements and inclusive transportation solutions that cater to the unique requirements of this group.

Interestingly, the living arrangement variable does not significantly sway the travel mode choice, underscoring that solo or communal living does not necessarily predicate transport preferences.

Collectively, these findings emphasize the need for understanding the nuanced needs of different demographics and making targeted transportation policies. Addressing the different requirements of varying demographic groups will not only enhance mobility but also contribute to an improved quality of life for older adults.

7.4 Summary

This chapter employed the Ordinal Logit Model and the Multinomial Logit Model to explore the travel behaviors of older adults, focusing on trip frequencies and mode choices. From the Ordinal Logit analysis, we found that older individuals, especially those aged 85 and above, generally made fewer trips. Females took fewer maintenance trips compared to males. Lower-income groups took fewer subsistence and leisure trips, while wheelchair users made fewer trips due to physical challenges. People living alone also tended to engage less in subsistence and maintenance trips compared to those living with others. In the Multinomial Logit analysis, older adults leaned more towards family/friend rides than self-driving, with females showing a similar trend. Those with lower incomes and wheelchair users relied more on family/friend rides and public transit, possibly due to financial and physical constraints.

In essence, this study sheds light on the intricate dynamics between demographics and travel preferences among older adults. The findings underscore the need for transportation policies that address these specific patterns to ensure all segments of the population have suitable travel options.

Chapter 8 Focus Group Meeting Results

Three group meetings were conducted interviewing older adults, and another three group meetings with service providers. Sixteen older adults and twenty-two service providers participated in the focus group interviews. Participants were asked about the obstacles that older adults faced when using local alternative transportation services. Moreover, they were encouraged to provide recommendations for better transportation services. Last but not least, the examination of older adults' as well as service providers' perspectives encompassed the incorporation of innovative technologies such as the Internet, smartphones, and real-time vehicle location information.

Of the 16 senior individuals who participated focus group interviews, 11 were female and 5 were male, with ages varying from 62 to 87 years. All of them came from households with annual incomes lower than \$50,000. Of the 22 participating agencies, 15 agencies were administrated by a local government body (county, city, tribe) and 7 were non-profit organizations. Most interviewees from agencies occupied positions of senior management, such as transportation director, transit manager, mobility manager, transportation program coordinator, nutrition director, etc.

The chapter is organized as follows: 1) discussions of the findings from focus group meetings with older adults, 2) discussions of the findings from focus group meetings with service providers, and 3) comprehensive summary of all the findings and suggestions.

8.1 Findings from Older Adults Focus Groups

The focus group meetings with older adults covered individuals who used alternative transportation services frequently, including ADRC services, shared-ride taxis (before COVID-19), volunteer driver programs, and medical transport services such as Non-Emergency Medical Transportation (NEMT), and those who seldom used the services. Participants were asked about barriers they encountered in finding and using local alternative transportation services, as well as suggestions to better meet their travel demands. Adoption of emerging technologies such as Internet, smartphone, and real-time vehicle location information were also discussed to unfold older adults' attitudes.

The following subsections summarize all discussions from the older adults focus groups. We categorized the discussions into four main topics, including financial barriers, accommodational issues, attitudes on emerging technologies and other topics.

8.1.1 Financial Barriers

Affordability is a crucial factor in older adults' decision-making process, as they have to prioritize expenses based on their limited incomes and resources. Participants questioned the cost disparities between different transportation providers and expressed the desire for affordable options that cater to their needs. Some participants highlighted instances where they couldn't afford transportation fees, leading to missed opportunities, such as medical appointments and other social activities. The financial barriers among older adults include:

Limited Financial Resources: Some participants mentioned that they rely on limited incomes, which can make it difficult to afford transportation costs. This limited financial capacity restricts their ability to access transportation services regularly or as needed.

Lack of Affordable Transportation Options: The participants discussed the lack of affordable transportation options in their areas, especially in rural or remote locations. Limited public transportation services or the absence of subsidized transportation programs make it challenging for individuals with financial constraints to find affordable means of transportation.

High Costs of Specialized Transportation: Participants who require specialized transportation due to mobility issues or medical conditions mentioned that these services often come at higher costs. The expenses associated with accessible vehicles or specialized equipment, such as wheelchair lifts, can be prohibitive for individuals with limited financial resources.

Financial Burdens of Additional Support: Some participants require additional assistance, such as caregivers or attendants, to accompany them during transportation due to their specific needs. The cost of hiring or arranging for such extra supports can be a financial barrier for individuals with limited funds.

Expenses for Medical Appointments: Participants mentioned the financial burden of transportation costs related to medical appointments, including frequent visits to clinics, hospitals, or specialized healthcare providers. The cumulative expenses for transportation to these appointments can add up and strain limited financial resources. Some participants also mentioned that they were covered by Medicare and Medicaid, which helps alleviate the financial burden of transportation expenses. They expressed gratitude for the coverage provided by these programs.

From the participants' perspectives, overcoming these financial barriers would require multifaceted supports, including the availability of affordable transportation options, subsidized

programs, and financial assistance to ensure equitable access to transportation for all individuals, regardless of their financial status. Such supports can be categorized as:

Grant Opportunities: Seek out and apply for grants specifically aimed at improving transportation access for underserved populations. Grants can provide funding for initiatives that address financial barriers, support transportation infrastructure, or develop innovative transportation solutions.

Government Assistance: Advocate for increased government funding and support for transportation services. This can involve working with local, state, and federal authorities to allocate resources towards affordable transportation initiatives, especially in underserved areas.

Subsidized Transportation Programs: Implement subsidized transportation programs specifically designed for individuals with limited financial resources. These programs can provide reduced fares or discounts on transportation services, making them more affordable and accessible.

Non-Profit Transportation Services: Establish or support non-profit organizations that offer transportation services at lower costs or on a sliding fee scale. These organizations can leverage funding sources, grants, and community support to provide affordable transportation options to individuals in need.

Volunteer Driver Programs: Establish volunteer driver programs where community members can offer transportation assistance to those in need. This can help reduce transportation costs for individuals who require regular trips to medical appointments, grocery stores, or social activities.

Community Partnerships: Foster partnerships between transportation providers, community organizations, and local businesses to develop innovative solutions. Collaborative efforts can lead to the creation of transportation programs that address financial barriers, such as discounted fares for specific destinations or delivery services for essential items.

Public Awareness Campaigns: Raise awareness about the financial barriers to transportation faced by individuals in the community. Conduct public awareness campaigns to educate the public, stakeholders, and policymakers about the importance of affordable transportation options and the impact of financial barriers on individuals' well-being.

Mobility Management Services: Develop comprehensive mobility management services that provide personalized transportation assistance, information, and resources to individuals with financial constraints. These services can help individuals navigate available transportation options, including subsidies, grants, and community programs.

In conclusion, addressing the financial barriers to transportation faced by older adults is crucial for ensuring their well-being and quality of life. The participants' perspectives shed light on the challenges they encounter due to limited financial resources, lack of affordable options, high costs of specialized transportation, financial burdens of additional support, and expenses for medical appointments. To overcome these barriers, a multifaceted approach is necessary, encompassing grant opportunities, government assistance, subsidized transportation programs, non-profit transportation services, volunteer driver programs, community partnerships, public awareness campaigns, and mobility management services. By implementing these supports, we can strive to create a more inclusive and accessible transportation system that caters to the needs of all individuals, irrespective of their financial status. Empowering older adults with

affordable and reliable transportation options will not only enhance their independence and social engagement but also promote their overall well-being and ensure they can fully participate in the activities and services they require.

8.1.2 Accommodational Issues

Ensuring accessible and reliable transportation for older adults requires addressing various accommodational issues related to service availability, health and accessibility, reservation and waiting time, coordination and flexibility, communication, and driver competence. From limited service availability and insufficient frequency to difficulties in accessing ADA-compliant vehicles and coordinating different types of trips, these issues can significantly impact older adults' ability to meet their transportation needs.

Service Availability, Frequency, and Awareness

Accessing necessary transportation could become challenging due to the limited availability of services, particularly on weekends, which has been observed from the focus groups' discussions. In areas with few transportation options, reaching essential locations such as veterans' services and medical facilities becomes even more difficult.

Some participants mentioned that transportation services, such as vans or shuttles, were not available on a daily basis or with sufficient frequency. This lack can be particularly inconvenient for medical appointments and other time-sensitive activities.

Some participants even mentioned that there were no public transportation services in their region. In rural areas, where public transportation options are scarce, there might be limited advertising or promotion of available services. As a result, participants may not have been exposed to information about transportation options that could meet their needs.

To address these problems, the following solutions were discussed during the focus group studies, and summarized by the project teams based on the collected opinions from the participating older adults:

Expand Transportation Options: Work with local government authorities, transportation agencies, and community organizations to identify and address gaps in transportation services. This effort may involve increasing the number of routes, extending service hours, and exploring innovative transportation solutions such as on-demand or flexible transit options.

Improve Service Frequency: Advocate for increased frequency of transportation services, especially during peak hours or times when older adults are more likely to require transportation. This solution can reduce waiting times, enhance convenience, and provide more flexibility for older adults to plan their trips.

Enhance Awareness: Implement outreach and education campaigns to raise awareness among older adults about available transportation services. This increased awareness can involve distributing informational brochures, hosting community workshops, leveraging local media channels, and collaborating with senior centers or community organizations to disseminate information effectively.

Health and Accessibility

In terms of health and accessibility, participants highlighted issues with finding ADA compliant vehicles, difficulties with wheelchair accessibility, and the lack of available NEMT services. Some had not specifically requested ADA compliant vehicles and expressed uncertainty about how to do so. One participant mentioned that they have found accessible

transportation through family members who have modified their vehicles to accommodate their needs.

Passengers with other specific needs also noted some specific challenges. For example, restrictions on eating in vehicles can pose difficulties for individuals with medical conditions that require immediate food intake. Moreover, inadequate assistance for passengers with mobility devices, such as wheelchairs or walkers, makes it harder for them to access and use transportation services. Especially, volunteer drivers for transportation services may not be able to handle wheelchairs due to physical limitations. One participant shared a situation that when they did not require a wheelchair or lift, they faced issues with cramped vehicles and discomfort during transportation. Other cases included help with carrying bags and navigating through appointments.

