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Transit Fare Discount Processing Improvements for Disadvantaged Populations

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Transportation connects citizens to their communities and is critical to healthy aging. Globally, the world population continues to live longer, presenting important implications and challenges to economic and social policy. By 2050, 16% of the world's population will be ages 65 and older, up from 9% in 2018 (Kaneda, Greenbaum & Patierno, 2018). Unprecedented longevity means we are not only more likely to outlive our driving expectancy, but that there will be greater demand for a wide range of transportation services to get us from point A to point B.

Across Massachusetts (MA), older adults frequently face decisions about making changes to their daily modes of transportation as they age. Though population aging is not unique to MA, MA is slightly older than the general U.S. population (Dugan et al., 2014). By 2030, 21% of the state population in Massachusetts will be aged 65 and up (Dugan et al., 2014). At the same time, MA also has one of the oldest and most comprehensive public transportation systems in the U.S. (MBTA, n.d.). Consequently, MA is an interesting case study to consider the impact of population aging around the access to and use of transportation services and systems.

There are several state and local resources available to residents who are 65 and older, including reduced fare designations on fixed route public transit, transportation services through Councils on Aging and senior centers, and shared ride, origin-to-destination, ADA-compliant public paratransit services like The RIDE and WAV-accessible vehicles through private ride-sharing companies (e.g., Lyft or Uber). However, 2018 data from the MA Healthy Aging Collaborative suggest the highest concentration of senior transportation service providers (including medical and nonmedical transportation) is in Boston (Dugan, Porell, & Silverstein, 2018). Additionally, these same data suggest the Boston, Cambridge, and Somerville areas have some of the lowest percentages of licensed drivers ages 61+ and smallest percentages of vehicle owners aged 65+ relative to the rest of the state. In addition to age-specific services, the Massachusetts Bay Transit Authority (MBTA) is the division of the Massachusetts Department of Transportation and public agency responsible for most public transportation services in greater Boston, including offering reduced fares for older adults and The RIDE. As a result, the following study focuses on transportation experiences and service use among a sample of older adults from the greater Boston area.

To date, the MBTA does not have a systematic and/or working definition of "transit-dependent older adult." As a result, little is known about the older transit users who use these services as well as the best practices the MBTA and other area resources use (if any) in order to identify and better serve this population of older adults. Data from the American Community Survey suggest the highest concentrations of older adults (60+) within greater Boston neighborhoods include West Roxbury, Hyde Park, and South Dorchester. However, neighborhoods with high concentrations of older adults and low personal vehicle ownership include Allston-Brighton, Fenway/Kenmore, and the South End. These data also suggest that the older adult population is becoming increasingly racially, ethnically, economically and linguistically diverse, presenting future opportunities and challenges for the MBTA as it works to better serve different constituencies.

The MBTA is designing a new fare payment system (Automated Fare Collection 2.0 or AFC 2.0, implementation delayed until further notice), to centralize fare collection through an account-based instead of a value-based system. AFC 2.0 expands payment options and uses group designations to assign fare privileges to specific populations, including older adults (MBTA, n.d.). However, little is known about how proposed changes to the fare payment system and the reduced fare application process will impact vulnerable, transit-dependent populations in the area.

The following study begins to fill these gaps by first understanding how community-dwelling older adults in the greater Boston area integrate diverse modes of transportation into their daily lives, make decisions around driving transitions, and receive and interpret new information from local transit agencies about proposed changes to current processes.

Methodology

In addition to developing an understanding of the needs of older transit users in general, of particular importance are the transportation needs of those aged 85 years and older. The 85+ age demographic is one of the fastest growing age demographics within the greater U.S. population (Institute on Aging, n.d.). For this group, getting around may take more time, effort and planning compared to their younger counterparts. Additionally, a lack of affordable and accessible options and alternatives makes transportation in later life a unique challenge to tackle. As a result, the present study investigated the transportation attitudes, experiences and behaviors of a panel of 23 adults, all over the age of 85, who live in the greater metro-Boston area.

On January 28, 2019, a panel was convened in order to explore participants' changes to their transportation and mobility needs over time as well as their experiences with transitions to new kinds of transportation modes. The majority of panel participants also utilize some transit benefit available to older adults through the MBTA (e.g., The RIDE, reduced fare CharlieCard, etc.). A survey was conducted prior to the workshop in order to gain a baseline understanding of the panel's experiences and satisfaction with various modes of transportation, including use of local transit services. This questionnaire also collected self-regulation behaviors among drivers, sources of knowledge for transitioning to alternative modes of transportation, and general technology experience. Surveys were administered online (for Internet users) or via mail and/or in-person (for non-Internet users).

