

## ANALYSIS

# The impact of millennials' travel behavior on future personal vehicle travel



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## ABSTRACT

The millennial generation, born between 1980 and 2000, is exhibiting different travel behavior trends than previous generations, which are shaped by several different yet correlated characteristics such as; place of residence, race/ethnicity, labor force participation, education level, income, living arrangements, lifecycle status, licensure status, vehicle ownership/availability, values, and propensity to substitute technology for travel. Many millennials are living with their parents longer, obtaining drivers licenses at older ages, postponing marriage and procreation, and substituting travel for work and socializing with telecommuting and social media. Millennials are currently shaping the nation's changing demographics, which in turn directly affect future travel behavior trends and their consequences on energy consumption and the environment.

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## 1. Introduction

In 2013 the national total vehicle miles of travel (VMT) was estimated at 2.97 trillion. This compares to 2.96 trillion in 2004 [1]. In spite of population growth from 293,655,404 to 316,128,839, an increase of 7.7%, total VMT was virtually flat, only 0.25% higher in 2013 [2]. In this period total VMT declined 4 different years, 2008, 2009, 2010, 2011. From its peak in 2007 to its lowest point in 2011, the decline in total VMT registered 2.8% and in that same time period per capita VMT decreased 5.9%. While moderating travel demand in the midst of a significant and extended recession is not without precedent, no other period has shown the sustained plateauing in total VMT and declines in per capita VMT. The potential significance of this change can be appreciated when one contrasts this period with the 20 year period from 1983 through 2003. During that period, total VMT increased 187% (annualized rate of 3.2%) and per capita VMT increased 131% (annualized rate of 1.4%).

## 2. Methods

Recognition of the prospect of changing personal vehicle travel demand dates back over two decades and documentation of evidence

of change was accumulating soon after 2000 [3–7]. Variants of Fig. 1 showing trends in national VMT have been noted in the literature. This particular figure uses VMT excluding heavy truck mileage. This roadway count based empirical evidence of moderating VMT is further borne out by travel surveys and diaries that confirm moderating travel with both fewer and shorter trips by persons and a slight shift in travel mode reducing the share of person travel made in vehicles. Figs. 2 and 3 itemize the changes observed by the National Household Travel Survey (NHTS) series regarding the number of person trips and miles of travel. Fig. 4 looks more specifically at changes in miles of travel by population age between 2001 and 2009. Other research has evaluated the extent to which shifts between modes of travel can explain changes in VMT. The evidence indicates very modest impact associated with mode changes resulting in the majority of VMT change being attributed to changes in trip rates and trip length [8].

The collective body of data provides compelling evidence that travel behavior trends are different, and particularly for today's young people. Those differences appear to be pronounced predominantly for persons in the 20 to 40-year-old age groups. This grouping which is inclusive of the much-talked-about millennial generation is the focus of attention for further exploration. This group's significance is based on the observed changes in behavior of these age cohorts, their significance in the overall population, and the fact that future travel demand will be influenced as these cohorts age through their peak travel years, historically the 30 to 60-year-old age cohorts. Attempts to understand and plan for future transportation needs require estimating future

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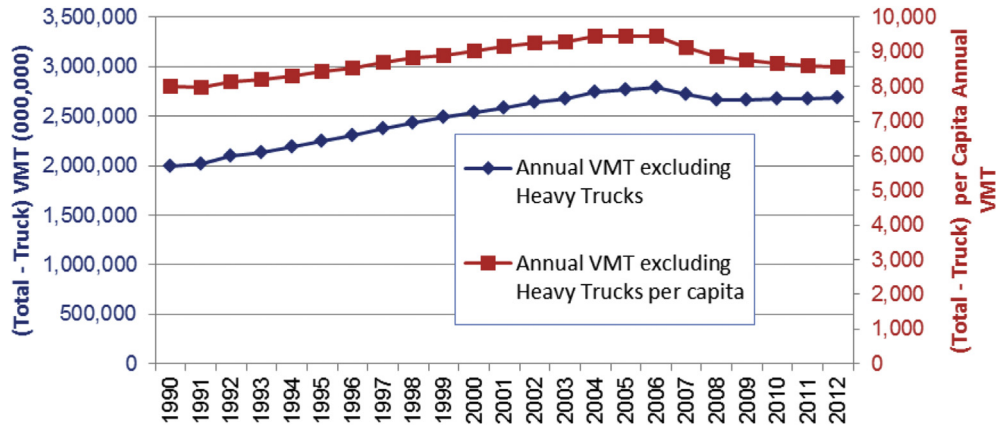


