

# THE NEXT GENERATION OF TRAVEL: INITIAL ANALYSIS

Transportation Research Board  
NHTS for Transportation Decision  
Making  
Washington D.C.  
June 6, 2011

# Project Objective

To identify new or emerging travel behaviors, technologies and perspectives that may affect future travel demand, preferences and needs as they relate to transportation policy.

# Major Tasks

1. Literature Scan: Completed
  - Written by FHWA-Office of Policy, Transportation Studies (FHWA-HPTS)
  - Added Technology and Regulatory Section: Jack Faucett and Associates (JFA)
2. Cohort Study: Underway
3. Nationwide Focus Groups (JFA)
4. Scenario Development (HPTS, JFA)
5. Final Report (HPTS)

*"Focus on Family, saw  
parental job losses.  
Determined, 2 recessions  
Travel, play included in  
work"*

*"Built the Interstate &  
Highway  
System in America"*

*Land Use changed  
beginning in 1946  
"Dog-tired soldiers can't  
come home"  
"There aren't any  
houses"  
Detroit Free Press*

*"Most Technologically Savvy & they admit it."*

# Generational

**Millennials (18-29)**

**Silent (65+)**

**Boomer  
(46-64)**

**Generation X  
(30-45)**

# What Affects Travel Behavior?

## **Life Cycle Effects:**

Age, Income, Children, Worker Status,  
Household Size, Vehicle Ownership, Lifestyle

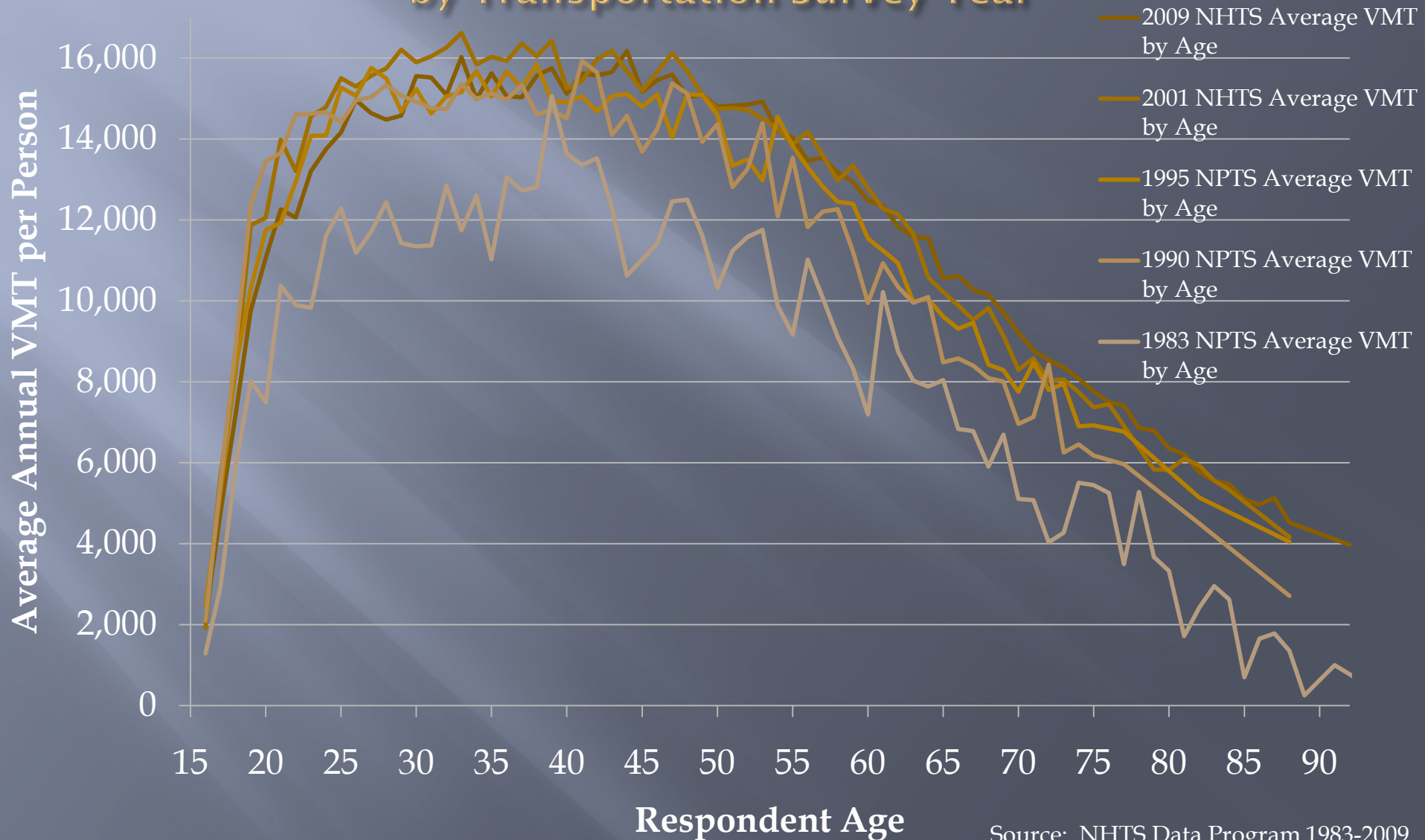
## **Period Effects:**

Economic Downturns, Social Movements,  
Major Events and Catastrophes, Medical,  
Scientific or Technological Breakthroughs



