I Introduction

This study examines the impact of the provision (and aspects related to the provision) of specialized transit services for the elderly population (i.e., population aged 65 years old and above) on the attainment of preventive healthcare services in selected cities across the state of Michigan. Previous research suggests that the elderly population has an increasing need for healthcare and visits to doctor's offices as they age. However, until recently, health-specific data at the geospatial level smaller than the city was hard to obtain for research within the social sciences.

Utilizing the data from the 500 Cities project, this study conducted a census tract level analysis in Michigan to investigate the relationship between transit services for the elderly and preventative healthcare attainment. The results indicate that the provision of transit services specifically for the elderly has significant effects on the attainment of preventive healthcare services.

II Selected Background Literature

1) Population aging has become an imperative issue in the United States, which brings new challenges to current transit systems.
2) The elderly population has decreasing health conditions, which consequently causes a significant increase in the need of medical appointments (Smith, et al., 2017; Yang, et al., 2015).
3) A lack of suitable transit services for the elderly results in decreased preventive healthcare attainments, and health outcomes as well (Wallace, Hughes-Cromwick, Mull, & Khasnabis, 2005).
4) The current transit system is not appropriately designed to serve the elderly population, and the transit service specifically for the elderly is under-supplied (Kotval-K, 2017; Thakuriah, et al., 2011).

III Method

A) Study Areas

- Data Sources

500 Cities: Local Data for Better Health
Transit Agent Websites for Each City
American FactFinder, and Social Explore

B) American FactFinder

Transit Agent Websites for Each City

C) Regression Model

Multi-linear Regression Model

IV Results

Regression Outcomes

| Coef. | Std. Err. | z | P>|z| [95% Conf. Interval] |
|-------|-----------|---|------|---------------------|
| 2.773518 | 0.321999 | 8.68 | 0.00 | 2.137904 - 3.409121 |

Main Findings

1) Door-to-door services and economic status have significant effects on the elderly's preventive healthcare attainments.
2) The percentage of the elderly who attain preventive healthcare services in the census tracts where door-to-door services are provided, is 2.77 percent higher than the census tracts where door-to-door services are not available.
3) The percentage of the elderly who attain preventive healthcare services decreases by a 2.91 percent as the poverty rate among the elderly increases by one percent.
4) Car ownership, race, and disability rate among the elderly are negatively related to the elderly's preventive healthcare attainment.

V Case Study in Lansing

Why Lansing

1) The percentage of the elderly who attain clinical preventive healthcare is lower than many counterparts (28.99% in Lansing compared to 36.69% in Livonia), which is worthy of attention.
2) The city of Lansing has experienced a rapid rise in the size and share of the elderly population. Specifically, the population aged 65 years old and above increased by 17.11 percent from 2010 to 2017, which accounts for 7.1 percent of the total population in 2017.
3) The current public transit system poorly serves the elderly.

Current Transit Services

1) Public Transit: Capital Area Transportation Authority (CATA)
2) The city of Lansing has experienced a rapid rise in the size and share of the elderly population. Specifically, the population aged 65 years old and above increased by 17.11 percent from 2010 to 2017, which accounts for 7.1 percent of the total population in 2017.
3) Transit services specifically for the elderly need to be further improved, especially for the low-income elderly population.
4) The fixed-route public transit system is limited and unsuitable for the elderly requiring in-advance reservations is a big barrier.
5) The current transit system is not appropriate as the elderly have an increasing need for medical appointments.

VI Case Study in Lansing - Continued

3) Door-to-door services for the elderly significantly improves their healthcare attainments.
4) Transit services specifically for the elderly need to be further improved, especially for the low-income elderly population.
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VI Takeaways

1) Transit needs vary by different age groups.
2) The provision of door-to-door services for the elderly significantly improves their healthcare attainments.
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References


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