To address these health and accessibility problems, the following suggestions were considered:

Improve Accessibility: Ensure that transportation services and vehicles are equipped with appropriate accessibility features, such as ramps, lifts, and designated spaces for mobility aids. Conduct regular maintenance and inspections to ensure these features are functional and meet the needs of older adults with varying abilities.

Provide Training: Train transportation staff, including drivers and support personnel, on how to assist older adults with mobility challenges. This training can include guidance on safely assisting individuals with mobility aids, providing support during boarding and disembarking, and creating a respectful and inclusive environment for older passengers.

Enhance Safety Measures: Implement safety protocols and measures to address older adults' concerns. These measures may include regular vehicle inspections, driver background checks, and safety training for drivers to ensure a secure transportation experience. Display safety information and emergency contact details prominently in vehicles and transportation facilities.

Coordinate with Healthcare Providers: Collaborate with healthcare providers to ensure that transportation services align with the specific health needs of older adults. This collaboration may involve establishing partnerships to provide medical transportation for appointments, coordinating pickup and drop-off locations with healthcare facilities, and ensuring appropriate seating and comfort during transit.

Reservation and Waiting Time

Concerns about reservation and waiting time were also frequently mentioned during the discussion. Older adults are often required to schedule their transportation needs well in advance, for example three days, which can limit their flexibility and spontaneity. This scheduling can be particularly problematic for medical appointments or social activities that may have unpredictable durations or last-minute changes. Older adults may feel restricted in their ability to make impromptu plans or adjust their schedules accordingly.

Some participants expressed frustration with the uncertainty and waiting time associated with advance reservations. Delays or inconsistencies in transportation services can lead to longer waiting times for older adults, causing inconvenience and potentially impacting their overall well-being. Waiting for scheduled transportation can be especially challenging for those with health conditions or limited mobility.

Increased transportation capacity is suggested to ease these problems. Capacity limitations of transportation should be assessed and addressed, particularly during peak hours or in areas with high demand. This increased capacity may involve adding more vehicles or drivers to the fleet, optimizing routes and schedules, or collaborating with additional transportation providers to meet the needs of older adults.

Coordination and Flexibility

Older adults also expressed a need for transportation services that offer flexibility for scheduling and destinations. They mentioned wanting the ability to make spontaneous trips or travel to places beyond their immediate area, such as visiting friends or going shopping in nearby towns. Limited flexibility can restrict their mobility and limit their social interactions or access to necessary resources.

Older adults often require transportation for both medical and non-medical purposes. However, coordinating these trips can be challenging. Medical trips, such as doctor's appointments or visits to healthcare facilities, may have specific time constraints and scheduling requirements. On the other hand, non-medical trips, such as grocery shopping or social outings, may have different timing and priorities. Coordinating these different types of trips can be complex, especially if older adults rely on different transportation services or if there are limited options available for each type of trip.

Some older adults also talked about round trips. Some transportation services may have limited availability for return trips or require separate reservations. This limitation can result in older adults facing challenges in securing transportation for their return journey, leading to inconvenience and potential scheduling conflicts.

To address these coordination problems, several strategies were discussed:

Integrated Transportation Services: Developing integrated transportation services that cater to both medical and non-medical trips can simplify coordination for older adults. This strategy could involve partnerships between healthcare providers, community organizations, and transportation providers to offer comprehensive transportation options that meet various needs.

Flexibility in Round Trip Reservations: Transportation services should consider offering flexible round-trip options, allowing older adults to reserve transportation for their return journey at the same time as their initial trip, thus eliminating the need for separate reservations and ensuring continuity in transportation services.

Information and Communication: Enhancing communication channels and providing clear information to older adults on available transportation options, scheduling procedures, and any coordination support can alleviate confusion and improve coordination. Examples include dedicated helplines, user-friendly websites, or outreach programs to inform older adults about transportation services.

Communication

Some participants expressed challenges communicating with service providers or drivers. Participants mentioned instances where they had difficulty communicating their specific needs or destinations to transportation service providers, such as taxi drivers or rideshare drivers. Such communication challenges can lead to confusion and potentially result in incorrect drop-off locations or delays, especially in areas that may be difficult to locate. Older adults with hearing or speech impairments may face additional communication barriers when using transportation services. In situations where drivers rely heavily on verbal instructions or when the driver and passenger need to communicate during the ride, individuals

with hearing or speech difficulties may struggle to effectively convey their needs or understand the driver's instructions.

To cross this barrier, training programs were suggested for transportation service providers, including drivers and customer service staff, to enhance their communication skills when interacting with older adults. This training can focus on active listening, patience, and understanding specific needs. Such training could ensure that transportation providers have mechanisms in place to accommodate passengers with hearing or speech impairments. Examples are training drivers in basic sign language or providing written communication tools and resources.

Driver Competence

Older adults have concerns about the competence and reliability of transportation drivers. They rely on drivers to navigate safely, follow traffic rules, and provide assistance if needed. Issues such as aggressive driving, speeding, improper vehicle maintenance, or inadequate training of drivers can raise safety concerns for older passengers.

One suggestion is that transportation providers implement training programs that specifically address the needs and concerns of older passengers. Topics could include educating drivers about the aging process, common physical and cognitive challenges faced by older adults, and appropriate techniques for assisting and communicating with them effectively.

8.1.3 Attitudes on Emerging Technologies

Older adults' experience and challenges with using electronic devices, such as smartphones, tablets, and computers, and the internet to arrange travel were discussed. Some participants highlighted the convenience and benefits of using electronic devices for finding bus routes and arranging local trips, especially when there was real-time vehicle tracking

information on an online map. Some were able to use smart devices on their own, while others relied on their family members for assistance. Participants also shared that online services such as internet banking could avoid frequent trips and save money.

On the other hand, challenges such as technical proficiency, communication issues, and physical limitations were also acknowledged. Lack of proficiency in using computers or small phones was a problem among technologically challenged individuals. Inconsistent cell phone signals in rural areas could hinder reliable electronic communication. Additionally, physical impairments such as vision problems were identified as another barrier to using electronic devices, particularly when encountering small text on websites or in applications.

Furthermore, functions and applications of emerging technologies such as real-time information, "one call does it all" systems, matching schedules, and payment systems were discussed.

Real Time Information

The participants had varying opinions on the usefulness of real-time information about vehicle location, with some considering it important for trust and reliability, while others found it less significant. Some participants felt that such information was not necessary because the transportation service they used was consistently on time and communicated any delays. However, some others expressed the importance of knowing the vehicle's location and having some flexibility in pickup/drop-off times, given their experiences with unreliable transportation services, such as when vehicles didn't show up or dropped passengers off at the wrong locations. It is especially important for medical appointments where late arrival may cause appointments to be canceled.

"One Call Does It All" System

Some interviewees expressed frustration with receiving multiple calls from different numbers and preferred a single contact number for scheduling trips. The participants generally saw the potential usefulness of a centralized system for coordinating transportation services, simplifying the process and providing greater convenience for users. Such a system was thought to be beneficial for individuals who use multiple transportation agencies, eliminating the need to contact different numbers or entities, providing various repeat information, and waiting for callbacks. A few participants expressed some skepticism but would be willing to give a unified system a try.

Matching Schedule

Participants emphasized the importance of a travel service that could accommodate their schedules effectively. They mentioned factors such as flexibility, ridesharing, and the need to coordinate appointments and caregiving responsibilities. Some expressed skepticism about finding a service that consistently met their scheduling needs, while others mentioned the importance of arranging travel after having appointments or plans in place.

Payment System

The participants appreciated the flexibility and voluntary payment options offered by the transportation services.

Check/Monthly bill: Several participants mentioned using checks to pay for transportation services. They received monthly statements or bills and wrote a check to cover the cost. This method allowed them to make payments on a regular basis.

Punch Card System: Some mentioned using a card system where they purchased cards and used them as a form of payment for shared ride cabs. They were able to keep track of the balance on the card and replenish it as needed, often using a check for payment.

Voluntary Payment: Some were in voluntary payment systems where individuals could choose how much they wanted to pay for the transportation services. There is no bill sent, and individuals have the flexibility to contribute an amount they can afford, even as low as one dollar.

8.1.4 Other Topics

During the survey conducted amid the COVID-19 pandemic, the impact of the COVID-19 on older adults' transportation choices was explored. Alongside addressing the challenges and suggestions previously discussed, participants also addressed the potential benefits that ideal transportation services could offer.

Impact of COVID-19

The participants acknowledged the limitations on transportation services imposed by the COVID-19 pandemic. Shopping trips were disrupted, and participants expressed a desire for a return to normalcy once the pandemic subsided. Some mentioned relying on friends or occasional outings to obtain groceries. Respondents also agreed that ride sharing could improve efficiency and expressed no concerns about sharing a ride although they thought some people may have reservations about it. While COVID-19 protocols have impacted ride sharing, they hope that ride sharing can resume in the future.

Potentials Benefits of Transportation

Participants discussed how the ideal transportation programs they suggested would benefit them and improve their lives.

Improved Meal Options: Participants mentioned that having access to restaurant delivery services would provide them with a greater variety of meals and the opportunity to enjoy freshly cooked food. This access would enhance their dining experience and allow them to have meals they enjoy, including home-cooked dishes.

Convenience and Ease: The availability of delivery services for meals and other items would eliminate the need for participants to cook or go out for groceries. This would provide convenience, particularly for individuals with physical limitations, making it easier for them to access essential items and reduce the need for additional assistance.

Social Interaction: Participants expressed a desire for more social interaction and the opportunity to visit friends or go to places like grocery stores. Having reliable transportation would enable them to engage with the community, see other human beings, and enjoy outings to places they currently cannot easily access.

