

Presentation Series – UCD-ITS-PS-15-03

Residential Location, Lifestyles and
Mobility Choices of Millennials in California,
and the Motivations behind Them

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ACSP 2015
Houston, TX

Mobility of Millennials in California

Interest in better understanding:

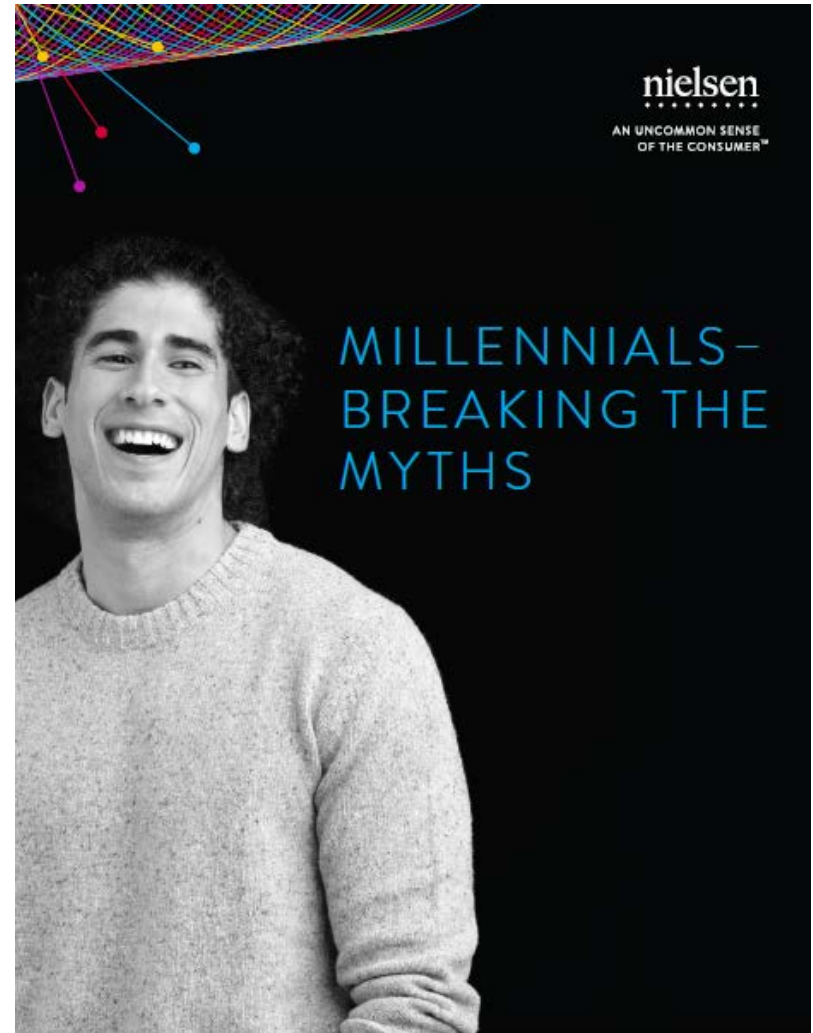
- The relationships among *millennials' personal attitudes, lifestyles* and *actual behaviors*
...do they behave differently from previous generations?
- Impact of *classical* (economic and non-economic) variables vs. *specific factors affecting millennials' choices* (e.g. adoption of technology, etc.)
- Their *aspirations for/opinions about life and future mobility* (e.g. major life changes, purchase and use of cars vs. use of other modes)



(2)

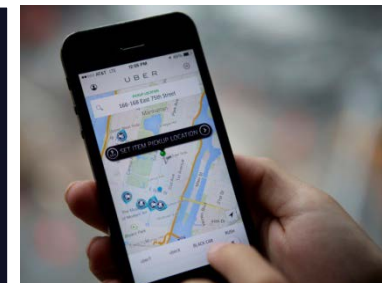
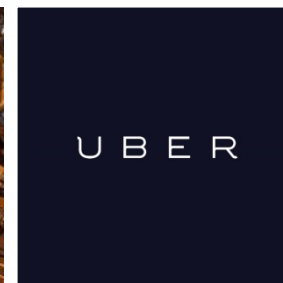
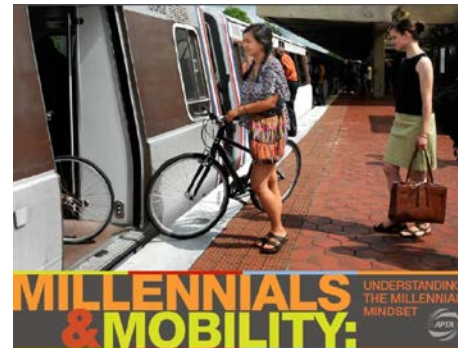
“Millennials” (or “Generation Y”)