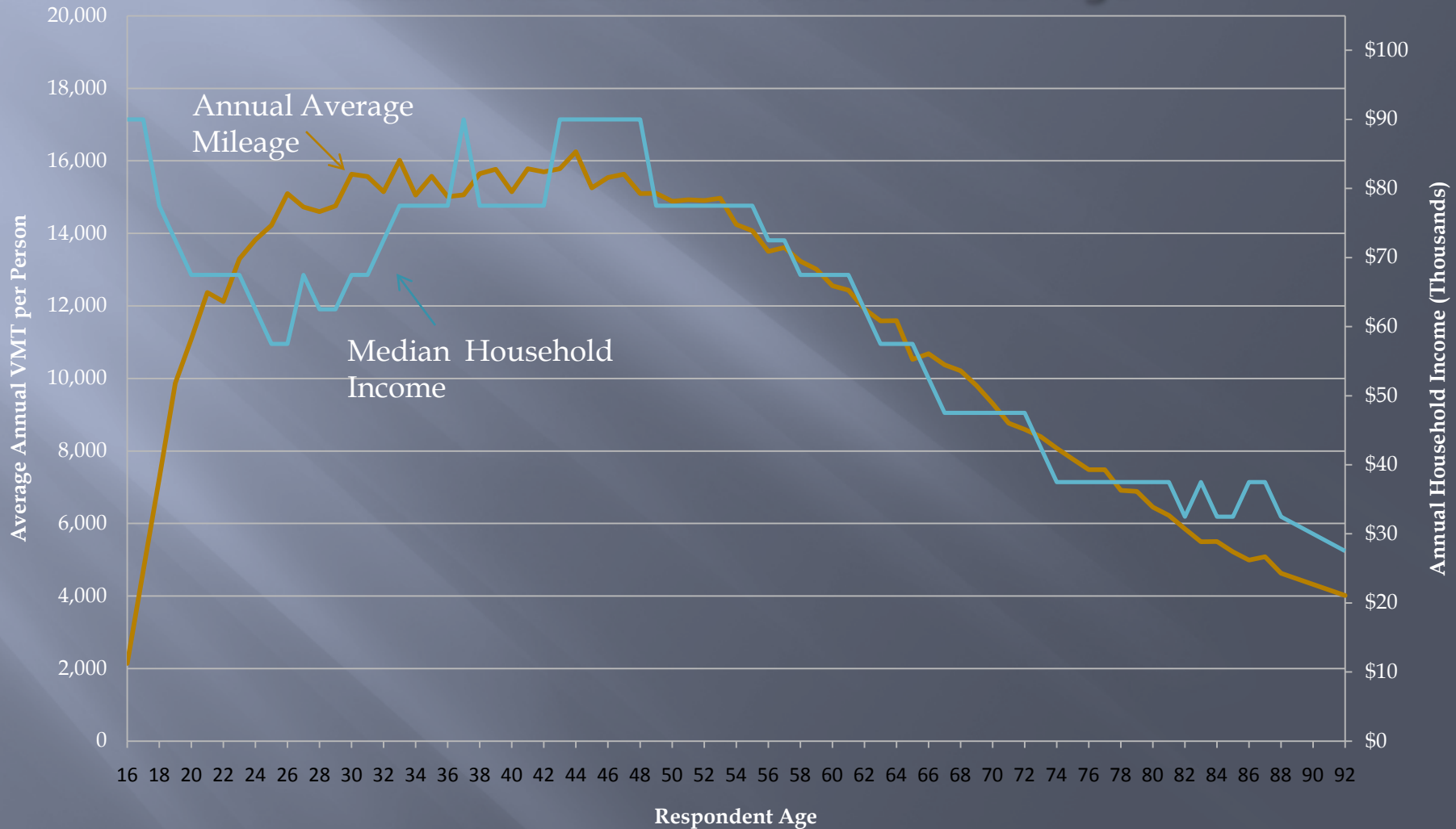
# Life Cycle Effect: Age

Average VMT Per Person Versus Age,  
by Transportation Survey Year



# Life Cycle Effect: Income

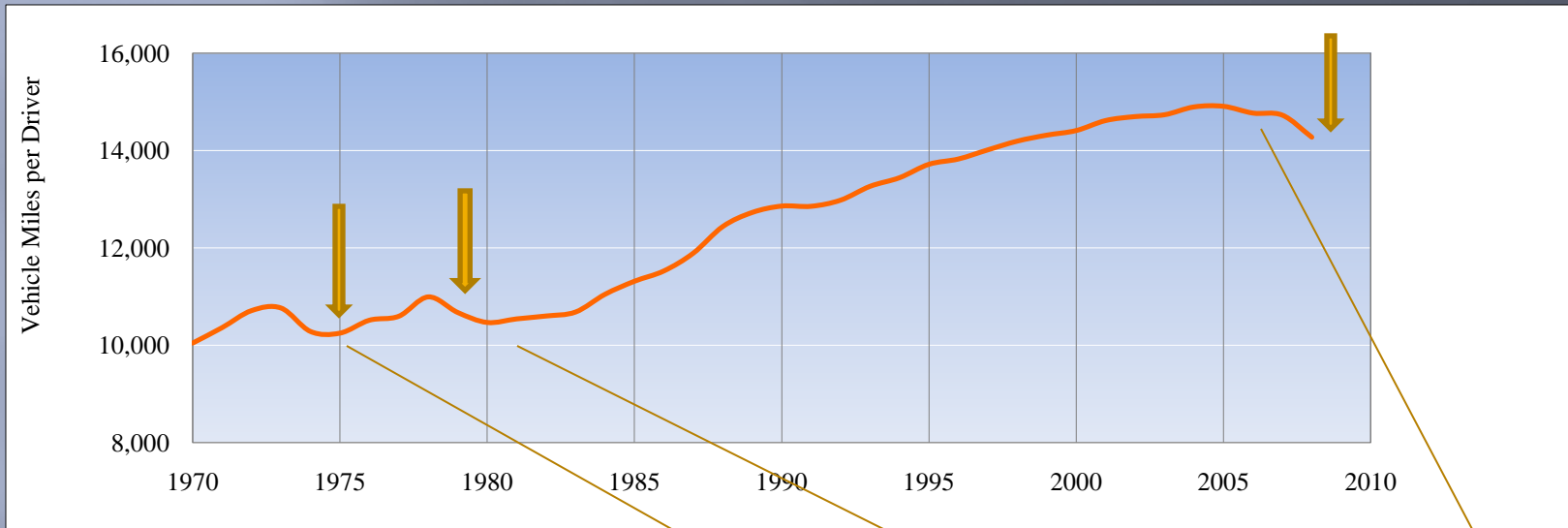
## Average VMT Per Person by Median Household Income versus Age



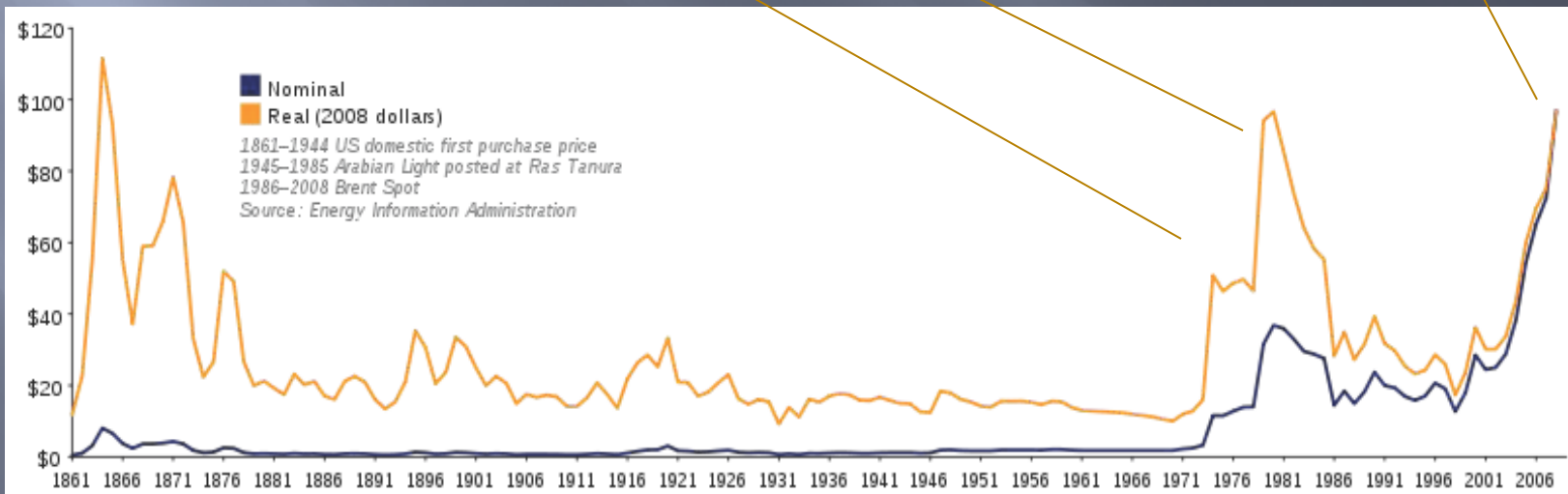
Source: NHTS Data Program 2009

# Period Effect:

Does an increase in the price of gas decrease VMT?