Increased Independence: Access to transportation services would enhance participants' independence by allowing them to go out on their own terms, visit friends, explore new places, and have a sense of freedom and autonomy.

Overall, the ideal transportation programs discussed would benefit participants by improving their meal options, increasing convenience and ease of access to essential items, facilitating social interaction, and enhancing their overall independence and quality of life.

8.2 Findings from Service Providers

The focus group meetings with service providers centered on the challenges of providing transportation services to older adults. The discussions highlighted the importance of

coordination among transportation services to enhance the transportation experience for older adults. Additionally, attitudes towards emerging technologies were explored. The discussions were categorized into three subsections: service coordination, accommodational issues, and attitudes on emerging technologies.

8.2.1 Service Coordination

This section delved into the critical aspect of service coordination, drawing insights from in-depth discussions held with service providers during multiple in-person focus group sessions. The input gathered from these discussions' sheds light on the advantages, expectations, and suggestions related to service coordination in the context of enhancing transportation services for older adults. Service providers unanimously acknowledged the significance of coordination among transportation services in optimizing resources, expanding access, catering to diverse needs, delivering value to callers, and fostering fruitful partnerships. By pooling their efforts, organizations can efficiently use available resources, ensuring a greater reach and impact on the older adult community. Moreover, coordinated services provide a broader range of transportation options, particularly beneficial in areas with unique circumstances or limited choices. The findings highlight the importance of collaboration at various administrative levels to enhance service coordination and ultimately improve the transportation experience for older adults.

Advantages

Service providers agreed that coordination among transportation services could enhance transportation experience for older adults in maximizing resources, increasing access, serving diverse needs, providing value to callers, and fostering partnerships:

Maximizing resources: Coordinating services allows organizations to make their resources go further. By collaborating and avoiding overlaps and territorial instances, funds can be used more efficiently to serve a greater number of older adults.

Increased access: Coordinated services provide more options and rides to older adults. This coordination is particularly beneficial in areas with unique circumstances, such as being close to urban centers or having a rural population. The goal is to expand access and reach individuals who currently have limited transportation options.

Serving diverse needs: Different organizations have different limitations and target demographics. By coordinating services, a wider range of needs can be addressed, ensuring that various age groups, including those under 60, receive appropriate transportation assistance.

Value for callers: Having multiple transportation options adds value for individuals who reach out for assistance. Coordinated services, including cross-county transportation and mobility management, ensure that callers receive appropriate referrals and support based on their specific needs.

Partnership opportunities: Coordinating with other organizations and agencies allows for partnerships and collaboration on unique programs or initiatives. Examples include using drivers from other organizations and exploring innovative approaches to staffing challenges.

Expectations

The examples of excellent collaboration discussed in the meeting include:

One-stop shop: Having a centralized resource guide or phone number where individuals can access transportation information and receive referrals to appropriate services. This

centralized option ensures that older adults have a single point of contact and do not have to navigate multiple agencies to find the help they need.

Transparent information sharing: Collaborating organizations should have a clear understanding of each other's services and limitations. Transparency is crucial to avoid confusion and prevent individuals from being passed around without finding the right solution for their transportation needs.

Seamless navigation: Making the process as easy and seamless as possible for older adults, who may find transportation options confusing or overwhelming. By providing upfront and honest information, individuals can feel confident in knowing their options and accessing the appropriate transportation services.

Coordination of services: Striving to coordinate rides for individuals using multiple services or agencies. This means not only providing information but also actively arranging transportation on their behalf, leveraging different resources to ensure that no one is left unserved.

Addressing specific regional needs: Recognizing and addressing unique regional circumstances, such as cross-county transportation or connections to neighboring states. Collaborating with nearby counties and agencies can help facilitate transportation solutions for specialized care or travel beyond local boundaries.

The ideal collaboration focuses on providing accurate information, coordinating rides effectively, filling gaps in services, ensuring transparency between organizations, and prioritizing the ease and comfort of older adults in accessing transportation solutions.

Suggestions

Good coordination requires fostering a collaborative mindset, promoting flexibility within existing rules, advocating for equal funding and resources across communities, and finding ways to overcome territorial limitations to ensure seamless transportation services for all individuals in need. Regarding the administrative level that would make the most sense for improving coordination and collaboration in transportation services, the participants provided various perspectives:

State oversight: Participants acknowledged the importance of state-level involvement for overseeing and coordinating transportation services. They suggested that the state could provide a framework or guidelines for coordination efforts, ensuring consistency and simplicity across regions.

Regional approach: Many participants suggested a regional focus, grouping counties together to facilitate closer collaboration. They emphasized the need for collaboration within the local community, then expanding to the county level and further out to regional areas. Regions could be determined based on factors such as geographic proximity, shared transportation needs, or healthcare access.

Starting at the local level: Some participants emphasized the need to begin at the local level, establishing solid collaborations within the community and then expanding to the county and regional levels. They highlighted the importance of building relationships and fostering cooperation within a smaller geographic area before scaling up.

Customization based on regional needs: Considering the diversity of regions within a state, participants suggested tailoring the coordination approach to the specific needs of each

region. Factors such as the location of hospitals or the overall transportation landscape could be considered when determining the best fit for a particular region.

Overall, the participants recognized the need for multi-level collaboration, involving local, county, regional, and state entities. The specific administrative level that would make the most sense depends on factors such as geographic proximity, shared transportation needs, and existing regional collaborations.

8.2.2 Accommodational Issues

During the meeting, participants engaged in extensive discussions covering various crucial aspects related to providing transportation services to the community. One significant area that garnered attention and deliberation was the topic of accommodation issues. Recognizing the importance of ensuring accessible and inclusive transportation for all individuals, including older adults, the discussions explored challenges and potential solutions regarding physical accommodations, mobility aids, and other factors that contribute to a seamless and accommodating transportation experience. This section delves into the insights and recommendations gathered from these discussions, shedding light on the essential considerations and steps necessary to address accommodation issues effectively. By prioritizing accessibility and inclusivity, transportation services can better serve the diverse needs of the community and enhance the overall transportation experience for all individuals.

Disseminating Information

During the discussions, participants emphasized the challenges associated with disseminating accurate information to diverse demographics through various communication channels. Concerns were raised about riders who have expectations of additional services

beyond established guidelines, making last-minute requests, and identifying additional destinations after reservations have been made. The importance of adhering to rules and guidelines to maintain order within the transportation system was strongly emphasized. Effective marketing and education initiatives were also highlighted as crucial elements to ensure that people have a clear understanding of the available services. Furthermore, some participants shared positive experiences of drivers going above and beyond their duties to provide exceptional service. The discussions also addressed misconceptions about eligibility criteria and free services, as well as the confusion caused by different fee structures across counties. These considerations underscore the importance of addressing communication challenges, enhancing clarity, and ensuring equitable access to transportation services for all individuals within the community.

Users' Attitudes

In terms of the perceived users' attitudes, participants identified several key factors that play a crucial role in enhancing people's attitudes towards transportation services. Among these factors were strong relationships with drivers, the importance of on-time services, and sufficient passenger capacity. However, concerns were raised about the limited frequency of buses, which often resulted in long waits and missed connections for passengers. Anecdotes were shared about individuals who missed important appointments due to bus delays, underscoring the impact of such issues on people's lives. Additionally, the lack of weekend service, particularly for religious activities, emerged as a significant concern among the participants. These insights highlight the need for improving service frequency, reliability, and accommodating the community's diverse needs to ensure a positive and inclusive transportation experience for all.

On-Demand Services and Other Needs

Participants in the discussion also highlighted various issues related to on-demand transportation services. One concern raised was the occurrence of missed rides due to impatience or miscommunication among riders. Effective communication between drivers, dispatchers, and riders was emphasized as crucial to address these challenges and ensure a seamless experience. Additionally, the meeting recognized the importance of providing transportation options for individuals who do not qualify for Medicaid, such as those on Medicare, who face affordability issues for transportation to medical appointments. These discussions shed light on the need to find solutions that make transportation more accessible and affordable for all individuals in need.

Overall Enhancements

The meeting underscored several key areas that require attention to enhance people's attitudes towards transportation services. Among the identified areas were the need for increased funding, expanded service hours, better communication, and improved program oversight. It was recognized that leadership, oversight, and funding play crucial roles in improving transportation programs. By allocating adequate resources, extending service hours to accommodate various needs, improving communication channels, and implementing effective program oversight, the aim is to enhance the overall quality and accessibility of transportation services. These measures will contribute to improving people's attitudes and satisfaction with the available transportation options.

8.2.3 Attitudes on Emerging Technologies

Expectations

The focus group meeting noted that the current transportation services for older adults mainly rely on phone systems, logbooks, and paper-based processes. While some agencies have adopted dispatching systems or voice-over IP phones, there is limited coordination and integration between different departments and agencies.

The participants expressed the following needs and suggestions for technological tools that could enhance their daily work and improve transportation services for older adults:

Coordinated System: There is a need for a coordinated system that brings together different transportation services, such as local bus services, shared ride taxis, volunteer driver programs, and medical transportation. This system should facilitate coordination among agencies, break down barriers between departments and counties, and allow efficient use of drivers and vehicles.

Real-Time Travel Information: A comprehensive travel information system that provides real-time updates on available transportation options would be helpful. This system should offer personalized travel plans to users, considering their schedule, budget constraints, and individual travel limitations. Features could include reservations for travel, either through a centralized "one call does it all" system or a website/app.

Payment System: Incorporating a payment system into the technological toolset would be beneficial. Options could include credit card payments or top-up payments to streamline the financial aspects of transportation services.

Compatibility and Integration: Any new technological tool should be compatible with existing systems, such as dispatching software or voice-over IP phone systems, to ensure smooth integration and avoid duplication of efforts.

Data Sharing and Collaboration: Agencies should consider sharing data and collaborating with each other to avoid redundant data entry and streamline communication. Integration with existing programs, such as SAMS (Supports and Services Management System), used by ADRCs, could be explored to improve efficiency and reduce administrative burdens.

