

The Impact of Car Dependent policy on Standard of Living in the U.S.

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Introduction

Historically cities and towns were built at the human scale, sometime during the 20th century there was a shift to build cities and towns for the automobile. Consequences of this decision has impacted nearly every facet of american life.

Research Question: the extent to which car centric urban planning has influenced the standard of living enjoyed by American communities, specifically with reference to the economic, environmental and social impacts the automobile has had.

Thesis: Through looking at academic and governmental research and data I found that there is a clear negative correlation between over reliance on cars and quality of life.

Literature Review

Difficult to define exactly what is Automobile Dependency, sources define it in a variety of ways; Density (urban sprawl), Commute Times, Fuel Prices and Consumption, or total miles traveled. I chose to define it on the standard used in my source “Constructing Urban Life” which defines it based on vehicle use.

Criteria for cities varies, to compare cities I will look at population density, latitude and median household income as a control between them.

My goal of this paper is to determine the extent to which car dependency has afflicted American communities over the last half century with regard to economic, environment and social well being.

Analytic Framework

Economic Standards

Increases transportation costs and resource consumption, requires significant amount financial and physical resources and accommodation, reduces access and usage of alternative modes of transportation; ultimately hampering economic development, productivity, competitiveness and employment. Consumer Costs as well as Governmental Costs.

Environmental Standards

Comparison of human and environmental health standards throughout the cities. Environmental quality, pollution levels, overall health and complications from automobile usage.

Social Standards

Quality of life; income, health, education, social engagement, productivity. Also includes sustainability of the cities.

Method

Public Policy Method

Required looking at public policy that lead to the current problem of over reliance on the automobile, these are zoning laws and practices accepted across the country with the spread of the automobile, provides a general insight into how we got here.

Next looking at data comparing SOV cities to MM to establish criteria for Auto Dependency; as this only encompasses “small” cities I will include Philadelphia as a comparison to cities with similar population density, latitude and median household income.

Findings Economic

Cost Summary

	Auto Dependent	Multi-Modal	Difference
Internal Costs	\$10,950	\$6,450	\$4,500
External Costs	\$8,250	\$4,950	\$3,300
<i>Total Costs</i>	<i>\$19,200</i>	<i>\$11,400</i>	<i>\$7,800</i>

Consumer Costs

Vehicle Expenses (Those in automobile dependent communities pay more for transportation), Accident costs (estimated to cost over \$1 Trillion annually) , Increased Travel Times and Stress, Reduced exercise and enjoyment, Reduced access to work and social opportunities.

Governmental Costs

Infrastructure Costs (U.S. cities drive the most and pay the most on road expenditures), Increased Traffic Congestion, Inefficient Travel Alternatives (often ignored in high automobile areas leading to positive feedback loop), Pollution (climate mitigation efforts estimate a reduction in vehicle use would save \$78 billion to \$1 Trillion), Government expenditures on automobiles provide less income and jobs on a regional basis.

Comparison between Green (MM) and Brown (sov) cities showed higher living costs in Green cities, attributed to greater demand to live in said cities,

Findings Environment

In the U.S. automobile emissions account for almost 30% of all greenhouse gas emissions, world wide the automobile is responsible for 50-90% of emissions.

Link between urban environmental quality, industrial production and disparities in health outcomes such as obesity or heart disease.

Green cities (MM) had higher emissions on average.