Our Nation's Highways, FHWA 2010





# Period Effect: Internet and Online Social Media

*We live virtually connected...*

- ▣ **85 percent of the total population has Internet access from any location . Of persons aged 18-34:**
  - 72 percent (if given a choice) would eliminate TV over the Internet
  - 78 percent have a social networking profile page on Facebook
  - 62 percent use Twitter on a monthly basis

(18<sup>th</sup> Edison Research/ Arbitron Internet and Multimedia Study, 2010)
  
- ▣ **Online social media tools and networking sites have made their way into half of all State DOT communication programs**
  
- ▣ **Increased mobile phone use to send and receive messages**
  - *94 percent of persons aged 18-34 use their phone for text messaging, 2010 (Pew Center)*

# Cohort Study using NHTS Data to Measure Change

## Cohort Analysis Definition:

*Any study in which there are measures of some characteristic of one or more cohorts (birth or otherwise) at two or more points in time.*

## Strategy:

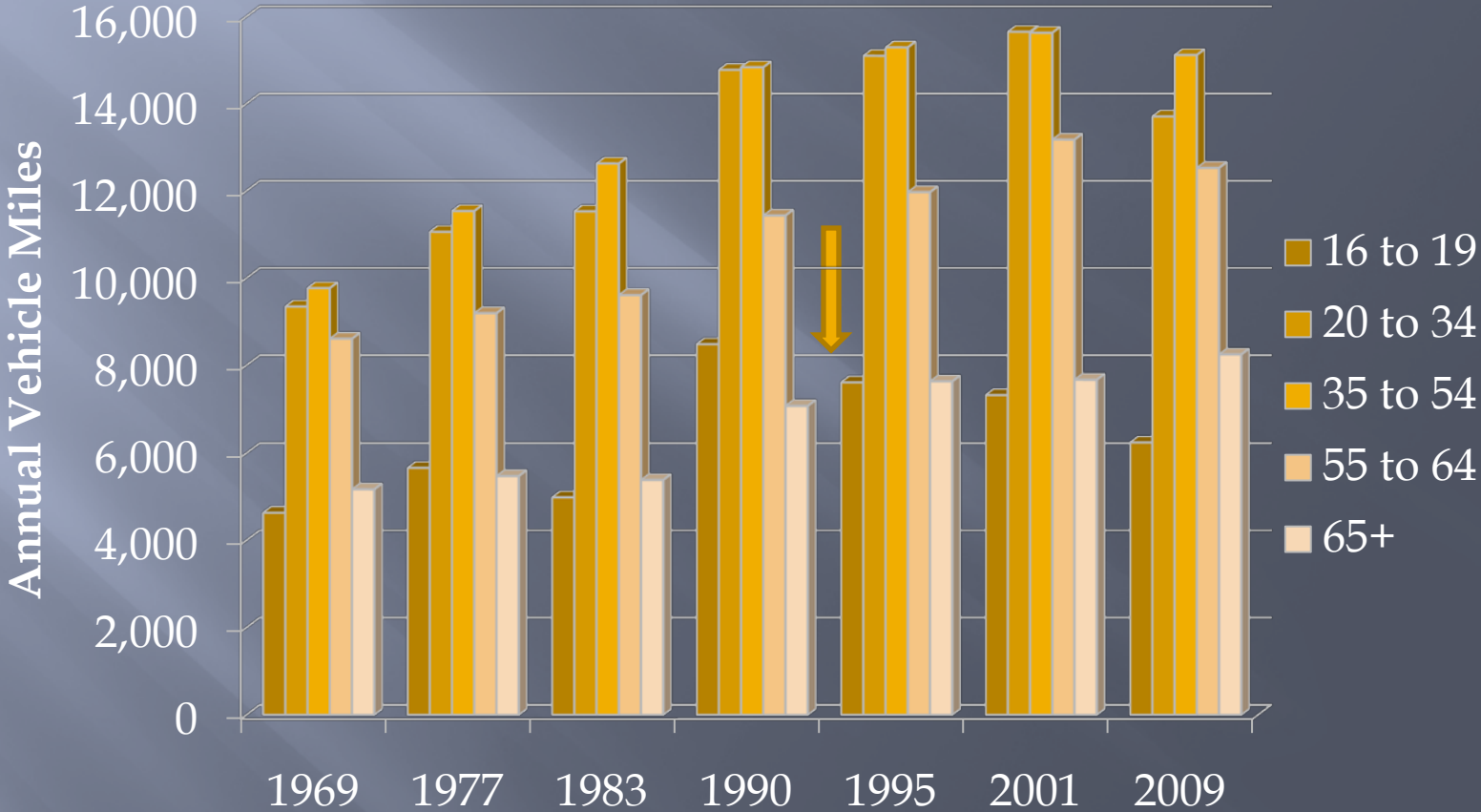
*To examine trends and to try, by various means, to decide to what extent the trends reflect influences associated with life cycle rather than period influences.*

# Percent Change in VMT and PMT (1995, 2001, 2009 NHTS)

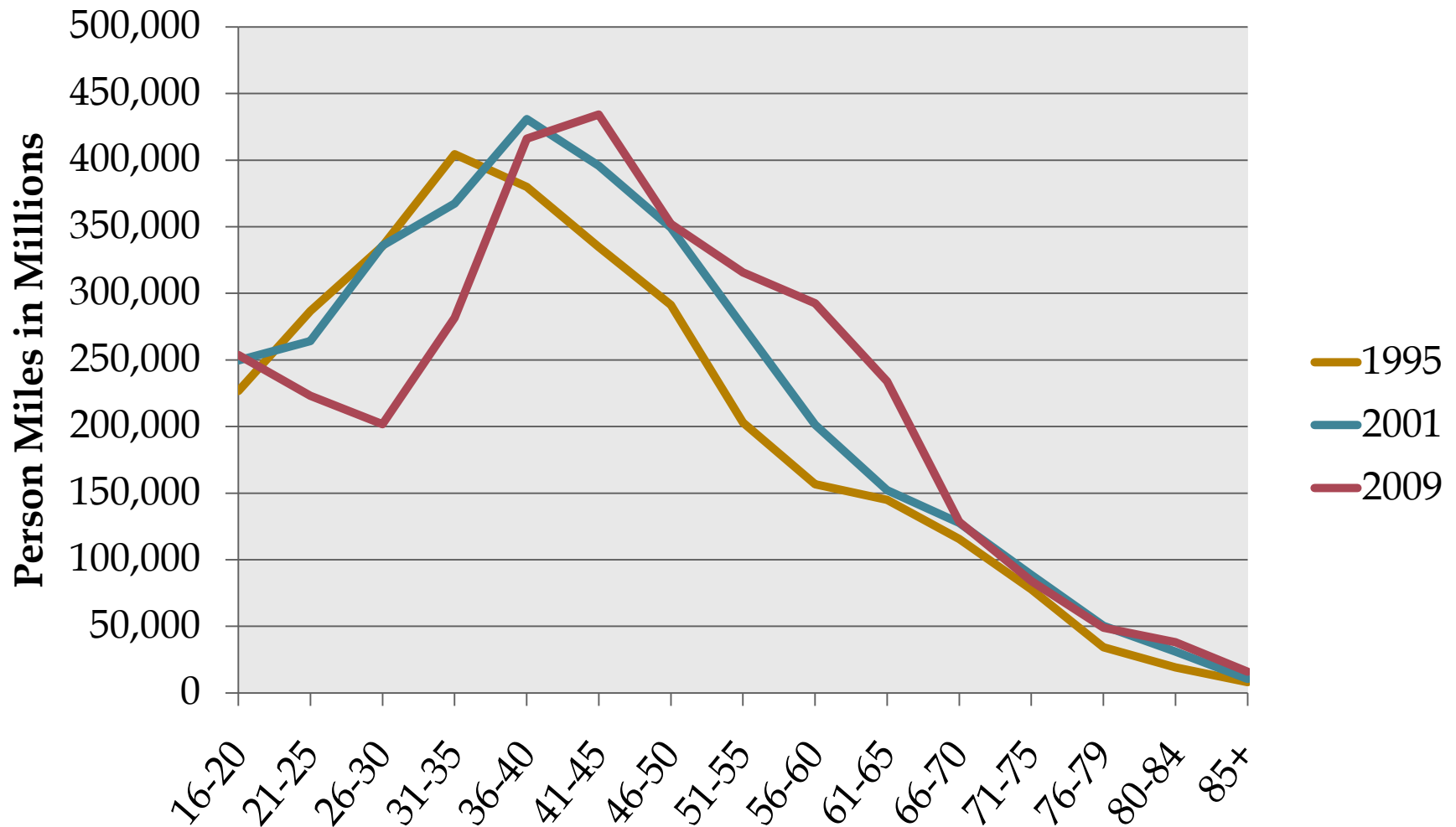
Survey Year	Average Annual VMT (per person)			% Change		
	16-30	31-55	56+	16-30	31-55	56+
1995	9,872	12,446	7,081	-	-	-
2001	9,748	12,892	7,951	-1.25	3.58	12.28
2009	7,319	11,493	7,787	<b>-24.9</b>	-10.8	-2.06