Personal Communication and Customer Service: While technological tools can provide efficiency gains, the importance of personal communication and customer service should not be overlooked, especially for older adults and people with disabilities. It is crucial to address anxiety and provide reassurance by maintaining personal interaction and ensuring clear communication about transportation services.

Training and Support: In order to successfully implement new technological tools, agencies should provide training and support both to staff members and older adults to overcome barriers related to technology adoption. Patient and comprehensive training can help older adults become comfortable with using new tools and increase their willingness to embrace technology.

Barriers

In considering the implementation of new technological tools, it is important to acknowledge the reservations expressed by some participants about potential challenges. These concerns primarily are the cost of investment and the requirement for reliable internet connectivity, particularly in rural areas. Therefore, it is crucial to consider affordability and accessibility and the need to overcome infrastructure limitations when introducing

technological solutions. By addressing these barriers proactively, it becomes possible to ensure that technological advancements in transportation services are inclusive and beneficial for all individuals, regardless of their location or socioeconomic circumstances.

8.3 Summary

Both focus group meetings with older adults and service providers offered valuable insights into challenges within current transportation services, attitudes towards emerging technologies, and suggestions for enhancing transportation services.

The focus group meetings with older adults explored their experiences and perspectives on alternative transportation services. Participants discussed barriers they faced in accessing and using these services, with a particular focus on financial constraints. Limited financial resources, a lack of affordable options, high costs of specialized transportation, and expenses related to medical appointments were identified as key financial barriers. To address these challenges, the participants suggested various solutions, such as seeking grants, advocating for government assistance, implementing subsidized transportation programs, supporting non-profit transportation services, establishing volunteer driver programs, fostering community partnerships, conducting public awareness campaigns, and developing comprehensive mobility management services. Accommodational issues related to service availability, health and accessibility, reservation and waiting time, coordination and flexibility, communication, and driver competence were also discussed. The participants highlighted the need for expanded transportation options, improved service frequency, enhanced awareness, accessibility features, training for staff, safety measures, coordination between transportation and

healthcare providers, flexibility in reservations, better communication channels, and driver competence training. Additionally, the attitudes of older adults towards emerging technologies, such as smartphones and real-time vehicle tracking, were examined, highlighting both the benefits and challenges associated with their use. Overall, the discussions emphasized the importance of addressing financial and accommodational barriers, as well as embracing emerging technologies, to create an inclusive and accessible transportation system for older adults.

The focus group meetings with service providers also discussed the challenges and potential solutions for providing transportation services to older adults. Service coordination emerged as a crucial factor in enhancing transportation experiences for older adults, with benefits including maximizing resources, increasing access, serving diverse needs, providing value to callers, and fostering partnerships. The discussions emphasized the need for coordination at multiple levels, including state oversight, regional approaches, and local collaborations. Accommodational issues were also explored, including disseminating accurate information, addressing users' attitudes towards services, accommodating on-demand needs, and enhancing overall service quality. The participants highlighted the importance of funding, expanded service hours, better communication, and improved program oversight to enhance transportation services. The attitudes towards emerging technologies were examined, with a focus on the need for a coordinated system, real-time travel information, a payment system, compatibility and integration, data sharing and collaboration, personalized communication, and training and support. While recognizing the potential benefits, participants also discussed barriers such as cost and internet connectivity in rural areas, emphasizing the importance of

considering affordability, accessibility, and infrastructure limitations when implementing technological solutions.

Both older adults and service providers shared several common themes and priorities regarding transportation services for older adults. Both groups recognized the importance of service coordination to enhance transportation experiences, maximize resources, and increase access for older adults. They also acknowledged the need to address accommodational issues such as disseminating accurate information, improving communication, accommodating on-demand needs, and enhancing overall service quality. Additionally, both groups recognized the potential benefits of emerging technologies in improving transportation services, including the need for a coordinated system, real-time travel information, payment systems, data sharing and collaboration, and personalized communication. In order to enhance transportation services for older adults, it is crucial to focus on enhancing service coordination, improving accommodation-related issues, embracing emerging technologies, and addressing financial constraints.

Chapter 9 Conclusions

To comprehensively understand the latent travel needs of older adults residing in suburban and rural areas, we devised a hybrid survey methodology and executed it within the state of Wisconsin. By combining the strengths of conventional survey distribution channels with online survey technology, we tailored our approach to accommodate the diverse preferences of survey participants, all while prioritizing their safety amidst the backdrop of COVID-19 challenges.

The collaborative efforts of statewide county/tribal Aging and Disability Resource Centers (ADRCs) and rural/specialized transportation service providers played a pivotal role in disseminating the older adult surveys. Simultaneously, we extended invitations to statewide rural transit/specialized transportation service providers to partake in the service provider survey. This dual-pronged approach allowed older adults to engage with the questionnaires either through printed formats or online platforms, while service providers exclusively utilized the online survey format. Notably, virtual video meetings were utilized for focus group interviews with service providers, while older adults opted for voice calls.

The outcome of this methodology was the successful collection of 1650 valid questionnaire responses from older adults statewide, effectively representing at least 65 of 72 counties and 5 tribes. Additionally, the survey garnered participation from 103 transportation service providers, spanning transit agencies, specialized service providers, and tribal aging programs. Complementing these insights, we conducted three focus group meetings each with older adults and transportation service providers to delve even deeper into the acquired data.

The findings of the study revealed that older adults in Wisconsin prefer self-driving and heavily rely on friends and family for transportation, resulting in limited use of local public and private services. Furthermore, notable patterns emerged among specific subgroups from the study of regression analysis: female older adults, individuals aged 85 and above, those from low-income households, and wheelchair users all exhibited a higher tendency to ride vehicles from family/friends/local transportation services than driving when compared with their counterparts. Older adults who live alone also make less trips than those cohabiting. The COVID-19 pandemic further decreased participation in these services. Grocery shopping emerged as the primary reason for trips among older adults, followed by medical purposes, while travel for work or volunteer activities was the least frequent.

The study also uncovered a digital divide among older adults, with nearly half of the respondents lacking internet access. This divide highlights the need to address connectivity issues and ensure widespread availability of internet services to bridge the digital gap among older adults. Furthermore, phone calls were identified as the preferred method for requesting ride services, indicating the importance of alternative booking methods suitable for older adults' preferences and needs.

Regarding satisfaction with local alternative transportation services, older adults generally expressed high ratings or had no specific opinion. However, concerns were raised regarding schedule availability, route choices, accessibility features, coordination with healthcare providers, reservation flexibility, communication, and driver performance. These areas require attention and improvement to enhance the overall transportation experience for older adults in Wisconsin.

Based on the analysis of survey information and insights gathered from the focus groups, the research team presents the following eight recommendations:

Collaboration and Funding: Collaborate with relevant government agencies, community organizations, and transportation providers to leverage resources and expertise in addressing the specific needs of older adults. Seek additional funding through grants, partnerships, and innovative mechanisms. Advocate for increased federal support and state assistance for accessible and affordable transportation options.

Coordination: Work with planning commissions to integrate feedback from surveys into transportation plans. Establish partnerships and dedicated transportation services with clinics and hospitals. Coordinate closely with healthcare providers to develop tailored solutions for older patients. Consolidate various transportation options under one comprehensive program per county.

Service Expansion: Expand transportation options for the elderly, disabled, and low-income individuals, including wheelchair-accessible choices. Increase the availability of vehicles, drivers, and volunteer drivers to meet the demand. Enhance coverage for weekends, evenings, and rural areas by adjusting schedules and routes.

Accessibility: Provide reliable and free transportation for individuals with disabilities. Develop protocols and guidelines to address seniors' physical and cognitive needs during travel. Ensure safety and comfort throughout the journey.

Training: Provide specialized training to transportation providers on age-friendly communication, assistance with mobility aids, and understanding the unique needs of older adults. Implement and promote stringent safety measures to assure older adults of their safety.

Focus on rural communities: Focus on rural small communities and ensure the availability of volunteer drivers. Foster meaningful interactions between volunteer drivers and older passengers to address social isolation. Provide fair compensation and address tax-related concerns to attract and retain qualified individuals.

Marketing: Develop targeted marketing campaigns to raise awareness about available transportation options among older adults and their families. Provide comprehensive and user-friendly information resources to address the lack of knowledge. Offer clear information on options, schedules, fares, and eligibility criteria.

Technology: Address connectivity issues by ensuring widespread availability of internet services. Provide real-time tracking and information about transportation options through user-friendly systems, apps, or websites, such as a "one call does it all" system. Implement easy reservation and payment systems. Promote education on technology usage among older adults.

Enacting these proposed recommendations is poised to significantly bolster transportation services for older adults residing in suburban and rural areas of Wisconsin. Through the targeted resolution of challenges and fulfillment of identified needs highlighted by this research, a collaborative effort among policymakers, transportation providers, and community organizations can culminate in the establishment of an inclusive, accessible, and age-friendly transportation network. This unified approach will serve to amplify the overall well-being and independence of older adults across the entirety of the state. It is worth acknowledging that the survey and analysis methodologies, along with the policy recommendations put forth, also hold the potential to be adapted and applied in other regions, fostering broader impact and relevance beyond the confines of Wisconsin.

To further advance this study, future research can consider the following directions:

Longitudinal Analysis: Conduct a longitudinal study to track changes in older adults' residential preferences (urban, suburban, rural) and their evolving transportation needs and choices, especially in response to changing societal and technological landscapes.

Comparative Studies: Expand the scope of research by comparing the findings from Wisconsin with data from other states or regions to identify commonalities and differences in the transportation challenges faced by older adults in diverse geographic settings.

Policy Implementation: Explore the actual implementation and impact of the recommended policies and interventions in Wisconsin and other regions, assessing their effectiveness in improving transportation services for older adults.

By pursuing these research directions, we can continue to enhance our understanding of transportation challenges faced by older adults and develop targeted solutions to improve their mobility and quality of life, not only in Wisconsin but also in similar suburban and rural areas across the country.

