Development of a Mobile Navigation Smartphone Application for Seniors in Urban Areas
Principal Investigator: Ruey L. Cheu

Overview
Many seniors face mobility issues and lifestyle changes, such as switching from driving to using a carpool, taxi or fixed-route or demand-responsive public transportation. While there are many navigation apps on the market, very few cater to the specific mobility needs of seniors (such as incorporating information on ADA compliant infrastructure), and the few that exist have limited functions.

This project aims to understand the lifestyle and mobility needs of seniors and to develop a prototype smartphone smart mobility application that caters to those needs.

The researchers worked with the City of El Paso to conduct surveys at senior centers in the city to learn what features and functionality are most important to the app’s potential users. The survey’s results showed that respondents would want the app to include driving navigation functions, with options to choose routes based on their main concerns, such as avoiding traffic congestion or parking availability.

The findings from this survey will be used to design and develop an app. The prototype will undergo pilot testing in El Paso and New York, and feedback from testers will be used to improve the app’s functionality.

March 2018
Survey Results

The survey questions covered demographics, lifestyle, transportation needs and other topics specific to smartphones and apps. The survey was offered in both English and Spanish, and the researchers collected 458 total responses.

- 63% do not require mobility assistance. Of those who do, a cane was the most common need (16%)
  - Participants’ main concerns in planning a trip were
    o On-time departure (53%)
    o Protection from extreme weather (52%)
    o Cost (42%)
  - The biggest commuting challenges reported were traffic congestion/parking (62%), followed by walking issues (15%)
  - The survey also covered the frequency of different trips taken by the participants
    o A majority reported visiting senior centers or libraries, or family members or friends, once a day.
    o An overwhelming majority reported visiting senior centers or libraries 3 to 6 times per week
    o A majority said they visit grocery stores and civic or religious centers 1 to 3 times per week
  - Participants reported their most frequently used modes of transportation
    o A majority reported driving almost every day
    o A majority of participants walk and travel via car as a passenger 1 to 3 times per week

- The most desired function from the proposed app is navigation (53%), along with bus routes (20%) and accessibility (13%)
  - The factors that would most motivate respondents to use the app would be
    o Navigation function (47%)
    o Simplicity/intuitive design (30%)
    o Cost of the app (10%)
  - 78% would be willing to anonymously share their commute data through the app to improve the app’s functionality

- 73% of the survey participants reported being 65 or older
  - 69% were female
  - 72% were retired, followed by 12% who work full time
  - 80% of participants were Hispanic/Latino, followed by 11% white
  - 77% speak Spanish with confidence, followed by 53% who speak English
  - Participants’ zip codes indicated that all of El Paso was represented in the survey

- 80% of participants live in a house, followed by 15% in an apartment
  - 37% of respondents reported no disability. Of those with a disability, the most common were
    o Walking (24%)
    o Visual (21%)
    o Hearing (19%)
  - 49% of participants use a smartphone