Survey Year	Annual Average PMT (per person)			% Change		
	16-30	31-55	56+	16-30	31-55	56+
1995	15,524	17,041	11,309	-	-	-
2001	15,552	18,299	12,220	0.18	7.38	8.05
2009	12,253	16,214	11,704	<b>-21.2</b>	-11.3	-4.2

# Annual Average VMT Per Age Group by Transportation Survey Year (driver estimate)



# Total Annual PMT Per Age Group By Transportation Survey Year





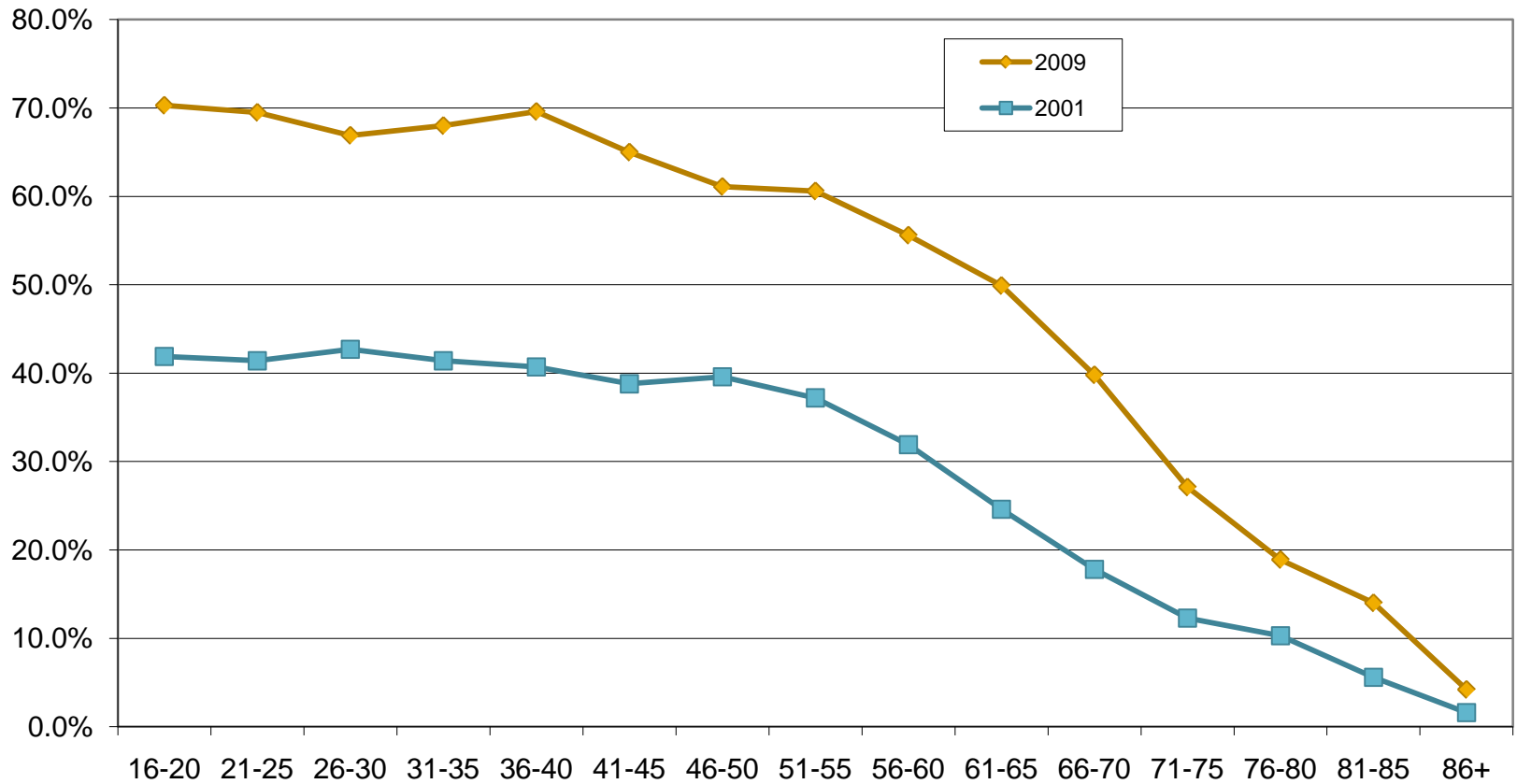
# Younger Cohort Questions

(age range 16–30)

