



Introduction

- For older adults ride sharing is a very important mode of transportation in United States.
- Older adults who have vision problem and other age-related vision problem, tend to prevent themselves from driving.
- They become dependent on their family member, friends and different ride sharing services.
- It is observed from the data that maximum time older adults' activity space and ride providers activity space are quite different.
- Previous research has shown that by sharing rides make older adults' life easier.

Methods

- At first, we showed the self activity zones and 'activity for giving ride' of ride providers by making ellipse in GIS.
- We weighted the ellipse by frequency of destination and considered one standard deviation ellipse.
- Then we estimated the percentage of overlap.
- We also created the shortest path run for the persons of whom we had only two destinations.

Objectives

- Our objective is to find out , if giving ride to older persons is being burden for the ride provider or not.
- If is being a burden , then how much burden it is for the providers.
- To find out what improvement should be done in the ride providing services.
- The importance of improving ride sharing facilities for older adults.

Abstract

Introduction: Providing a ride to older adults whether a family member or outsider is a very common practice in our society. Sometimes, giving a ride to another person regularly may become a burden for the ride provider. This study examines the use of geographic information systems to construct geospatial indicators of routine travel patterns and travel patterns for giving rides to older adults as a potential instrument to measure this burden. **Importance:** Studies have found that older adults have more mobility and experience a better quality of life when they can easily get a ride from any family member or any ride-sharing service. It helps them to lead a healthy and independent life. **Research gap:** It is possible to map the geographic areas that relate to ride providers' routine activities (i.e., "self-activity area") and to the locations where ride providers take older adults (i.e., "giving rides area"). Sometimes a huge difference between these two areas exists, which may indicate the burden ride providers experience when providing rides. Very little research previously examines using the discrepancy between these two geographic areas to assess the burden of ride providers for providing the ride to older adults. **Methodology:** To map the self-activity area and giving rides area we made one standard deviation ellipses in ArcGIS using home addresses and the destinations of routine activities and rides given. We weighted the ellipses by frequency (how many times they go to a destination in one month). Then, the study overlapped the 'self-activity' ellipse and 'giving rides' ellipses and calculated the percentage of overlap. The more it overlaps with each other the less burden ride providers experience. **Results:** From the GIS spatial analysis, the average overlap area between self-activity area and 'activity for giving ride' area was only about 34% of the 'self-activity' area on average. This indicates a substantial potential spatial burden for most ride providers. **Conclusion:** In conclusion, developing measures of burden for ride providers may provide guidance for support to guard against social isolation and excessive burden. **Application:** The outcome of this research can be utilized for the policy-making of ride-providing services for older adults.

Keywords: older adults, Burden, ride-providers, overlaps, ellipse

Figures/Graphs

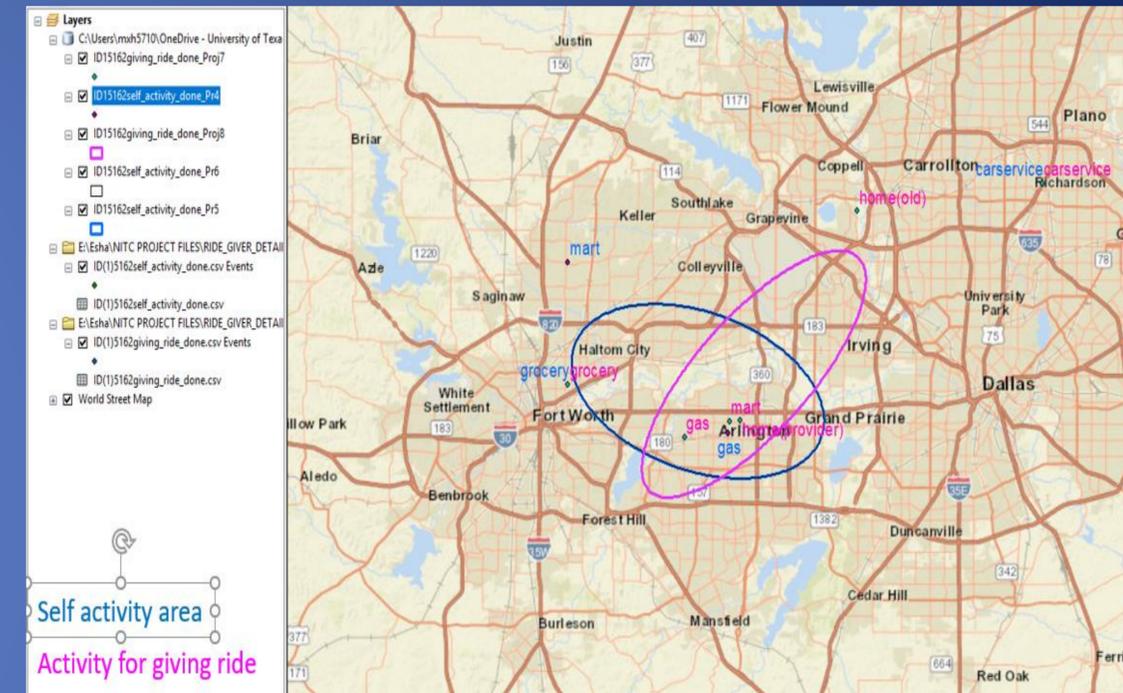


Figure: Overlap of self activity area and 'activity of giving ride' area of the ride providers.

Results

- From the GIS spatial analysis, the average overlap area between self-activity area and 'activity for giving ride' area was only about 34% of the 'self-activity' area on average.
- It indicates a large amount of burden for the ride providers.
- It is estimated that it shows about 66 percent burden for the ride providers.