Project Title

A Geospatial Analysis of Pennsylvania’s Locally Varying Property Tax Components and Their Implications for the Aging in Place of Older Pennsylvanians

1. Issue and Significance

In the United States (U.S.), property tax rates vary widely from state to state. From Hawaii to New Jersey, the average property taxes paid range from 0.3% to 2.2% of home value. In Pennsylvania, property taxes (on average, approximately 1.5% of home value) also vary significantly from one county (or municipality) to the next. This is because each county in the state has its own property tax assessment system (e.g., a common level ratio [CLR] that represents the ratio of assessed value to market value in a particular county), and a variety of tax authorities, including municipalities and school districts, determine tax rates. Concurrently, America is getting older as its population ages. For the first time in U.S. history, older adults aged 65 and over are expected to outnumber children under the age of 18 by 2034 (Vespa, 2018). Pennsylvania is aging rapidly and is older than the majority of the country, ranking ninth in terms of the percentage of the population 65 and older (the oldest and youngest states are Maine and Utah, respectively) (U.S. Census Bureau, 2021). In 2021, older Pennsylvanians accounted for over 18% of the state’s total population, which is slightly less than one in every five people in the state of Pennsylvania. “Aging in place” refers to individuals staying in their own home or community as they age, where they can continue to live independently (as long as they want), as opposed to relocating in their later years. There are many different options for thriving in later years (e.g., assisted living and care facilities), considering the highly diverse aging population in the United States in terms of their health, economic/financial, and social conditions (Golant, 2008, 2015). However, aging in place has been the most popular, dominant choice among older Americans, with at least two-thirds desiring to do so (American Planning Association, 2014).

Using GIS (Geographic Information System) and spatial analysis techniques, this project will examine the geography of locally varied property tax components (e.g., CLR, local tax rate, and school tax rate) in Pennsylvania and their implications for older Pennsylvanians considering aging in place, especially those with limited financial means. The average American household’s most expensive purchase or investment during their lifetime is usually housing. As a result, prospective homebuyers and present homeowners must carefully consider how much property taxes they can and should afford, especially if they want to age in place (without recourse to, for example, reverse mortgages [Cocco & Lopes, 2020; Moulton, et al., 2016]). This is essential for senior citizens and retirees wanting to age in place with limited financial resources, and yet, who are not qualified for the state property tax rebate or local property tax freeze programs, as housing prices and assessed values tend to rise with time. Those who choose to age in place, hypothetically, with an annual household income not so much above $35,000, in counties with a
lower CLR and a growing regional housing market, as well as in municipalities with a higher budget demand (i.e., a higher local tax rate) and school districts requiring a higher school tax rate, must assess whether aging in place is a financially feasible option. Therefore, a main purpose of this project is to assist aging Pennsylvanians who are considering aging in place as an option, despite their limited financial means in the coming years (possibly as “missing middles”), in making better informed decisions about whether their current residential locations offer better or worse financial opportunities for aging in place when compared to other localities in the state, in terms of the property taxes that must be paid.

Using GIS and spatial analysis techniques, this project will develop a set of publicly accessible online (web-based and interactive) maps that highlight and aid in the analysis of the geospatially diverse values (i.e., rates/ratios) of residential property tax components in Pennsylvania to accompany a project report. GIS and geospatial methodologies have been effective in examining various housing/community development issues in the fields of planning and geography (Anselin, 1998; Can, 1998; National Research Council, 2003; Orford, 2017; Perkins, Larsen, & Brown, 2009; Thrall, 1998). I believe that the proposed project will provide additional insights for the PHFA and other state agencies’ ongoing efforts in providing housing solutions for vulnerable populations (e.g., seniors with low incomes or the “missing middles”) by deploying creative approaches (e.g., web maps) that can also engage local communities and relevant stakeholders (PHFA, 2023). This project will be able to make practical and theoretical contributions to housing/community development policy, practice, and research because it intends to connect and analyze often separately discussed yet critical/timely issues (property tax and aging in place) for the well-being of our older citizens.