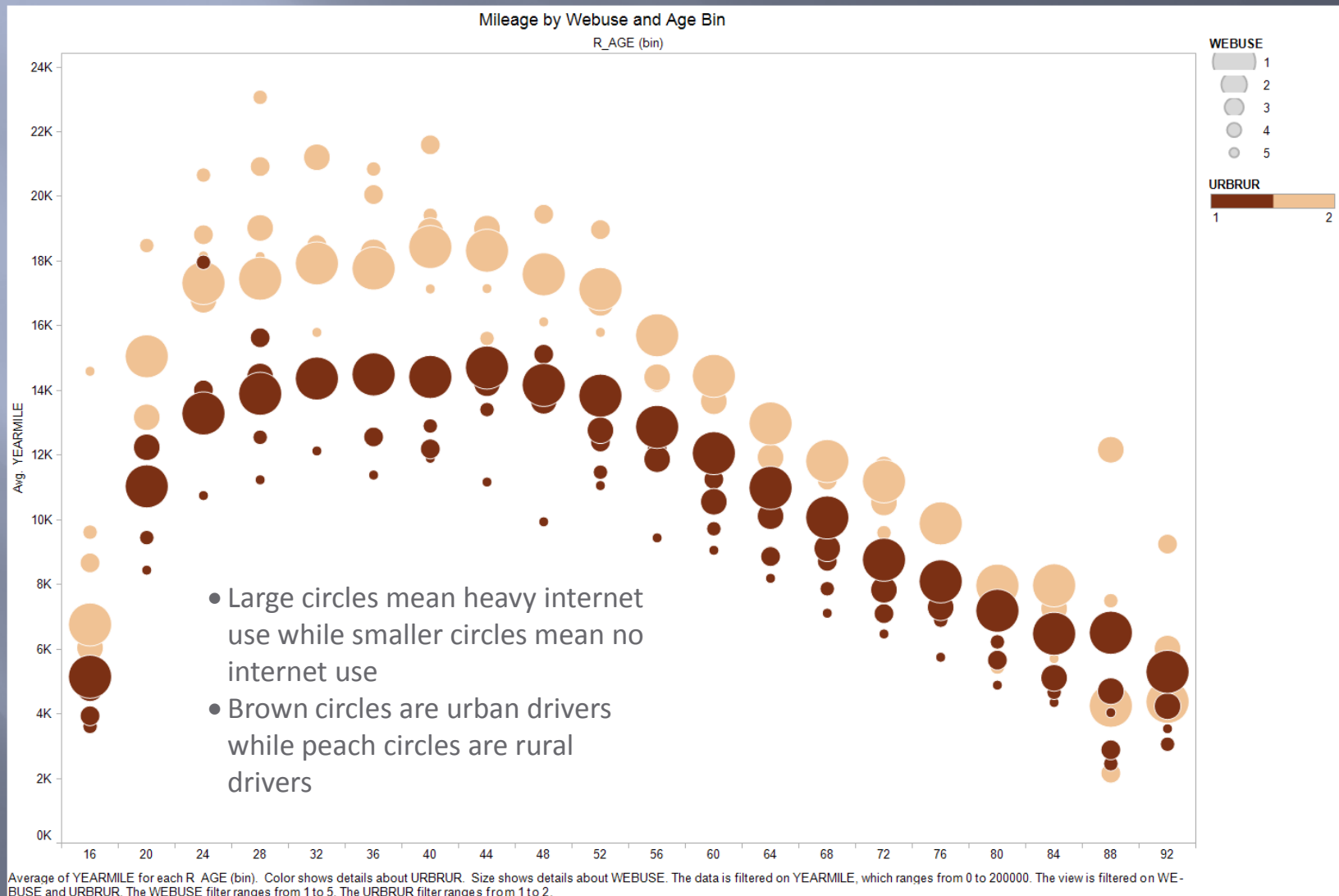
- 1) *Will they travel differently in the future?*
  - **Online communication**
  - Housing and workplace location
  - Mode use, car pool and car share
  - Type of vehicles
  - New transportation technologies
  - Privacy concerns
  - Paying for transportation system use
- 2) *What are the major influencers of travel demand and mode choice for younger populations?*