References

- AAA. (2021). *Local Transportation Services*. <https://seniordriving.aaa.com/maintain-mobility-independence/other-ways-get-around/local-transportation-services/>
- About Timebanking | Dane County TimeBank*. (n.d.-a). Retrieved July 9, 2021, from <https://danecountytimebank.org/about>
- About Timebanking | Dane County TimeBank*. (n.d.-b). Retrieved June 28, 2021, from <https://danecountytimebank.org/about>
- ADRC. (n.d.). Home Delivered Meals. *Aging & Disability Resource Center (ADRC)*. Retrieved July 10, 2023, from <https://adrcofbrowncounty.org/homebound-meals/>
- Aevaz, R. (2019). *2018 ACS Survey: While Most Americans' Commuting Trends are Unchanged, Teleworking Continues to Grow, and Driving Alone Dips in Some Major Cities*. Eno Center for Transportation. <https://www.enotrans.org/article/2018-ac-survey-while-most-americans-commuting-trends-are-unchanged-teleworking-continues-to-grow-and-driving-alone-dips-in-some-major-cities/>
- Ahn, M., Kwon, H. J., & Kang, J. (2020). Supporting Aging-in-Place Well: Findings From a Cluster Analysis of the Reasons for Aging-in-Place and Perceptions of Well-Being. *Journal of Applied Gerontology*, 39(1), 3–15. <https://doi.org/10.1177/0733464817748779>
- AHR. (n.d.). *Explore Poverty—Ages 65+ in Wisconsin | America's Health Rankings*. America's Health Rankings. Retrieved July 10, 2023, from https://www.americashealthrankings.org/explore/measures/poverty_sr/WI
- Andrew, C. L. (2012). *Mapping a road to driving retirement with the driver who has a diagnosis of dementia: Enhancing acceptance of the difficult decisions*.

- Bailey, L. (2004). *Aging Americans: Stranded Without Options*. Surface Transportation Policy Project. <https://trid.trb.org/view/697686>
- Bayne, A., Siegfried, A., Beck, L. F., & Freund, K. (2021). Barriers and facilitators of older adults' use of ride share services. *Journal of Transport & Health, 21*, 101055.
<https://doi.org/10.1016/j.jth.2021.101055>
- Bittner, J., Fuchs, P., Baird, T., Smith, A., & National Center for Freight and Infrastructure Research and Education (U.S.). (2011). *Addressing Elderly Mobility Issues in Wisconsin* (CFIRE 0405). <https://rosap.ntl.bts.gov/view/dot/23785>
- Black, K., Dobbs, D., & Young, T. (2015). Aging in Community: Mobilizing a New Paradigm of Older Adults as a Core Social Resourc. *Journal of Applied Gerontology, 34*(2).
<https://doi.org/10.1177/0733464812463984>
- Brookmeyer, R., Evans, D. A., Hebert, L., Langa, K. M., Heeringa, S. G., Plassman, B. L., & Kukull, W. A. (2011). National estimates of the prevalence of Alzheimer's disease in the United States. *Alzheimer's & Dementia, 7*(1), 61–73.
- Brown, T., Temple, K. M., & Rudolphi, J. (2020). *NRHA Policy Paper: Rural America's Senior Citizens: Considerations for Transportation, Healthcare Access, Connectedness, Nutrition and Economics*. National Rural Health Association.
- Carrie Diamond. (2020). *Volunteer Driver Programs: A vital part of Wisconsin's Transportation Network*. Greater WI Agency on Aging Resource, Inc.
<https://gwaar.org/api/cms/viewFile/id/2005837>
- CDC. (2020, July 14). *MyMobility Plan | Transportation Safety | Injury Center | CDC*.
https://www.cdc.gov/transportationsafety/older_adult_drivers/mymobility/index.html

- Collia, D. V., Sharp, J., & Giesbrecht, L. (2003). The 2001 National Household Travel Survey: A look into the travel patterns of older Americans. *Journal of Safety Research, 34*(4), 461–470. <https://doi.org/10.1016/j.jsr.2003.10.001>
- Coughlin, J. (2001). *Transportation and Older Persons: Perceptions and Preferences* (p. 30). AARP Public Policy Institute.
- Cromartie, J., & Nelson, P. (2009). *Baby boom migration and its impact on rural America* (ERR-79; Economic Research Report). U.S. Department of Agriculture.
- Currie, G., & Delbosc, A. (2010). Modelling the social and psychological impacts of transport disadvantage. *Transportation, 37*, 953–966.
- Dabelko-Schoeny, H., Maleku, A., Cao, Q., White, K., & Ozbilen, B. (2021). “We want to go, but there are no options”: Exploring barriers and facilitators of transportation among diverse older adults. *Journal of Transport & Health, 20*, 100994. <https://doi.org/10.1016/j.jth.2020.100994>
- Dane County TimeBank 2019-2023 Strategic Framework*. (2019).
- Dupont, R. (2022, February 14). *Uber for Seniors and Other Ride-Hailing Options*. A Place for Mom. <https://www.aplaceformom.com/caregiver-resources/articles/uber-lyft-for-seniors>
- Eby, D. W., Molnar, L. J., Kostyniuk, L. P., St. Louis, R. M., Zanier, N., Kellman, D., & University of Michigan. Transportation Research Institute. (2012). *Recommendations for meeting the mobility needs of older adults in rural Michigan*. (RC-1592). <https://rosap.ntl.bts.gov/view/dot/25488>

- Egan-Robertson, D. (2013). *Wisconsin's Future Population—Projections for the State, Its Counties and Municipalities, 2010—2040*. UW-Madison Applied Population Laboratory
Prepared for the Wisconsin Department of Administration Demographic Services
Center. https://eras.org/wp-content/uploads/FinalProjs2040_Publication.pdf
- Federal Highway Administration. (2019). *FHWA NHTS Report: Travel Trends for Teens and Seniors*. U.S. Department of Transportation.
- Federal Highway Administration. (2001). *2001 National Household Travel Survey*. U.S. Department of Transportation, Washington, DC.
<https://nhts.ornl.gov/download.shtml#2001>
- Federal Highway Administration. (2009). *2009 National Household Travel Survey*. U.S. Department of Transportation, Washington, DC.
<https://nhts.ornl.gov/download.shtml#2009>
- Federal Highway Administration. (2017). *2017 National Household Travel Survey*. U.S. Department of Transportation, Washington, DC. <https://nhts.ornl.gov/>
- Fitzpatrick, A. L., Powe, N. R., Cooper, L. S., Ives, D. G., & Robbins, J. A. (2004). Barriers to Health Care Access Among the Elderly and Who Perceives Them. *American Journal of Public Health, 94*(10), 1788–1794. <https://doi.org/10.2105/AJPH.94.10.1788>
- Foley, D. J., Heimovitz, H. K., Guralnik, J. M., & Brock, D. B. (2002a). Driving Life Expectancy of Persons Aged 70 Years and Older in the United States. *American Journal of Public Health, 92*(8), 1284–1289. <https://doi.org/10.2105/AJPH.92.8.1284>

- Foley, D. J., Heimovitz, H. K., Guralnik, J. M., & Brock, D. B. (2002b). Driving Life Expectancy of Persons Aged 70 Years and Older in the United States. *American Journal of Public Health, 92*(8), 1284–1289. <https://doi.org/10.2105/AJPH.92.8.1284>
- Freund, K., Bayne, A., Beck, L., Siegfried, A., Warren, J., Nadel, T., & Natarajan, A. (2020). Characteristics of ride share services for older adults in the United States. *Journal of Safety Research, 72*, 9–19.
- Goodwill Industries of Southeastern Wisconsin and Metropolitan. (n.d.). *Meals on Wheels in Milwaukee County | Goodwill Community Services*. Retrieved July 10, 2023, from <https://www.goodwillsew.com/help-for-people-with-disabilities/programs-for-adults-and-seniors/meals-on-wheels>
- Gray, L. (2016, February 3). 7 Services Expanding Mobility for Aging Americans. *Shared-Use Mobility Center*. <https://sharedusemobilitycenter.org/7-new-services-expanding-mobility-for-aging-americans/>
- Greenfield, E. A. (2016). Support from Neighbors and Aging in Place: Can NORC Programs Make a Difference? *The Gerontologist, 56*(4), 651–659. <https://doi.org/10.1093/geront/gnu162>
- Grosso, E. (2015, August). *Aging: Demographics in Wisconsin*. Wisconsin Department of Health Services. <https://www.dhs.wisconsin.gov/aging/demographics.htm>
- Han, D., Lee, Y., Yu, J., & Dejno, C. (2021). How does driving status affect trip patterns among older adults in suburban and rural communities? *Journal of Transport & Health, 21*, 101052. <https://doi.org/10.1016/j.jth.2021.101052>

- Hansen, S., Newbold, K. B., Scott, D. M., Vrkljan, B., & Grenier, A. (2020). To drive or not to drive: Driving cessation amongst older adults in rural and small towns in Canada. *Journal of Transport Geography, 86*, 102773. <https://doi.org/10.1016/j.jtrangeo.2020.102773>
- Hanson, T. R. (2014). *Planning for future successes among rural volunteer driver programs: Understanding local preferences of prospective users and drivers.*
- Hoyt, J. (2021, November 23). Personal Transportation for Seniors. *SeniorLiving.Org*.
<https://www.seniorliving.org/transportation/>
- IBM Corp. (2021). *IBM SPSS Statistics for Windows, Version 28.0* [Computer software]. IBM Corp.
- Jauhiainen, J. S. (2009). Will the retiring baby boomers return to rural periphery? *Journal of Rural Studies, 25*(1), 25–34. <https://doi.org/10.1016/j.jrurstud.2008.05.001>
- Jiang, J. (2019). More Americans are using ride-hailing apps. *Pew Research Center*.
<https://www.pewresearch.org/short-reads/2019/01/04/more-americans-are-using-ride-hailing-apps/>
- Kawachi, I., & Berkman, L. (2000). Social cohesion, social capital, and health. *Social Epidemiology, 17*(4).
- Keenan, T. (2010). *Transportation Use and Options of Midlife and Older Adults* (p. 44). AARP.
- Koffman, D., Raphael, D., & Weiner, R. (2004). *The impact of federal programs on transportation for older adults* (Vol. 17). Citeseer.
- Lang, J. E., Anderson, L., LoGerfo, J., Sharkey, J., Belansky, E., Bryant, L., Prohaska, T., Altpeter, M., Marshall, V., Satariano, W., Ivey, S., Bayles, C., Pluto, D., Wilcox, S., Goins, R. T., Byrd, R. C., & Healthy Aging Research Network Writing Group. (2006). The Prevention

