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Can Californian Households Save Money on Transportation Costs by Living in Transit-Oriented Developments (TODs)?

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In the past decade, the concept of location affordability has gained in popularity among transportation and housing planners, researchers, and advocates. The core idea of location affordability is that when evaluating the affordability of a neighborhood, one should consider both housing and transportation costs—the two largest expenses of the average American family. Low- and middle-income residents in large Californian metropolitan areas are heavily burdened by housing costs. Advocates, researchers, and elected officials in California are debating whether transit-oriented development (TOD) could be an effective tool to mitigate the housing affordability problem by increasing housing supply and reducing transportation costs in transit-rich neighborhoods. This study contributes to this debate by estimating how much Californian families can save on transportation costs by living in transit-oriented developments (TODs).

Study Methods

By using data from the confidential version of the 2010–2012 California Household Travel Survey (CHTS) along with several other data sources, this study estimates household transportation expenditure in the four largest Californian metropolitan regions: the San Francisco Bay region, the greater Los Angeles region, the San Diego metropolitan area, and the Sacramento metropolitan area. The research team decomposes household transportation expenditures into a few sub-categories such as vehicle ownership cost, vehicle operating cost, and transit cost. The study quantifies the impacts of TOD on household transportation expenditures by comparing TOD households with two groups of control households that are identified by propensity score matching. The first control group consists of non-TOD households that are very similar to TOD households by socio-demographic variables. The second control group consists of non-TOD households that are similar to TOD households by

socio-demographic characteristics and neighborhood environment and location.

Findings

The study finds that TOD households save $1,232 per year on transportation expenditures compared to non-TOD households with similar demographics, accounting for 18% of their total annual transportation expenditures. When controlling for both demographics and neighborhood environment, TOD households save $429 per year on transportation expenditures, accounting for about 6% of their total annual transportation expenditures. This study confirms that Californian households save money on transportation costs by living in TODs. TOD households save money on transportation costs mainly because they own fewer cars than non-TOD households. About two-thirds of the savings can be attributed to the transit-friendly neighborhood environment and one-third to access to rail transit, suggesting the importance of integrating a rail transit system with supportive land use planning and neighborhood design.

This study finds that California families save $1,232 per year on transportation costs by living in TODs, accounting for 18% of their annual transportation expenditures. About 35% of the savings can be attributed to access to rail transit and the other 65% to transit-friendly neighborhood environment and location.

Policy/Practice Recommendations

The transportation cost savings have different implications for homeowners and renters living in TODs. Homeowners enjoy the double benefits of TOD: increased property values and savings in transportation costs. The financial benefits of TOD for renters, however, are less clear. They save money on transportation costs but may need to pay a rent premium to live in TODs. The overall financial impact of TOD on renters thus depends on whether the transportation cost savings can outstrip the rent premium. Future studies can estimate the rent premium for the same TODs and compare it with the results of this study. This study also shows that the transportation cost savings are about three times greater when we treat TOD as an integration of rail transit with a supportive neighborhood environment rather than as access to transit service only. This finding has at least two policy implications. The first is that when rail transit is built, it should be planned alongside a supportive neighborhood environment, with features such as higher land use density and mixed land use. The second implication is that communities that cannot afford to build rail transit can focus on the transformation of their neighborhoods into less car-oriented ones. Such a transformation could have a larger impact on transportation cost savings than rail transit.

About the Author

Dr. Hongwei Dong is a professor in the Department of Geography and City and Regional Planning at California State University, Fresno. His research focuses on housing and real estate, transportation and land use, and smart and healthy cities.

To Learn More

For more details about the study, download the full report at **transweb.sjsu.edu/research/2012**

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