# Frequency of Internet Use

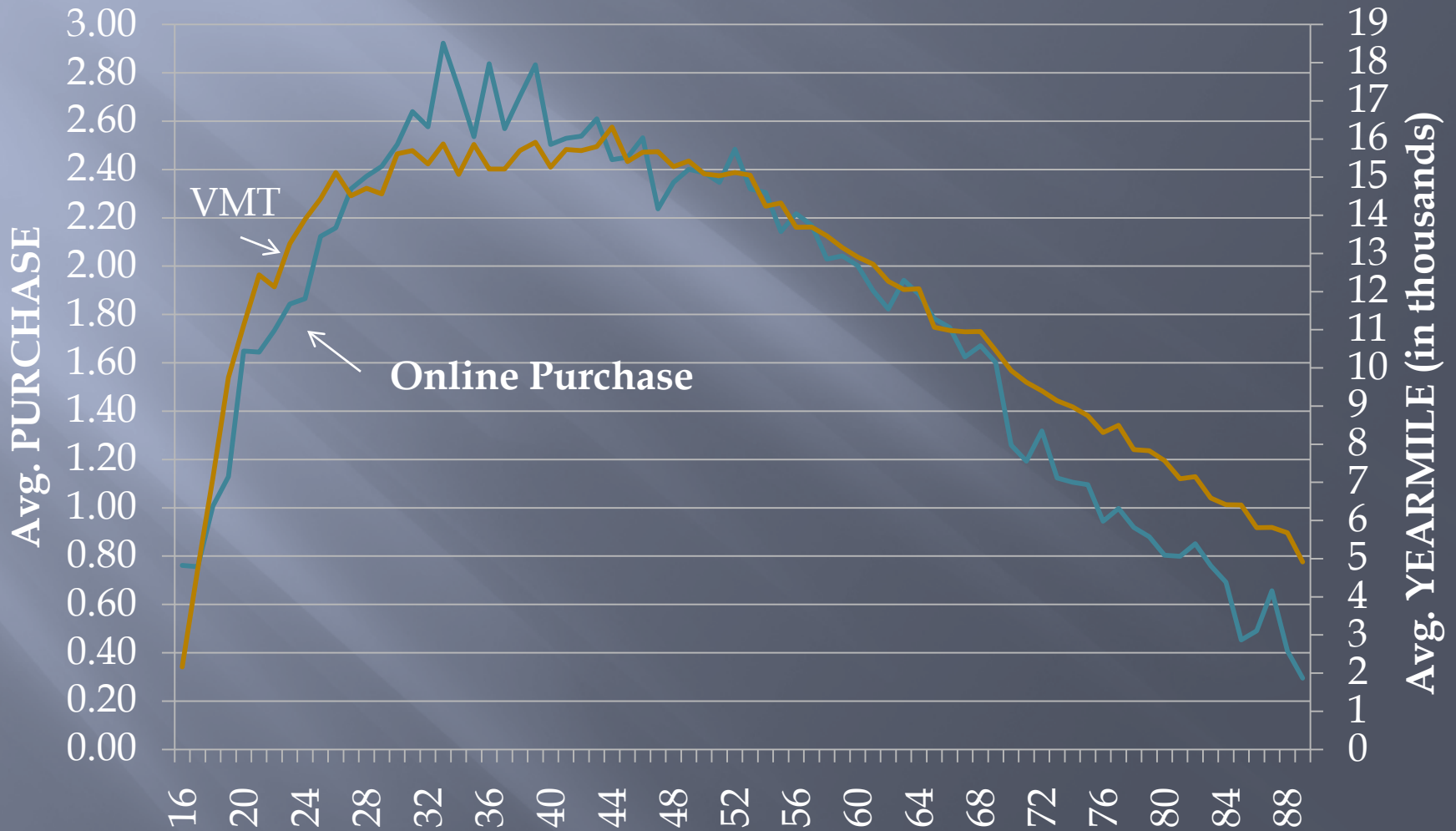
Age by Daily Web Use



# Average VMT per Person for All Ages, by Web Use and Status as Urban or Rural Resident



# Average VMT per Person for All Ages and Online Purchases



# Internet Use and Travel: Hypotheses

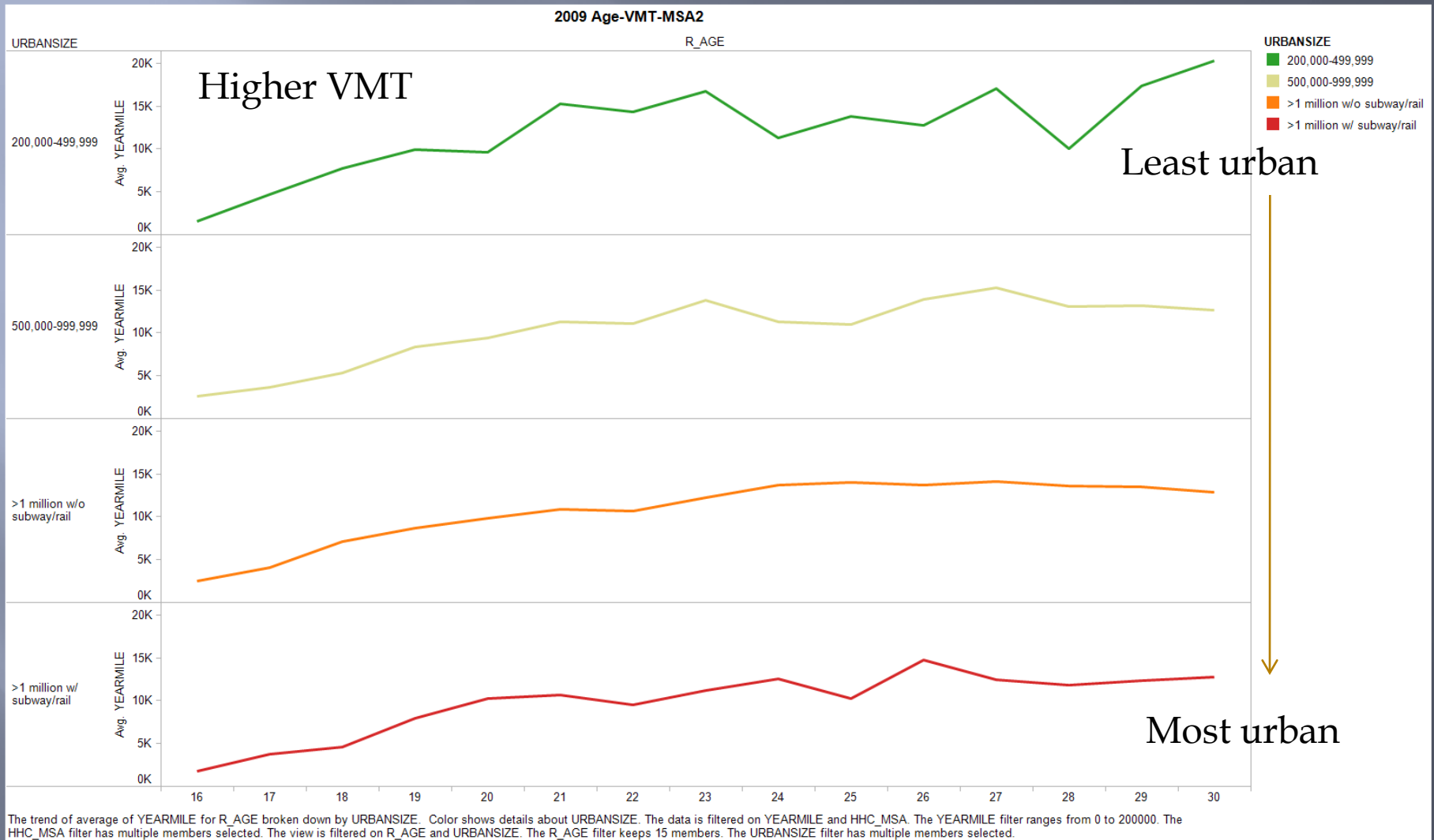
- ▣ Young people will continue to be frequent users of the Internet well into their older years
- ▣ In urban areas, there is a link between high Internet usage and increased VMT
- ▣ In rural areas, the opposite case exists mainly with younger populations, that high Internet usage is linked to less VMT
- ▣ There is a strong correlation between online purchases and VMT among all age groups; however, this may be an indirect correlation of income



# Location and Travel

- ▣ Suburban metro areas have grown and continue to grow in population
  - Suburban areas are seen as car dependent
  - Much of today's travel is suburb to suburb (NHTS, 2001)
- ▣ Currently, two-thirds of the nation's population live in large metropolitan areas (The Brookings Institute, 2010)
- ▣ Employment and housing prices have the greatest effect on the choices of where people decide to live (The Brookings Institute, 2005)

# Average VMT per Person by Ages 16-30 by Urban Size



Source: NHTS Data Program 2009

*Young people who live in highly populated urban areas drive less than young people who live in less populated areas.*

# Location and Travel: Hypotheses

- ▣ As the nation becomes more urbanized, young people may travel less by car
- ▣ As young people become accustomed to living in a large metropolitan areas with more public transit and land use that supports other travel options, their use of other modes may increase
- ▣ As multigenerational housing increases\*, young people may become more apt to car share

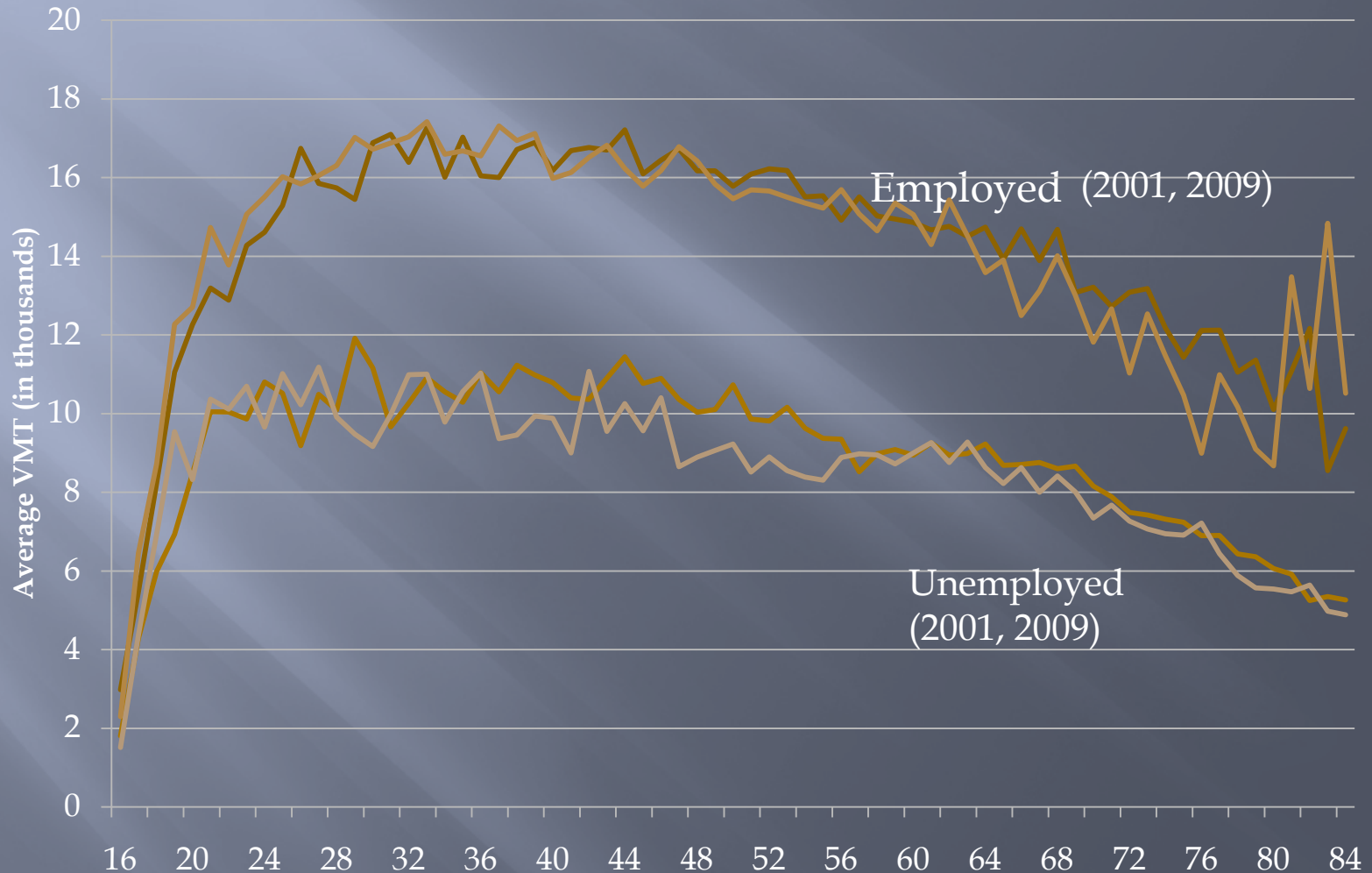
\* An increase of 4.8 percent to 6.1 percent from 2000-2010, AARP Public Policy Institute analysis of Current Population Survey Data