- Research Centers Healthy Aging Research Network. *Preventing Chronic Disease*, 3(1), A17.
- Lave, R., & Mathias, R. (2000). State of the Art of Paratransit. *Transportation in the New Millennium*, 478, 1–7.
- Lee, J. S., & Frongillo, E. A. (2001). Factors Associated With Food Insecurity Among U.S. Elderly Persons: Importance of Functional Impairments. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 56(2), S94–S99.
<https://doi.org/10.1093/geronb/56.2.S94>
- Lutheran Social Services. (n.d.). *Make the Ride Happen*. Lutheran Social Services of Wisconsin and Upper Michigan. Retrieved July 10, 2023, from
<https://www.lsswis.org/service/disabilities/make-the-ride-happen/>
- Lyman, J. M., McGwin, G., & Sims, R. V. (2001). Factors related to driving difficulty and habits in older drivers. *Accident Analysis & Prevention*, 33(3), 413–421.
[https://doi.org/10.1016/S0001-4575\(00\)00055-5](https://doi.org/10.1016/S0001-4575(00)00055-5)
- Mather, M., Jacobsen, L. A., Jarosz, B., Kilduff, L., Lee, A., Pollard, K. M., Scommegna, P., & Vanorman, A. (2019). America's changing population: What to expect in the 2020 census. *Population Bulletin*, 74(1).
- Mattson, J. (2011). Aging and Mobility in Rural and Small Urban Areas: A Survey of North Dakota. *Journal of Applied Gerontology: The Official Journal of the Southern Gerontological Society*, 30(6), 700–718. <https://doi.org/10.1177/0733464810378107>

- Mattson, J. (2012). *Travel Behavior and Mobility of Transportation-Disadvantaged Populations: Evidence from the National Household Travel Survey* (Research Report DP-258; p. 57). Upper Great Plains Transportation Institute.
- Mattson, J. (2017). *2017 Rural Transit Fact Book* (SURLC 17-007; p. 60). North Dakota State University.
- McGuckin, N., & Fucci, A. (2018). *Summary of Travel Trends: 2017 National Household Travel Survey* (FHWA-PL-18-019; p. ORNL/TM-2004/297, 885762). Federal Highway Administration. <https://doi.org/10.2172/885762>
- Meals on Wheels America. (n.d.). *Find Meals | Meals on Wheels America*. Retrieved July 10, 2023, from <https://www.mealsonwheelsamerica.org/signup/aboutmealsonwheels/find-programs?filter=53211>
- Metz, D. H. (2000). Mobility of older people and their quality of life. *Transport Policy*, 7(2), 149–152. [https://doi.org/10.1016/S0967-070X\(00\)00004-4](https://doi.org/10.1016/S0967-070X(00)00004-4)
- Mindell, J. S., Cohen, D. L., Shelton, N. J., Sutaria, S., Hayward, A., & Watkins, S. J. (2014). Transport and clinical practice. *Journal of Transport & Health*, 1(1), 73–80.
- Mulley, C. (2010). Promoting social inclusion in a deregulated environment: Extending accessibility using collective taxi-based services. *Research in Transportation Economics*, 29(1), 296–303. <https://doi.org/10.1016/j.retrec.2010.07.037>
- Mulley, C., & Nelson, J. D. (2009). Flexible transport services: A new market opportunity for public transport. *Research in Transportation Economics*, 25(1), 39–45. <https://doi.org/10.1016/j.retrec.2009.08.008>

- National Aging and Disability Transportation Center. (2018, December 7). *New National Poll: Inability to Drive, Lack of Transportation Options are Major Concerns for Older Adults, People With Disabilities and Caregivers*. <https://www.prnewswire.com/news-releases/new-national-poll-inability-to-drive-lack-of-transportation-options-are-major-concerns-for-older-adults-people-with-disabilities-and-caregivers-300761774.html>
- National Aging and Disability Transportation Center, & KRC Research. (2018). *Transportation Needs and Assessment: Survey of Older Adults, People with Disabilities, and Caregivers*. <http://www.nadtc.org/wp-content/uploads/FINAL-NADTC-KRC-Polling-report.pdf>
- NCWRPC. (n.d.). *North Central Wisconsin Regional Planning Commission*. North Central Wisconsin Regional Planning Commission. Retrieved July 10, 2023, from <https://www.ncwrpc.org/ncwrpc2021/>
- Nocon, A., & Pearson, M. (2000). The roles of friends and neighbours in providing support for older people. *Ageing and Society*, 20(3), 341–367. <https://doi.org/10.1017/S0144686X99007771>
- Ortman, J. M., Velkoff, V. A., & Hogan, H. (2014). *An Aging Nation: The Older Population in the United States* (pp. 25–1124). United States Census Bureau, Economics and Statistics Administration, US Department of Commerce.
- Oxley, J., & Whelan, M. (2008). It Cannot Be All about Safety: The Benefits of Prolonged Mobility. *Traffic Injury Prevention*, 9(4), 367–378. <https://doi.org/10.1080/15389580801895285>

- Peel, N., Westmoreland, J., & Steinberg, M. (2002). Transport safety for older people: A study of their experiences, perceptions and management needs. *Injury Control and Safety Promotion, 9*(1), 19–24. <https://doi.org/10.1076/icsp.9.1.19.3327>
- Pucher, J., & Renne, J. L. (2005). Rural mobility and mode choice: Evidence from the 2001 National Household Travel Survey. *Transportation, 32*(2), 165–186. <https://doi.org/10.1007/s11116-004-5508-3>
- Rahman, M. (2016). Transportation alternative preferences of the aging population. *Travel Behaviour and Society, 4*, 22–28.
- Richter, F. (2022). *Cars Still Dominate the American Commute*. Statista Infographics. <https://www.statista.com/chart/18208/means-of-transportation-used-by-us-commuters/>
- Ritter, A. S., Straight, A., & Evans, E. (2002). *Understanding Senior Transportation: Report and Analysis of a Survey of Consumers Age 50+*. AARP.
- Rosenbloom, S. (2001). Driving Cessation Among Older People: When Does It Happen and What Impact Does It Have? *Transportation Research Record, 1779*(1), 93–99. <https://doi.org/10.3141/1779-13>
- Rosenbloom, S. (2004). The Mobility Needs of Older Americans. *Taking the High Road: A Transportation Agenda of Strengthening Metropolitan Areas*, 227–254.
- Rosenbloom, S. (2009). Meeting Transportation Needs in an Aging-Friendly Community. *Generations: Journal of the American Society on Aging, 33*(2), 33–43.

- Satariano, W. A., Guralnik, J. M., Jackson, R. J., Marottoli, R. A., Phelan, E. A., & Prohaska, T. R. (2012). Mobility and Aging: New Directions for Public Health Action. *American Journal of Public Health, 102*(8), 1508–1515. <https://doi.org/10.2105/AJPH.2011.300631>
- Seeman, T. E. (1996). Social ties and health: The benefits of social integration. *Annals of Epidemiology, 6*(5), 442–451. [https://doi.org/10.1016/S1047-2797\(96\)00095-6](https://doi.org/10.1016/S1047-2797(96)00095-6)
- Serow, W. J. (2001). Retirement migration counties in the southeastern United States: Geographic, demographic, and economic correlates. *The Gerontologist, 41*(2), 220–228.
- Shergold, I., Parkhurst, G., & Musselwhite, C. (2012). Rural car dependence: An emerging barrier to community activity for older people. *Transportation Planning and Technology, 35*(1), 69–85.
- Singh, G.K., & Siahpush, M. (2014). Widening rural-urban disparities in life expectancy, U.S., 1969-2009. *American Journal of Preventive Medicine, 46*(2). e19-e29. <https://doi.org/10.1016/j.amepre.2013.10.017>.
- Smith, M., Prohaska, T. R., MacLeod, K. E., Ory, M. G., Eisenstein, A. R., Ragland, D. R., Irmiter, C., Towne, S. D., & Satariano, W. A. (2017). Non-Emergency Medical Transportation Needs of Middle-Aged and Older Adults: A Rural-Urban Comparison in Delaware, USA. *International Journal of Environmental Research and Public Health, 14*(2), Article 2. <https://doi.org/10.3390/ijerph14020174>
- SSM Health. (n.d.). *SSM Health at Home—Meals on Wheels*. Retrieved July 10, 2023, from <https://www.ssmhealth.com/services/health-at-home/meals-on-wheels>
- Transportation | Dane County TimeBank. (n.d.). Retrieved June 28, 2021, from <https://danecountytimebank.org/projects/transportation-0>

United Nations. (2019). *Ageing*. United Nations; United Nations. <https://www.un.org/en/global-issues/ageing>

U.S. Government Accountability Office. (2014). *Public Transportation: Federal Role Key to Rural and Tribal Transit* (GAO-14-589). U.S. Government Accountability Office. <https://www.gao.gov/products/gao-14-589>

Vivoda, J. M., Harmon, A. C., Babulal, G. M., & Zikmund-Fisher, B. J. (2018). E-hail (Rideshare) Knowledge, Use, Reliance, and Future Expectations among Older Adults. *Transportation Research. Part F, Traffic Psychology and Behaviour*, 55, 426–434. <https://doi.org/10.1016/j.trf.2018.03.020>

Vos, E. E., de Bruin, S. R., Pees, S., van der Beek, A. J., & Proper, K. I. (2023). Views of Older Adults on Using Support to Prevent Overload in Informal Caregivers: Results of a Story Completion Study. *Health & Social Care in the Community*, 2023, e2896578. <https://doi.org/10.1155/2023/2896578>

Wang, D., Chai, Y., & Li, F. (2011). Built environment diversities and activity–travel behaviour variations in Beijing, China. *Journal of Transport Geography*, 19(6), 1173–1186. <https://doi.org/10.1016/j.jtrangeo.2011.03.008>

Wisconsin Department of Health Services. (2018). *State of Wisconsin Aging Plan for Older People Federal Fiscal 2019-2021*. <https://www.dhs.wisconsin.gov/aging/aging-plan-2019-2021.pdf>

Wisconsin Department of Health Services. (2022, July 19). *Aging: Elder Nutrition Program*. <https://www.dhs.wisconsin.gov/aging/nutrition.htm>

Wisconsin Department of Transportation. (2021). *Wisconsin Public Transit Systems 2021*.