2. Methods and Work Plan

During the proposed fellowship period of January 23, 2023–December 15, 2023, I will construct multiple web maps of different administrative levels and geographic scales (below), using the most recent versions of GIS software, such as ArcGIS Pro and Online (available via the WCU Center for GIS and Spatial Analysis; the WCU Department of Geography and Planning purchases the license that allows me to use the software on an annual basis; therefore, it will be included as an in-kind contribution on the proposed budget). These online thematic/choropleth maps employ color intensity to express different values or quantities; they can be superimposed and compared with one another in a web browser.

1. State-County maps (1 state with 67 counties) representing:
   a. Each county’s common level ratio (CLR) within the state.
   b. The median home (market) value in each county within the state.
   c. The (assessed) median home value in each county within the state.
   d. The average county property tax rate within the state.
   e. The annual median household income for every county within the state.
   f. The average (effective) property tax rate across the state’s counties.
   g. The annual median property tax burden in each county of the state.
   h. The median age across the state’s counties.
   i. The proportion of the 50+ population in each county within the state.
   j. The proportion of the 65+ population in each county within the state.
   k. Availability of county-specific property tax relief/exemption/freeze programs (yes or no) in each county of the state.
2. County-Municipality maps (67 counties with 2,560 municipalities; some counties and municipalities may be excluded depending on data availability) representing:
   a. The median home value (sales price) in each municipality within a county.
   b. The (assessed) median home value in every municipality within a county.
   c. The property tax rate for each municipality within a county, and:
      i. The local tax rate for each municipality throughout the county.
      ii. The average municipal school tax rate throughout the county.
   d. The annual median household income in each municipality of a county.
   e. The (effective) property tax rate in each municipality within a county.
   f. The annual median property tax burden in every municipality within a county.
   g. The median age of each municipality’s population within a county.
   h. The percentage of the 50+ population in each municipality within a county.
   i. The percentage of the 65+ population in each municipality within a county.
   j. Availability of municipality-specific property tax relief/exemption/freeze programs (yes or no) in each municipality of a county.

In addition, I will create a series of complementary tables (to accompany the maps and to be included in the project report) for rankings and indices formulated based on the variables and indicators used to create these maps to provide a more comprehensible assessment and analysis of the geographic-financial feasibility of aging in place in various Pennsylvania communities from the perspective of the property tax burden. These maps and tables will help uncover multiple implications of, for example, possible relocation decisions (as opposed to aging in place) and future housing and tax policy/research directions. Last, the implications of statewide exemption policies and assistance programs, such as the Property Tax/Rent Rebate Program (Pennsylvania Department of Revenue, 2022), may be examined and discussed considering the discovered spatial patterns and potential geospatial mismatches, if permitted and requested by the PHFA.

3. Final Product and Dissemination

The project is intended for a wide range of audiences, including the general public (current homeowners and potential homebuyers) and Pennsylvanians aged 50 and older in particular. Lawmakers, policy analysts, and academics will also be able to identify policy- and/or research-related implications from anticipated spatial patterns and potential geospatial mismatches. This project is anticipated to result in publicly accessible web maps, which can be superimposed and compared with one another and can be linked to or embedded on the PHFA’s website. The project report (a complete PDF document version and a brief PPT slides version) will contain the same maps as graphics (png/tiff/jpeg files inserted in the report), as well as analytical narratives and summary tables for rankings and indices, which can be uploaded/linked to the PHFA’s website for sharing. Moreover, as the expected project deliverables may have both practical and theoretical implications, they can be presented at a professional or academic conference as a paper (oral) or poster presentation and published in a peer-reviewed research journal. Conferences to consider include the annual conferences of the American Planning Association (APA) Pennsylvania Chapter and the Association of Collegiate Schools of Planning (ACSP), both in the fall of 2023. Housing Policy Debate (IF: 2.36) and the Journal of the American Planning Association (IF: 4.82) will be considered for further distribution of the project results.
II. REFERENCES