A large group presentation from a Community Outreach Specialist from MBTA's AFC 2.0 project as well as a Senior Innovation Analyst from the MBTA Office for Transportation Access was given to the group in order to familiarize participants with the AFC 2.0 project as well as potential age-related benefits available to them through the MBTA. Following this presentation, four concurrent, 60-minute focus groups were held in order to take a deeper dive into participants' knowledge and attitudes toward these services. Facilitators of these groups asked participants about: 1) their experiences with daily modes of transportation; 2) the trip prioritization process; and 3) the driving cessation process. The facilitation guide for these groups also included questions around how information from public agencies like the MBTA is shared as well as the role future transportation technologies will play in shaping mobility. Data from this session were collected and analyzed.

This session was a part of an ongoing bimonthly panel that meets to discuss and deconstruct issues and experiences related to aging and longevity. All participants in this session were between the ages of 86 to 95. In this particular study, 68.8% of the sample was female (n=11) and 30.4% were widowed (n=7). The majority of participants self-reported living in a suburban area (57.1%, n=8) instead of an urban area (42.9%, n=6). Overall, this sample of older adults has higher incomes, is more educated, more racially homogeneous, and has better self-rated health than the general 85+ U.S. population. Despite this lack of sample generalizability, challenges that this particular group identifies around information, access and use of transportation services may be amplified among older adults in the community who are less well-resourced. Further, the group offers insights to consider for future generations of older adults.

Though the workshop with the 85+ panel was the primary data collection effort of interest for this study, there was also a brief site visit to the City of Waltham Council on Aging in mid-November 2018 for informal field observation of a Senior CharlieCard sign up event. Potential stakeholders at this event included event volunteers, older adult card applicants, and council on aging staff. This field observation was done in order to gain an initial understanding of how information about access to this particular MBTA benefit is shared and processed within the context of a single service provider. Additional written materials including webpages, reports and other text publicly available from MBTA detailing Senior CharlieCard application processes and event hosting rules as well as information about the transition to AFC 2.0 and subsequent changes to fare designations were reviewed.

Findings

Participants from the research panel are largely as mobile (and perhaps even driving for longer) compared to the general U.S. population in a similar age demographic. According to a 2014-2017 survey by the American Automobile Association (AAA), fewer than half of people aged 75 or older reported they drove almost every day. While data from this same report for individuals aged 85 and older were unavailable, the percentage of frequent drivers is likely smaller. Three-quarters (75%) of participants report they use driving as their primary mode of transportation, while over 60% report they drive every day or almost every day. Participants generally viewed driving more positively than other modes of transportation. Driving was also more commonly associated with convenience, comfort, reliability, efficiency, enjoyment, and accessibility compared to other modes (e.g., walking, biking, subway, etc.).

However, as participants have aged, driving has become more difficult. Among participants who still drive, the majority report decreased feelings of calmness, increased levels of physical fatigue, increased dependence on others, increased stress or anxiety when getting around, and an increased amount of planning associated with transportation. The difficulties of city driving, in particular, came up frequently within the focus groups. Inclement weather, parking difficulties, road safety and difficulty seeing in the dark were also all cited as barriers to driving. When these challenges become too difficult to manage, participants often have to turn to alternative modes of transportation. In fact, over half of participants who identified as still driving (n=13) also reported they expect to stop driving within the next five years.

As a whole, the majority of participants are satisfied with and do not feel limited by their current modes of transportation. A majority (70%) of panelists reported convenience as an advantage of their current primary mode of transportation. For the most part, participants rely on transportation for completing necessary errands like attending medical appointments and grocery shopping as well as errands that can be planned in advance. During the focus groups, the concept of spontaneity, particularly related to trips for socializing or going out for meals, came up the most often as a major change and drawback related to decreased mobility. For some participants, online services can fill this gap: "Trips you give up? Shopping particularly. Grocery shopping, I manage, but other kinds of shopping… the sort of vague and leisurely stuff. I only go shopping if I have a place to go to for a reason, otherwise forget it. I do more online stuff." While people's trip priorities may change in later life, preferred choices for transportation may also shift as driving ends, resulting in more people relying on public services including public transit and paratransit. As Table 1 displays, though the majority of participants in the panel still drive, there have been slight shifts in transportation mode choice over time, even within the past ten years.

The role of public transportation services

When asked about the public transit options participants most frequently utilize [see Table 1], participants were most familiar with The RIDE, the local paratransit service. As Table 1 shows, most significant change panel respondents reported around transportation over the past ten years was around shifting to using The Ride as their primary mode of transportation. During focus groups, participants frequently mentioned that relying on The RIDE requires a high degree of planning as well as more time set aside for transit. As one frequent user of The RIDE described it, "The disadvantage [of The RIDE] is, sometimes, they pick us up from here and they have two other people. If you're going to [a western suburb], they have to go to Medford or Roxbury first, and it takes almost two-and-a-half hours to get home."