Wisconsin Department of Transportation.

<https://wisconsin.gov/Documents/travel/pub-transit/system-map.pdf>

Wisconsin Department of Transportation Transit assistance programs. (n.d.). Retrieved July 10,

2023, from [https://wisconsin.gov/pages/doing-bus/local-gov/astnce-](https://wisconsin.gov/pages/doing-bus/local-gov/astnce-pgms/transit/default.aspx)

[pgms/transit/default.aspx](https://wisconsin.gov/pages/doing-bus/local-gov/astnce-pgms/transit/default.aspx)

WisDOT. (2015). *Mobility Management Practices in Wisconsin*.

[https://wisconsin.gov/Documents/doing-bus/local-gov/astnce-pgms/transit/mob-](https://wisconsin.gov/Documents/doing-bus/local-gov/astnce-pgms/transit/mob-prac.pdf)

[prac.pdf](https://wisconsin.gov/Documents/doing-bus/local-gov/astnce-pgms/transit/mob-prac.pdf)

WisDOT. (2021). Cycle 45 5310 Grant Awards—2021. *Mobility Management*.

Yang, L., Hu, L., & Wang, Z. (2019). The built environment and trip chaining behaviour revisited:

The joint effects of the modifiable areal unit problem and tour purpose. *Urban Studies*,

56(4), 795–817. <https://doi.org/10.1177/0042098017749188>

Yu, J., Trisha, S., Liu, X., Willman, J., & Beimborn, E. (2019). *Connecting Wisconsin of Tomorrow:*

Methods to Improve Public Mobility under Future Social, Economic and Technological

Changes. [https://cpb-us-w2.wpmucdn.com/sites.uwm.edu/dist/f/422/files/2020/04/02-](https://cpb-us-w2.wpmucdn.com/sites.uwm.edu/dist/f/422/files/2020/04/02-WMaaS-FULL-REPORT-_23rd_july.pdf)

[WMaaS-FULL-REPORT-_23rd_july.pdf](https://cpb-us-w2.wpmucdn.com/sites.uwm.edu/dist/f/422/files/2020/04/02-WMaaS-FULL-REPORT-_23rd_july.pdf)

Appendices

Appendix A Template of Statewide Survey Questionnaire (Older Adults)



2021 Wisconsin Older Adult Transportation Service Survey



SURVEY REGISTRATION NO:

RESPONDED BY:

April 30, 2021

Dear Wisconsin Senior Resident,

Greetings! The University of Wisconsin – Milwaukee and the Wisconsin Department of Transportation need your help to **better understand and address the mobility needs of Wisconsin’s older adults.**

Residents throughout Wisconsin are sharing input and we ask that you join them by taking the provided survey. **Please fill in the survey and return it promptly** using the enclosed postage paid reply envelope, by **dropping it off** at your county Aging & Disability Resource Center (ADRC), your **senior center**, or by giving it to your **meal service or transportation service driver.**

The survey will ask:

- 1) how you use information technology;**
- 2) how you travel;**
- 3) how satisfied you are with your travel;**
- 4) your travel challenges and limitations;**
- and**
- 5) your suggestions for improvements in Wisconsin’s transportation services.**

It should take about **fifteen minutes or less** to complete, and you can skip any questions you don’t want to answer. Information collected will be kept confidential, and survey responses will be combined to give general overall results.

If an online survey is more convenient to you, please go to [tiny.one/olderadults](https://www.tiny.one/olderadults) and skip this printed survey.

At the end of the survey, you may provide your name and contact information if you choose to volunteer for a follow-up focus group survey. Your names and contact information will be stored separately from study data, and all individual responses will be deleted at the end of the project. If you don’t want to be contacted, you may skip this section.

Please return your completed survey without delay to ensure that your voice is heard. Your participation may have a lasting impact on your community and lead to better transportation services. We greatly appreciate your contribution!

2021 Wisconsin Older Adult Transportation Service Survey

1. Do you have access to the Internet?

- I do not have access to the Internet
- I have limited access to the Internet at home
- I have access to the Internet at home, but do not use it because I am worried about its security
- I have access to the Internet at home and use it regularly
- I have access to the Internet only outside the home

2. How often do you use the Internet?

- Multiple times per day
- Once a day
- Weekly
- Monthly
- Rarely/Never



3. How easy is it for you to use the Internet?

- Very easy
- Somewhat easy
- Neutral
- Somewhat difficult
- Very difficult
- Extremely difficult



4. Which of the following do you use? (Check ALL that apply)

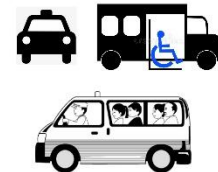
- Desktop computer
- Tablet (iPad or similar)
- Laptop computer
- Kindle
- Apple iPhone or another smart phone device
- Wearables (health tracker)
- Simple portable cell phone
- None

5. What do you use your computer/device for? (Check ALL that apply for NOW and BEFORE COVID-19)

	Now	Before COVID
Send or receive emails	<input type="checkbox"/>	<input type="checkbox"/>
Send or receive text messages	<input type="checkbox"/>	<input type="checkbox"/>
Find online driving directions to a place	<input type="checkbox"/>	<input type="checkbox"/>
Use online banking or financial transactions	<input type="checkbox"/>	<input type="checkbox"/>
Get online shopping (e.g., Amazon)	<input type="checkbox"/>	<input type="checkbox"/>
Use social media (e.g., Twitter, Facebook, Instagram)	<input type="checkbox"/>	<input type="checkbox"/>
Request a ride (e.g., Uber, Lyft)	<input type="checkbox"/>	<input type="checkbox"/>
Manage or receive online medical care	<input type="checkbox"/>	<input type="checkbox"/>
Talk to people with Zoom, Facetime or something similar	<input type="checkbox"/>	<input type="checkbox"/>
Others (please specify)	<input type="checkbox"/>	<input type="checkbox"/>

6. How do you find information about transportation services like bus or taxi?

- Friends/family give me information
- Electronic (website, email, social media)
- Telephone (phone book)
- Local government offices (Health Department, etc.)
- Printed materials from a doctor's office, library or local nonprofit organization
- Faith-based organization (church, etc.)
- Place(s) where I work or volunteer
- Others (please specify)



7. BEFORE COVID-19, how often did you...?

	Rarely/Never	A few times per year	A few times per month	A few times per week	Daily
Drive my own vehicle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get rides from family/friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use local bus service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use a private taxicab, Uber or Lyft	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use a public shared-ride taxi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get rides from local ADRC, senior center, and/or residence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use a volunteer driver program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other – walk, bike, etc. (please specify):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>




8. NOW during COVID-19, how often do you...?

	Rarely/Never	A few times per year	A few times per month	A few times per week	Daily
Drive my own vehicle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get rides from family/friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use local bus service	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use a private taxicab, Uber or Lyft	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use a public shared-ride taxi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get rides from local ADRC, senior center, and/or residence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use a volunteer driver program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other – walk, bike, etc. (please specify):	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. How **OFTEN**, if ever, do you make trips for...?

	Rarely/Never	A few times per year	A few times per month	A few times per week	Daily
Job or volunteer activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hospital/medical office visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacy visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buying groceries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visiting with family/friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attending church/place of worship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Banking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal care (e.g., post office, hair care, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attending social/community event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dining	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please describe)					
<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. In general, how **SATISFIED** are you with the local transportation service you use most often?

- Very satisfied 
- Somewhat satisfied 
- Neutral 
- Somewhat dissatisfied 
- Very dissatisfied 
- No opinion. I never use local transportation

11. How **IMPORTANT** are the following features of transportation when you take a trip?

	Least Important					Most Important
	1	2	3	4	5	
Ride comes on time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Ride is available at the time I need it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Vehicle takes me to where I want to go	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
There is real time information that tells me when the service will arrive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I do not need to schedule my trip days in advance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I can arrange my trip with an app or website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
There is "one call does it all" for all transportation service information I want to know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
There is good coordination between transportation and medical services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
There is a travel trainer who will escort and teach me about using transportation services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
The cost of the trip is affordable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
It is easy to pay for the trip by credit card or vouchers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Vehicle is equipped with ramp or wheelchair lift	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I feel safe on the vehicle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Vehicle is comfortable and clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
I can carry as many bags as I need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Language assistance is available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Others (please specify)						
<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

3

12. What **PROBLEMS** have you experienced when using (or attempting to use) transportation services in the last two years? (Check ALL that apply in the)

Transportation is not available WHERE I need to go. <input type="checkbox"/>	Transportation is not available WHEN I need it (evenings, weekends, etc.). <input type="checkbox"/>	Scheduled rides are late, do not come, or get cancelled. <input type="checkbox"/>	Transportation must be scheduled too far in advance, cannot accommodate changes to my needs. <input type="checkbox"/>	I must make multiple phone calls to receive transportation service. <input type="checkbox"/>
Real time transportation tracking information is not available. <input type="checkbox"/>	Rides are only available for medical trips. <input type="checkbox"/>	There is no ADA-accessible transportation service in my community. <input type="checkbox"/>	The number of bags I have exceeds is the number allowed by the transportation service. <input type="checkbox"/>	I have difficulty getting into/out of the vehicle. <input type="checkbox"/>
I cannot afford the cost of the transportation service. <input type="checkbox"/>	My mobility device (e.g., wheelchair) is not allowed on the service vehicle. <input type="checkbox"/>	I have difficulty understanding the driver. <input type="checkbox"/>	I have difficulty understanding how to schedule rides, how to pay for them, or other basic service details. <input type="checkbox"/>	I have NOT experienced any travel problems. <input type="checkbox"/>

Others (please describe)

13. Have you **STOPPED** using transportation due to the above problems?

- Yes
- No

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14. What **SUGGESTIONS** do you have to improve transportation services?

