

Research Background and Question

Transit-Oriented Developments, or TODs, are a contemporary concept, intended to promote high-density, mixed-use development near public transportation hubs. The concept was solidified by Peter Calthorpe in the 1980s when he published *The New American Metropolis*. Calthorpe saw this idea as an easy-to-understand method to grow communities. The goal of our research is to determine—forty years later—the growth these zones have cultivated. The objective of TODs is to promote increased access to public transit in a place where one does not need a car for their basic necessities and work commute. This stands in stark opposition to the car-centric country we currently live in. At face value, one could assume that, without a need for a dedicated personal vehicle, personal expenses would drop, and people could exercise more economic freedom. On the flip side, however, we could potentially examine how a rise in property values could inadvertently reduce the availability of affordable housing. This could potentially displace low-income residents and exacerbate socioeconomic disparities. Our research question was how TODs affected the lives of their residents and how well they succeeded at their goals through proxies such as homeownership, public transportation usage, home values, and income. We also wanted to see how these TODs affected different racial groups to identify any disparities.

We chose the Atlanta Beltline as our area of interest because it is one of the most ambitious and well-known examples of a transit-oriented development in the United States. Originally envisioned in 1999, the Beltline is transforming 22 miles of former railway corridors into a loop of trails, parks, and transit. Combined with the existing MARTA lines, the overall MARTA-Beltline system makes it an ideal case study for examining the impact of TODs.

Our Sources

What we needed to embark on this project was both a general set of data regarding socioeconomic conditions, but we also needed to filter our search to transit-oriented developments. For this purpose we combined the American Community Survey (ACS) and the TOD Database. From there we were able to create a map of Atlanta, specifically the BeltLine, and examine how census tracts there have changed over time via markers such as median rent, homeownership, as well as other variables all faceted by race.

Dashboard Usage

On our app, there are several pages to choose from near the top of the screen, each focusing on different aspects of our research. The first two pages, “Income & Public Transportation” and “Housing”, display maps and data visualizations along with explanatory descriptions. To enhance interactivity, you can use the filters provided on the left to adjust what data is shown. On the “Income & Public Transportation” page, you can select which racial groups to include in both the income boxplot and the public transportation usage bar chart by checking or unchecking the corresponding boxes. On the “Housing” page, you can use sliders to select specific year ranges for the median rent line chart and property value boxplot, as well as checkboxes to choose which races appear in the homeownership bar chart. The third page, “Data”, presents the underlying datasets used to create the visualizations. You can select how many entries to display with the dropdown menu and search for specific variables with the search bar. Finally, the “User Guide” page provides an overview of our key findings and insights based on the research. In this way, our dashboard allows you to dynamically explore, filter, and interpret the data behind our analyses.

Research Results

While transit-oriented developments aim to enhance accessibility and community growth, their impacts are multifaceted. Income data reveals persistent disparities across ethnic groups, with Asian households maintaining the highest median incomes, while Black households lag behind, experiencing stagnant or declining

income trends in recent years. Public transit usage shows diverging trends, with Asians and Whites gradually increasing their reliance on transit, whereas Blacks and Hispanics, historically the most reliant, show a decrease—a potential indicator of changing accessibility or displacement patterns - or perhaps gentrification as the TOD develops.

The upward trends in median rent and property values underscore the economic growth associated with TODs but also raise concerns about affordability. Rapid rent increases post-2015 and significant property value variability suggest growing economic pressures that may disproportionately affect low-income and minority residents. This is reflected in the homeownership data, where white people consistently have the highest ownership rates, while black homeownership has declined, potentially signaling exclusionary housing trends.

Overall, the data suggests that while TODs have succeeded in driving economic development and fostering increased public transit use among some groups, these benefits are not evenly distributed. Rising property values and rents may exacerbate socioeconomic disparities, challenging TODs' original goal of equitable, car-independent living. Future strategies must address these disparities to ensure TODs fulfill their promise of fostering inclusive, sustainable communities.

Team

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