Fig. 1. Annual VMT (excluding heavy trucks) and per capita trends. Source: Federal Highway Administration, *Highway Statistics*, Table VM-1, various years.

travel demand for individuals who are now millennials and subsequent cohorts. In an era where planning and decision-making for major transportation infrastructure can take a decade or more and where a half of century is required to amortize significant transportation investments – long-range plans often consider needs 25, 50 or more years into the future. Thus, understanding how millennials will travel in the future is fundamental to understanding future travel demand. The magnitude of travel demand in conjunction with estimates of mode preferences and propulsion characteristics of various travel modes are fundamental to understanding energy and environmental impacts of the transportation system in the future. This knowledge is relevant to numerous high profile policy issues ranging from climate change to transportation infrastructure funding to dependence on oil imports.

The planner is by definition tasked with reflecting the needs and aspirations of future generations of travelers in the plans being developed today. Developing those plans requires understanding future millennial travel demand. To develop such an understanding requires addressing critical research questions about millennial travel behavior:

1. How do travel behaviors of millennials differ from prior generations' behaviors?
2. What factors explain the differences and what share of the differences are the result of the current economic climate versus longer-term more fundamental changes in social demographic conditions and behaviors?
3. Will these age cohorts' travel behavior differences persist as they age?
4. Will subsequent generations retain these travel behavior traits?

Integrating our knowledge of travel theory in conjunction with qualitative and quantitative data enable researchers to develop an understanding of these issues. Travel behavior researchers are currently in the process of developing the supportive data and carrying out the research to develop that understanding.

### 3. Results and discussion

Historic studies and models of travel have led to an understanding of socio-demographic and economic conditions that are associated with different levels and types of travel. The reflection on millennial travel in the balance of this discussion reviews characteristics of millennials in contrast to other generations and explores what is known about how significant these characteristics are in influencing travel demand. Various data sources and reference time periods are used in the absence of a single data source. Many of the characteristics referenced are highly correlated.

- Urban/Rural Residence
- Race/Ethnicity
- Labor Force Participation/Education Participation
- Income/Economic Status
- Living Arrangements
- Lifecycle Status
- Licensure Status
- Car Ownership/Availability
- Values
- Technology Substitution for Travel

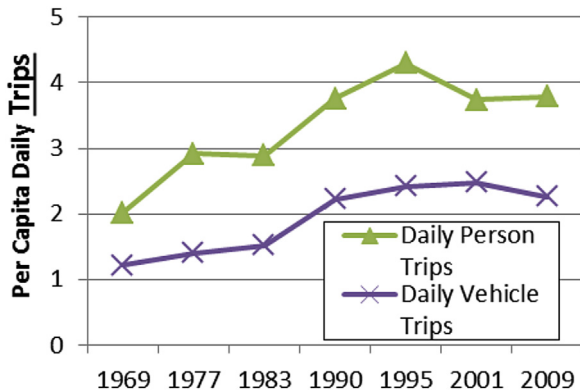


Fig. 2. NHTS trip rates. Source: National Household Travel Survey, *Summary of Travel Trends*, various years, USDOT.

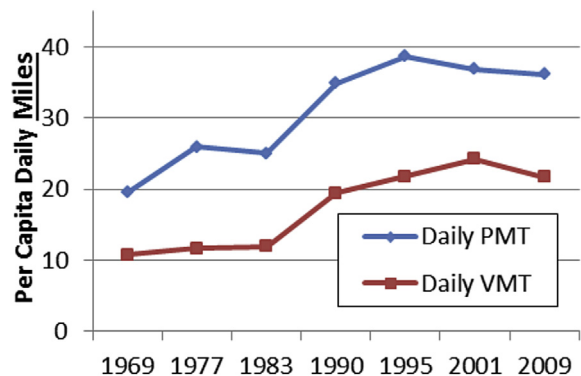


Fig. 3. NHTS person miles of travel.

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