15. Please tell us about yourself

Gender

Age

Race

Number of people living with you

Your Zip Code

16. What is your employment status?

Employed full-time

Employed part-time

Unemployed (looking for work)

Retired (not working)

Other (please specify)

17. What was your annual household income last year, before taxes?

Less than \$10,000 \$10,000 to \$24,999

\$25,000 to \$49,999 \$50,000 to \$74,999

\$75,000 to \$99,999 \$100,000 or more

Prefer not to answer

18. Which of the following best describes your residence?

I live in a home I own I live in a home I rent

I live at an independent living facility

I live at an assisted living facility

I live in a nursing home

I live with adult children or other family

Other (please specify)

19. Do you use a mobility device when travelling?

Yes No



20. If you answered "YES," What type of mobility device do you use?

Walker

Cane

Manual wheelchair

Power wheelchair

Scooter

Others (please specify)

21. If English is not your first language, please tell us what it is?

22. In a future part of this study, we will be holding one-hour round table discussion to gain a better understanding of your ideas on transportation problems and improvements. These will be held via a call-in or online meeting. Each participant will receive a \$20 gift card as compensation. Would you be willing to participate in one of these discussions?

Yes No

23. If YES, please provide:

Name

Email

Phone

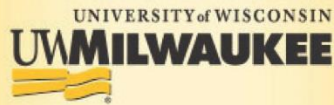
Please feel free to ask assistance from your local ADRC or senior center should you have any questions when you fill out the survey.

You can also reach out our survey coordinator: Anne Lupton, email: sandhill7564@gmail.com




THANK YOU!

Please return it using the enclosed postage paid reply envelope, by dropping it off at your county Aging & Disability Resource Center (ADRC) and senior center, or by giving it to your meal service or transportation service driver.



Default Question Block

2021 Wisconsin Older Adult Transportation Service Survey

Dear Wisconsin Transportation Service Provider or Mobility Manager,

Greetings! The University of Wisconsin – Milwaukee is conducting a study sponsored by the Wisconsin Department of Transportation to better **understand and address the mobility needs of Wisconsin’s older adult residents**. As part of this study, we are conducting a survey of this population who live in areas not served by regular fixed-route transit. This survey will sample older adults who have used other types of transportation services or who currently have meals delivered or need deliveries due to mobility limitations or income status.

At the same time, we are also conducting a survey of transportation service providers and mobility managers who assist older adults and therefore understand how they learn about and use transportation services.

This survey will ask:

- 1) How older adults use transportation services;**
- 2) How older adults use information technology;**
- 3) Transportation service gaps and limitations, and**
- 4) Suggestions for future improvements in Wisconsin’s transportation services.**

The survey should take **fifteen minutes** or less to complete. **Your survey responses will be used to inform decision-making at the state and county**

level to improve transportation options. Information collected will be kept confidential and survey responses will be combined to give general overall results. We will request names, agency/employer, and contact information because we may follow up with you to clarify your responses. Your names and contact information will be stored separately from study data, and all individual responses will be deleted at the end of the project. If you don't want to be contacted, you may skip this section.

Please **contact Anne Lupton** at sandhill7564@gmail.com should you **have any questions** when you fill out the survey. Your timely completion of this survey will ensure that your voice is heard and may have a lasting impact on your community. We greatly appreciate your contributions.

Respectfully,

Jie Yu, Ph.D. (Project PI)
Assistant Professor
Department of Civil and Environmental Engineering
University of Wisconsin at Milwaukee, WI53211
yu22@uwm.edu

1. What is your agency's primary role in providing services for older adults?

- a) We provide transportation services to older adults
- b) We connect people to transportation services in our community
- c) BOTH (a) and (b)

2. What transportation service(s) do you provide? (Please check ALL that apply)

- Local fixed-route bus service
- Local shared-ride taxi service

- Private taxicab service
- Local aging office or senior center transportation service
- Volunteer driver program
- Non-emergency medical transportation (NEMT)
- Veteran transportation service
- Employment transportation service
- Others, please specify

3. Who provides the rides? (Please check ALL answers that apply)

- Volunteer drivers
- Agency staff
- A third-party transportation provider under contract or MOU with your agency
- Others, please specify

4. Typically, how do your clients book transportation service(s)?

	Never	Rarely	Sometimes	Fairly Often	Very Often
Phone call	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Text message	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Rarely	Sometimes	Fairly Often	Very Often
iPhone app	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Walk-in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)					
<input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Typically, how far in advance do your clients book the service?

	Never	Rarely	Sometimes	Fairly Often	Very Often
<12 hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12-24 hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24-48 hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
> 48 hours	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Typically, how long after a client books a ride with your agency does your agency confirm the booking?

- Instantly as requested
- The next day
- After a couple of days
- Others, please specify

7. Does your agency use a software product to schedule rides?

Yes

No

What is the software? Would you recommend it to others and why or why not?

8. What mobility management service(s) does your agency perform? (Please check ALL that apply)

- Conduct mobility needs assessments for seniors
- Coordinate funding, service and programs
- Trip planning
- Develop inventory of transportation services available
- Training for volunteer drivers
- Travel training for customers
- Transportation marketing
- Others, please specify

9. How do you share information about your agency's transportation services

to your clients? (Please check ALL that apply)

- Newsletter
- Brochure
- Social media
- Website
- Email
- Distribute through religious organization(s)
- Distribute through social service organization(s)
- Others, please specify

10. In a typical month, approximately what percent of your clients have the following trip purposes?

	0%	<20%	21-40%	41-60%	61-80%	>80%
Job or volunteer activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hospital/medical office visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pharmacy visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buying groceries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visiting with family/friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attending church/place of worship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Banking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal care (post office, hair care, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	0%	<20%	21-40%	41-60%	61-80%	>80%
Attending social or community event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exercise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dining	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>					

11. How often do the following health concerns affect the ability of your clients to travel?

	Never	Rarely	Sometimes	Fairly Often	Very Often
No health concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deafness or acute difficulty hearing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blindness or acute difficulty seeing (even with glasses)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Substantial difficulty walking or climbing steps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Substantial cognitive difficulties	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="text"/>				

12. In your opinion, how **IMPORTANT are the following transportation features**

for senior clients? (1=least important and 5=most important)

	1	2	3	4	5
Ride comes on time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ride is available at the time when needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ride is available to where client wants to go	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is real time information that tells client when the service will arrive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Client doesn't need to schedule days in advance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Client can arrange his/her trip with an app or website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is "one call does it all" for all transportation service information client wants to know	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is good coordination between transportation and medical services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is a travel trainer who will escort and teach client using transportation services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The cost of the trip is affordable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy to pay for the trip by credit card or vouchers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vehicle is equipped with either a ramp or wheelchair lift	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Driver is someone the client feels safe with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vehicle is comfortable and clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Client is allowed to carry as many bags as needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Language assistance is available	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1	2	3	4	5
Other (please specify):					
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. In general, how would you rate the **attitudes of your clients towards transportation services in your community?**

- Very positive
- Positive
- Neutral
- Negative
- Very negative
- I don't know

14. What **PROBLEMS have you experienced in providing transportation that meets your client's needs?**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Limited agency budget	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not enough capacity to serve current demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of drivers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of transit managers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of scheduling software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Insufficient vehicle/equipment maintenance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Poor road conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<div style="border: 1px solid black; height: 40px; width: 100%;"></div>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. What transportation service improvements do you think would be **beneficial to your senior clients? (1=least beneficial and 5=most beneficial)**

	1	2	3	4	5
“One call does it all” for information about all available services and options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A smart trip assistance tool providing a customized trip plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Better coordination between medical care and local transportation service/program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regional website for scheduling trips	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of additional travel trainers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of additional mobility managers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ride vouchers or other, more convenient payment options for regular users	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Additional marketing of local transportation services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1	2	3	4	5
Improving guides that explain how to use local transportation services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expansion of existing services to improve their availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify): <div style="border: 1px solid black; height: 60px; width: 250px; margin-top: 5px;"></div>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Among the improvements listed above, which do you think would be most readily implementable in your agency or community? (Please check ALL that apply)

- "One call does it all" for information about all available services and options
- A smart trip assistance tool providing a customized trip plan
- Better coordination between medical care and local transportation service/program
- Regional website for scheduling trips
- Availability of additional travel trainers
- Availability of additional mobility managers
- Ride vouchers or other, more convenient payment options for regular users
- Additional marketing of local transportation services
- Improving guides that explain how to use local transportation services
- Expansion of existing services to improve their availability

17. How have **senior riders** changed their use of transportation services in response to the COVID-19 pandemic?

18. How have **transportation services** been changed (e.g., changes on ridership, cost, and revenue, supplement special service, etc.) in response to the COVID-19 pandemic?

19. What plans have you made about your services **once COVID-19 is under control** (i.e., whether the service will undergo permanent changes and how)?

20. Please list any **other suggestions** to improve transportation service(s) for

older adults in your community.

21. What are the most significant transportation service **coordination issues** that your agency encounters?

22. Please list any **suggestions** to improve mobility coordination efforts in your county/service area.

23. In a future part of this study, we will be holding **one-hour round table discussion** to gain a better understanding of your ideas on transportation problems and improvements. These will be held via a **call-in** or **online** meeting. Would you be willing to participate in one of these discussions?

Yes

No

Please tell us about yourself

Name

Title

Agency Name

Email

Telephone

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