However, participants also expressed satisfaction with The RIDE's accessibility compared with other types of transit, including private ride-sharing (e.g., Uber, Lyft) or public transportation (e.g., the subway). A female participant who relies on a rollator for daily mobility details, "I find that The RIDE for me has one quality – is that they know their ridership. They help you open the door, they walk you to the door, they carry something if necessary and more and more I find that that is a very useful and very kind thing and it induces my feeling of security." Another participant, and frequent RIDE user, mentioned, "I find that the drivers of The RIDE are extremely solicitous. They are so concerned about my comfort and safety."

While participants use a variety of modes to get around, public transit (e.g., buses and trains) was cited as the least "age-friendly" option. In commenting on the subway system one participant said, "Somehow the train is just a little more than I can take right now. Going down stairs or finding the elevator or just the narrowness of the corridors frightens me because I'm not steady on my feet, and I have this vision of ending up on the railroad tracks." Another participant who used buses explained, "I do have a problem because of my age and imbalance. I have trouble now getting on and off buses and trains. So, I hold on tight. I have noticed that when I get on the bus the driver, most of the time, will jerk the bus forward and I have, in the past, landed in the lap of a fellow passenger trying to get to my seat. I make it a point now to say to the driver, please do not start until all of us are seated. Even younger, able-bodied people have this problem." Yet not all is lost for public transit, as the experience of riding with others can also have its own advantages. In the words of one panelist: "this is an observation, and it tells how nice people are. When I get on the T [the MBTA's transit system], invariably somebody gets up and gives me a seat. I was amazed once a late term, soon-to-be-mom got up and gave me her seat."

On accessing benefits

Participants have wide and varied experiences with accessing transportation benefits available to older adults in MA and, in general, have had to learn to use a new mode of transportation at least once throughout their life. Among participants who reported, 30.4% indicated they have had to learn to use Uber/Lyt and/or The RIDE in the past decade. Participants also most often reported using a website in order to learn about a new mode of transportation (30.4%). Advice from family, friends or neighbors was closely behind (26.1%). Many participants had few problems accessing new transit benefits. As one participant explained, "When you apply [to The RIDE] and they accept you to be eligible for it, then you get a booklet [explaining all the service information]. Then it's pretty easy." Another mentioned, "They [The RIDE] advertise themselves very well. The name is right on the side of the cab."

However, not all participants have had an easy time using these benefits. On the day-to-day inconvenience of scheduling, one participant commented, "It's no problem [for my hearing] because I have a cap [captioned] telephone. However, The RIDE in their little message say you can save time by booking online or at something.com, but when there are times involved and all kinds of destinations I just don't trust the online way of booking." In addition to daily inconveniences, the process of obtaining a Senior CharlieCard is complex.

Based on informal observations of the Waltham Council on Aging site as well as a review of MBTA material, eligible applicants must bring a valid, government-issued license or ID for proof of age to the Downtown Crossing CharlieCard store in Boston. Following approval (it is unclear what this process is at this time), applicants receive a 30-day Senior CharlieTicket valid for use while the Senior CharlieCard should arrive in the mail 7-10 business days later. When applying at a Council on Aging or senior center, applicants must bring an ID and completed application and also have their photo taken. Only after staff at the center have mailed in the applications, which must be sent on CDs, do applicants get sent their card (this may up to 6 weeks or longer from the time of application).

The currently application process lacks alternative options for older adults without valid licenses or IDs or who cannot get into downtown Boston or to a local Council on Aging/senior center event to apply for the CharlieCards. Additionally, for the Council on Aging/senior center events, providers have a wide range (from very little to just enough) of resources to devote to hosting Senior CharlieCard events. The current system requires that Councils on Aging and/or senior centers have a digital camera to photograph applicants, a printer to print and copy applications, a computer equipped with some kind of CD/DVD reader, and knowledge among staff or volunteers to use all of the technologies and create the files the MBTA needs. Beyond this, there is no formal tracking or communication system to ensure applications mailed in are received or to troubleshoot in the event something goes wrong.

In the current study, one participant detailed their story of renewing their Senior CharlieCard benefit after loss. "Unfortunately, my wife used to take care of the CharlieCards as I am not a reliable custodian of these

little pieces of plastic. But today I lost my CharlieCard, so I had to go to all the way into Park Street [Downtown Crossing in Boston]. I took my own car [to a local transit stop for the T subway and got on the subway line], got off at Park Street and went on my way to the CharlieCard office. [This participant lives far away from the CharlieCard office]. I parked in an illegal space in Newton and took the T, the green line, to Park Street to the CharlieCard office. And while the time to approaching their door to the issue being resolved was just one minute, I then had to go all the way back because my car is in Newton."

Conclusion

The continued growth in size of the "oldest old" population and results of population aging in general represent major implications for our transportation systems and services across the U.S. The meaning of transportation and our primary transportation mode choice(s) will shift as we age. However, driving continues to be an important mode of transportation for the oldest old. Additionally, there will be greater demand for a wide range of transportation services to meet our needs as we age.

