Economic development not the only influence on personal car use, study finds

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Although countries with high levels of economic development generally have more personal automobile travel than less-affluent nations, income is not the only factor that determines a nation's demand for cars, according to a new study.

Examining factors that may influence personal automobile use in developing nations, researchers found that government policies such as taxes that keep fuel costs high and the development of road systems can have important influence on levels of automobile travel.

Shaping the personal use of automobiles is an important issue in developing countries. While individual cars can increase access to employment and personal travel, it also can contribute to congestion, air pollution and traffic fatalities, according to the study

Researchers from the RAND Corporation and the Institute for Mobility Research examined four large developing nations and forecast future automobile travel. Researchers concluded that Brazil is likely to have the most automobile travel, followed by Russia, India and China.

"Our research suggests that factors other than income influence automobile travel," said Liisa Ecola, lead author of the study and senior project associate at RAND, a nonprofit research organization. "Some factors reflect underlying trends, but others can be shaped by policy. So just because the Chinese economy has grown rapidly doesn't mean that the Chinese will drive as much as Americans in the future."

Researchers looked for lessons by comparing the developing countries to a set of developed nations that have different personal driving levels—Japan, Germany, Australia and the United States.

Japan has the lowest levels of automobile travel and the United States has the highest. Germany reflected the European experience and Australia was selected because while it is similar to the United States geographically, it has lower levels of driving.

The study identifies nine factors that influence the amount of personal automobile travel within a nation: car infrastructure, such as the quantity and quality of roads and parking; inexpensive fuel; pro-car policies, such as low vehicle taxes; a lack of alternatives to driving; having a population with a high proportion of working-age residents; the availability of domestic oil; the existence of a domestic car manufacturing industry; the geographic dispersion of a nation's population; and whether a society has a car culture.

For example, despite its many similarities to the United States, Australians drive less than Americans. This is largely caused by higher fuel prices, a smaller domestic car industry and the tendency of young adults in Australia to delay obtaining driver's licenses.

Japan has high personal income per capita, but also a long history of limited road infrastructure and no domestic oil supplies. Current policies in Japan make it very expensive to own a car, with high vehicle taxes and a periodic vehicle inspection that is difficult for older cars to pass.

Ecola and her colleagues drew three broader public policy implications from their research. First, income is not destiny. Most research in the area of long-range forecasting of personal automobile travel has used income as the primary or only variable. While there is a strong correlation between income growth and growth in vehicle travel, income levels alone are not good predictors of travel demand.

Secondly, Ecola said while economic growth can help understand demand for auto travel over time within one country, it is less helpful for understanding differences in demand across several nations.

Finally, among the nine factors that influence mobility, the study suggests that spatial dispersion of the population and car infrastructure are the most important. However, demand also is significantly influenced by transportation policies that keep fuel more expensive than the market price, discourage excessive driving and encourage alternatives to car travel.

Provided by RAND Corporation

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