# Additional Influencers that May Affect Travel for Young People...

- ▣ Worker Status
  - More telecommuting?
- ▣ Vehicle Ownership
  - Would they rather be a passenger than a driver?
  - Will they be driving more zip cars?
- ▣ Education
- ▣ Life Style:
  - What are young people doing with their time? How much of it will be spent traveling? And will it have a lasting effect?

# How will the economy affect young people?

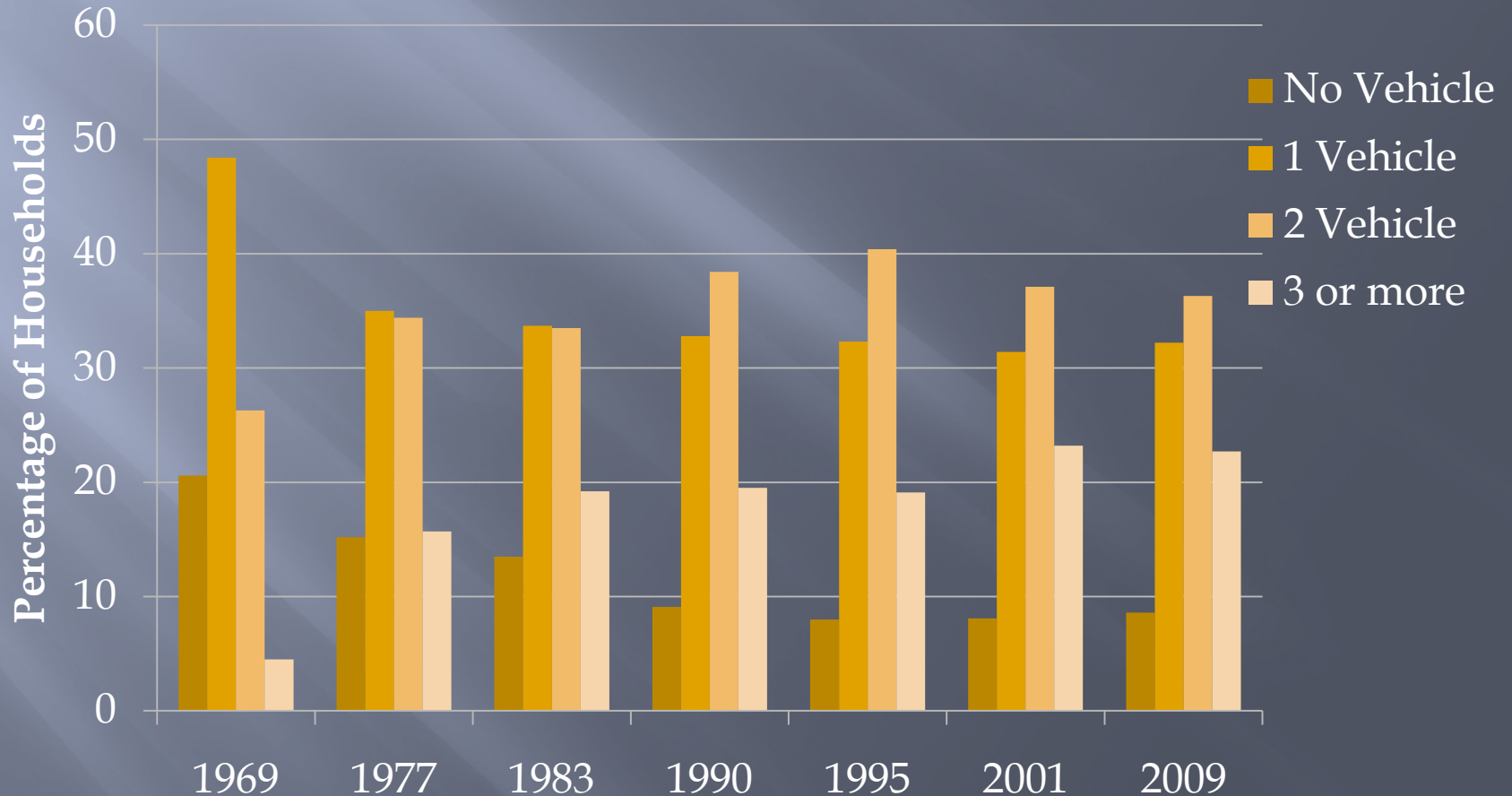
Average VMT per Person for All Ages by Employment Status