While there are limitations to using alternative transportation services, the majority of participants valued the public services available to them. However, even among a fairly unique sample of the "oldest-old," the majority of participants were unfamiliar with the public transportation benefits they are eligible for through the MBTA. Because this was the case within a group that is relatively well-resourced in terms of education, wealth and access to technology and information, these gaps in knowledge and information about transit benefits may be amplified within less well-resourced communities both within and outside of Boston. Thus, there is not only a need to design and develop new transportation solutions for older adults, but there continues to be a gap in sharing information about current, existing services for older adults who might need them. As transit fare discount improvements are made and changes to current policies are updated, how can we make improvements and communicate new information out that works for everyone?

Use of a sample of adults ages 85 and older from the greater Boston area contributes to research being done with a vulnerable population (i.e., a sample of the "oldest old"), but also offers valuable insight into a particularly local issue. Ultimately, this research hopes to improve system efficiency, increase ridership among a particular population, and contribute to best practices in mobility management research.

Limitations

This panel of adults all over the ages of 85 is a self-selected group of individuals with demographic characteristics that are generally not representative of the U.S. population of adults ages 85 and up. Participants are also better positioned to maintain independence and access new transportation services. This panel was also geographically exclusive to the metro-Boston area and, therefore, the recommendations are less applicable to communities outside the region. Future research should consider the broad range of needs and characteristics of "transit-dependent" older adults including those with limited access to transportation options in general as well as individuals with complex mobility and/or health challenges.

Recommendations

Greater research is needed with wide, diverse and local samples of older adults, both transit-dependent users and less-dependent users, in order to better understand the gaps in information sharing about public transportation benefits available to these groups. Additionally, research on transportation and older adults should also explore the perspectives of families and caregivers. All of these data should be collected longitudinally in order to track changes over time.

Further investigation with senior service providers and/or agencies that host Senior CharlieCard application events is needed to better understand and identify potential improvements to the reduced fare application process. This group of stakeholders may also be better able to brainstorm short-term interventions for testing and implementation within the current system. Ultimately, these stakeholders should also be consulted as part of the fare processing transition to AFC 2.0.

A shift in focus on effective public engagement and communication with community-based transportation and/or aging service providers (e.g., senior housing, councils on aging, MBTA, the MA Mobility Management Center, etc.) as part of community-based participatory research fosters diverse opinions, mutual respect, and a climate promoting social action. Leveraging diverse stakeholder perspectives also encourages better prioritizing of need, taking informed research questions and methodological approaches, and can cultivate credibility, trust and transparency between influential organizations. In this study's case it included the MBTA, a council on aging, and MIT.

Panel participants still have positive perceptions of driving including that driving was more convenient, comfortable, reliable, efficient, enjoyable and accessible than other forms of transportation. A shift to use of public options may affect how people see themselves and perhaps how others see them, however. One active and regular RIDE user commented, "I wonder if some of this [using public benefits like The RIDE] carries some type of stigma? As in it means you're handicapped or can't drive or can't see. I've had them [the drivers] tell me, 'why you get The RIDE.' How can we eradicate that stigma?" In communicating system or process changes and designing new services or benefits, public agencies like the MBTA might leverage the experiences of their current users in their communications and/or public information campaigns. For example, in order to increase ridership and reach a larger population of older transit users, the MBTA (and other transit agencies offering transportation benefits and options designed for older adults) has an opportunity to make alternative transportation services fun and meaningful rather than stigmatizing and a nuisance.

Outputs

Rudnik, J., Lee, C., Patskanick, T., Miller, J., Coughlin, J.F. (*under review*). How the active oldest old manage their mobility needs: Transportation insights from a panel of adults ages 85+. *Transportation Research Record.* Transportation Research Board.

Results Summary, MIT AgeLab Lifestyle Leaders – Transportation. Distributed to panel participants and the MBTA after the January 2019 group.

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Appendix

Table 1: Participants' primary forms of transportation now and from the past

	Use as a primary mode now	Used as a primary mode 5 years ago	Used as a primary mode 10 years ago
I drive/drove myself	65.2% (n=15)	60.9% (n=14)	65.2% (n=15)
A friend, loved one or caregiver drives/drove me	13% (n=3)	4.3% (n=1)	4.3% (n=1)
Taxi, Uber, Lyft or other shared ride service	4.3% (n=1)	4.3% (n=1)	0
The RIDE or other group van service	21.7% (n=5)	13% (n=3)	4.3% (n=1)
Public transportation	13% (n=3)	13% (n=3)	13% (n=3)
Walk	13% (n=3)	8.7% (n=2)	13% (n=3)
Ride a motorized scooter or wheelchair	13% (n=3)	13% (n=3)	13% (n=3)