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Final Report

Project Title:

Development of an Older Adult Empathy System to Assess Transit and Livability

Project Number:	Project End Date:	Submission Date:
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Project Description

The majority of older adults choose to drive to meet their transportation needs; however, driving may not be a lifelong option for many. Consequently, public transportation must be more than simply accessible—it must be easy to use and be an attractive option. Natural aging and the incidence of chronic diseases such as arthritis, diabetes and non-cancer related pain all limit the physical capacity of older adults to easily navigate transportation vehicles and infrastructure. MIT students and researchers applied an empathy approach to better understand the possible difficulties encountered by older adults. While the Americans with Disabilities Act ensures access, it does not necessarily guarantee ease of use.

This project developed and applied an empathy approach to better understand the experience of older users in a transit environment, including rail and bus. Using MIT's Age Gain Now Empathy System, or AGNES, researchers identified and mapped the friction points for older users accessing public transportation

Method

This exploratory study used MIT's Age Gain Now Empathy System or AGNES. AGNES is a system of bands, glasses, gloves and other devices that combined, form a wardrobe that enables the user to experience the physical limits of selected chronic conditions (arthritis and diabetic neuropathy) and natural aging (e.g., diminished flexibility and strength) in a naturalistic setting.

This study teamed MIT students and researchers who explored and experienced various aspects of public transportation on the Massachusetts Bay Transportation Authority (MBTA) rail system (Green and Red lines). These included the conspicuity and readability of signage, ease of use of benches, accessing transit vehicles and travel to and from transit stations.

Findings

The student and researcher team identified a number of findings that may impact both the development and operation of public transportation facilities and vehicles. Top line findings include:

Signage

Signage was found to be readily available. However, signage was often low or in locations that required greater movement than simple line of sight without considerable neck rotation and movement.

Font size and coloring (particularly the use of red) made it somewhat difficult to process particularly in a high traffic or time sensitive area.

Benches/Seating

Benches were easily accessible. However, AGNES users indicated that it might be helpful to have additional benches further from the station given the fatigue experienced getting to the transit station.

Vehicle Access

Vehicles were accessible as mandated by the ADA. However, AGNES users observed that there are significant problems in moving fast enough to comfortably navigate the platform to board the vehicle. The physical limitations associated with AGNES and many chronic conditions forces users to move more slowly than average users.

Conclusions

Two principal conclusions were drawn from this study. First, empathy is a useful and instructive method to better understand the experience and needs of older public transportation users. Second, while the public transportation system may, in fact, be accessible, it may not necessarily be easy to navigate or use. Future research will include documenting where these improvements may be best targeted and how.

Outputs

Results of this work were presented at:

- Dr. Oz Show appearance, CBS Television, February 24, 2011.
- NBC Today Show appearance, NBC Television, March 24, 2011.