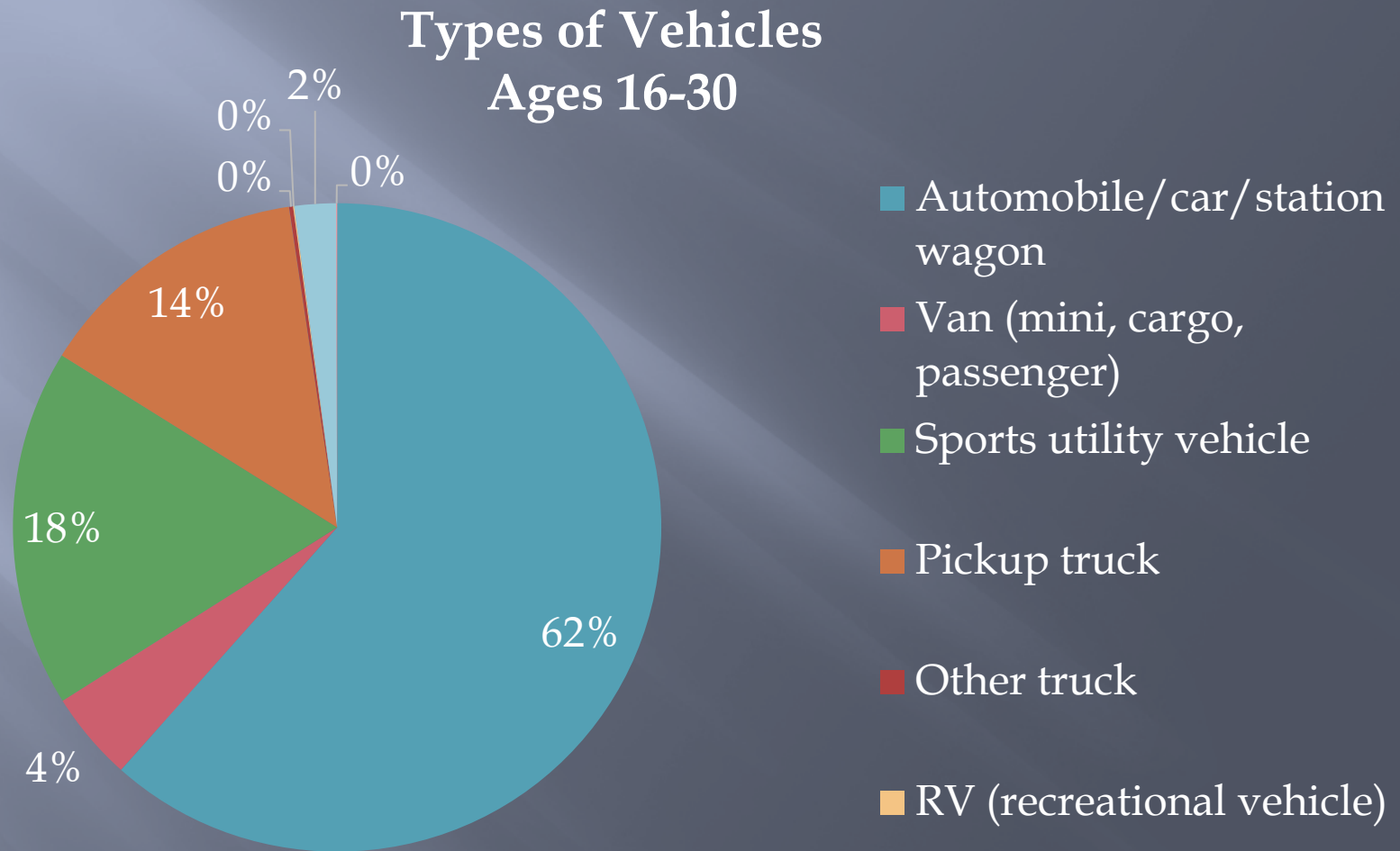
# How many vehicles will they own?

Percentage of Households By Number of Vehicles



Source: NHTS Data Program 1969-2001

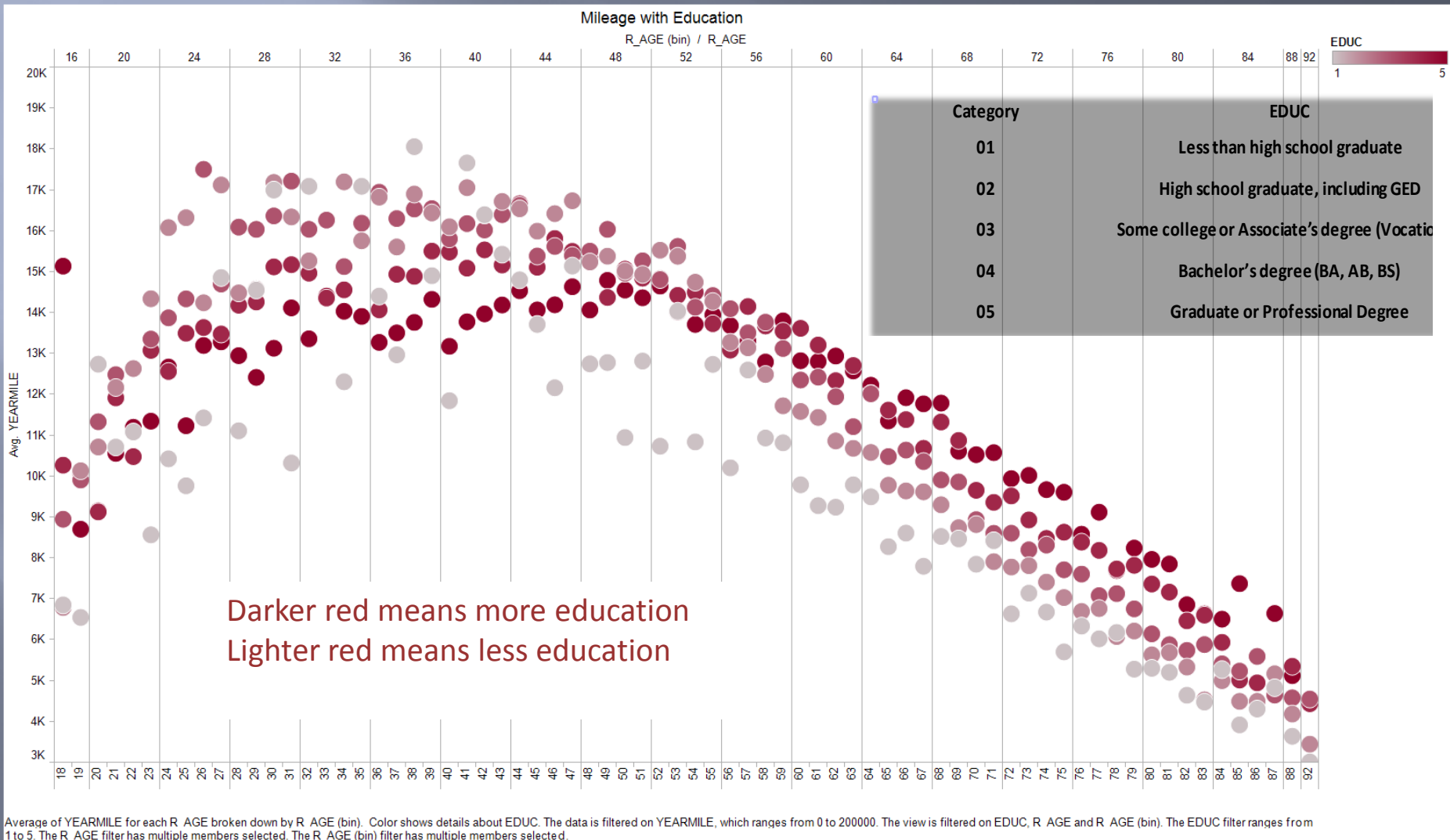
# What type of vehicles will they drive?



*Almost all respondents surveyed in the NHTS 2009 drive gasoline-powered vehicles.*

# Will they travel differently?

## Average VMT Per Person for All Ages by Education



# Next Steps: Cohort Study Variables to be Explored Using NHTS

- ▣ VMT
- ▣ PMT
- ▣ Trip purpose distribution
- ▣ Average Trip Distance
- ▣ Trip Rates
- ▣ Mode Share
- ▣ Gender
- ▣ Location of HH in urban area
- ▣ Worker status
- ▣ Education
- ▣ Student status
- ▣ Web use
- ▣ HH size
- ▣ HH income
- ▣ Ethnicity
- ▣ Lifecycle (i.e. children)

# The Next Generation of Travel: Initial Analysis

Contact:

Erica Interrante, Transportation Specialist

FHWA Office of Policy, HPTS

[erica.interrante@dot.gov](mailto:erica.interrante@dot.gov), (202) 366-5048

Mary Lynn Tischer, Director

Heather Contrino, Policy Analysis Team Lead

Cindy Hatley, Transportation Specialist