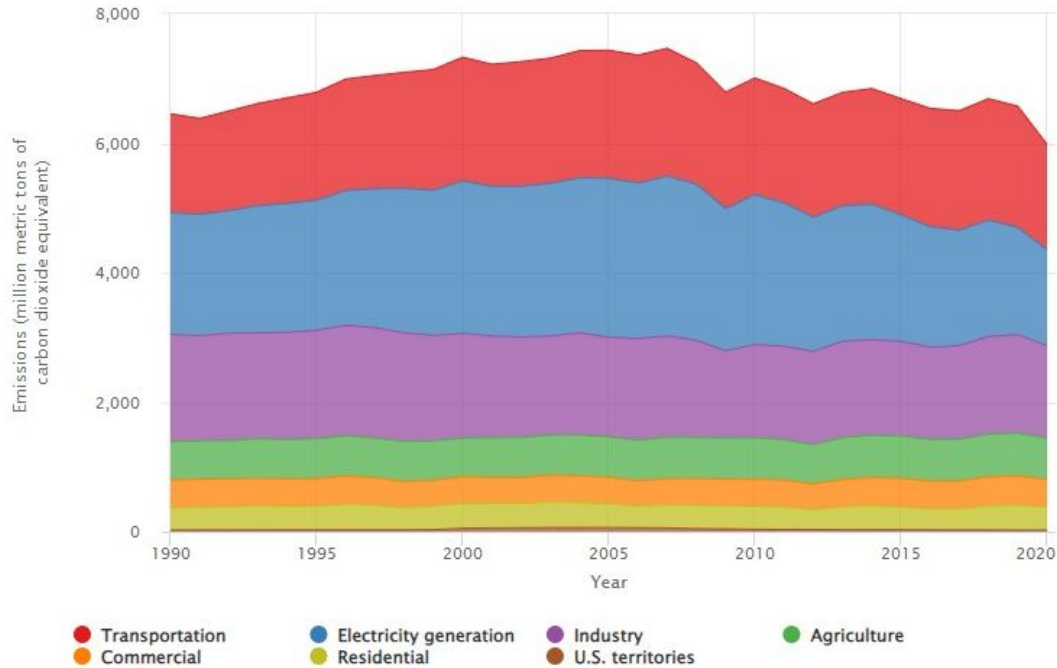
Health focused research however point towards better mental and physical health in cities with diverse modes of transportation.

Residents of dense cities (when controlling multimodality) have a positive effect on health outcomes.

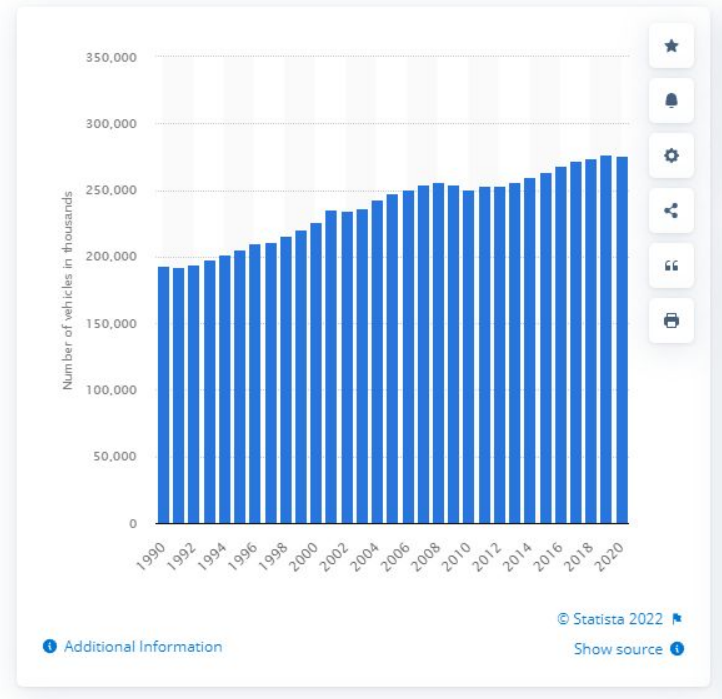
Multimodality also reduces premature deaths, greater preventer of it than income only rivaled by education and urban density, 13% difference between green and brown cities.

Environment Continued

U.S. Greenhouse Gas Emissions by Economic Sector, 1990-2020



Source: U.S. EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2020.
<https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>



Findings Social

Community Impact

Excess automobile usage has been attributed to a decline in public spaces and social interactions along roads, encourages social stratification and isolation, reduces aesthetic beauty.

Equity Impact

Automobile dependency necessitates economic subsidization from non-users, similarly forces non drivers to accommodate health costs from automobile use. Disproportionately impacts the poor who drive less than wealthier individuals while again facing the same costs without the advantage.

Correlation between higher automobile usage and lower quality of life indicators.

Policy Recommendations

Policy Solutions to reduce car dependency

- Review of street space and urban land share allocated to cars
- Use road space to proactively manage traffic
- Abolish required minimum parking spaces for new developments
- Provide quality alternative modes of transportation that are convenient and efficient
- Integrated planning of transportation planning and land usage
- Review land use regulations such as euclidean zoning that hinder compact development
- Carbon tax to discourage continued use of fossil fuel vehicles and shift to electric
- Reduce costs and introduce government subsidization of alternative modes of transportation