- Rapidly changing trends in:
 - Household size
 - Educational attainment
 - Economic influence / consumption
- *Very active segment* of the population
- Increasing economic power (and *still climbing the income ladder*)
- *“Diverse, Expressive and Optimistic”*






“Millennials” (or “Generation Y”)

- Millennials are often described as heavy adopters of *technology* and *social media*
- Less dependent on cars, and adaptable to the *sharing economy*
- *Often* prefer urban locations and social lifestyles (at least *in some regions*)
- The focus is mainly on *urban population*...



Potential Factors Affecting the Mobility of Millennials

<p><u>Economic</u></p> <ul style="list-style-type: none"> • Recession • Unemployment 	<p><u>Auto Costs</u></p> <ul style="list-style-type: none"> • Gasoline • Auto insurance • Driver's education • Auto repairs • Other fees 	<p><u>Technology</u></p> <ul style="list-style-type: none"> • Communication technology • Transportation technology (Über) 	<p><u>Demographic Change</u></p> <ul style="list-style-type: none"> • Delayed marriage • Fewer children • Boomerang 
<p><u>Residential Location</u></p> <ul style="list-style-type: none"> • More likely to move to and live in cities 	<p><u>Cultural</u></p> <ul style="list-style-type: none"> • Environmentalists • Less materialistic 	<p><u>Regulatory Changes</u></p> <ul style="list-style-type: none"> • Graduated Driver's Licensing • Texting while driving laws 	<p><u>Alternative Modes</u></p> <ul style="list-style-type: none"> • Better transit • Improved infrastructure for walking/biking

(Source: Blumenberg, 2014)

Common Limitations of Previous Studies

Lack of information on key variables:

- e.g. *personal attitudes and preferences* for studies based on the analysis of National Household Travel Survey data

Use of non-random samples:

- e.g. *convenience samples* for studies on university students

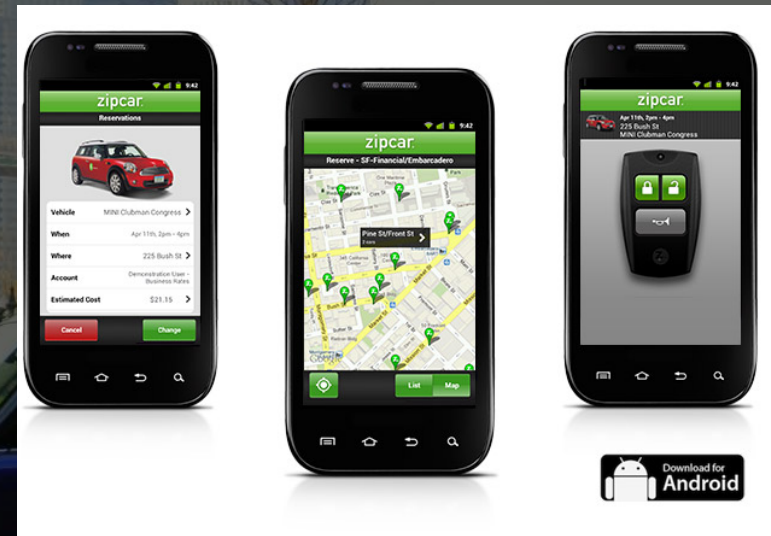
California Millennial Study

- Statewide study in California
- Design of a [detailed online survey](#) to collect information from millennials
- Survey distributed through an opinion panel to build a sample representative of population
- Sample includes [Millennials](#) and [Generation X](#)
- Quota sampling by [geographic region](#) and [neighborhood type](#)
- Focus on [personal attitudes](#), [lifestyles](#), [living arrangements](#), and [adoption of technology](#), among other factors controlled in the study.



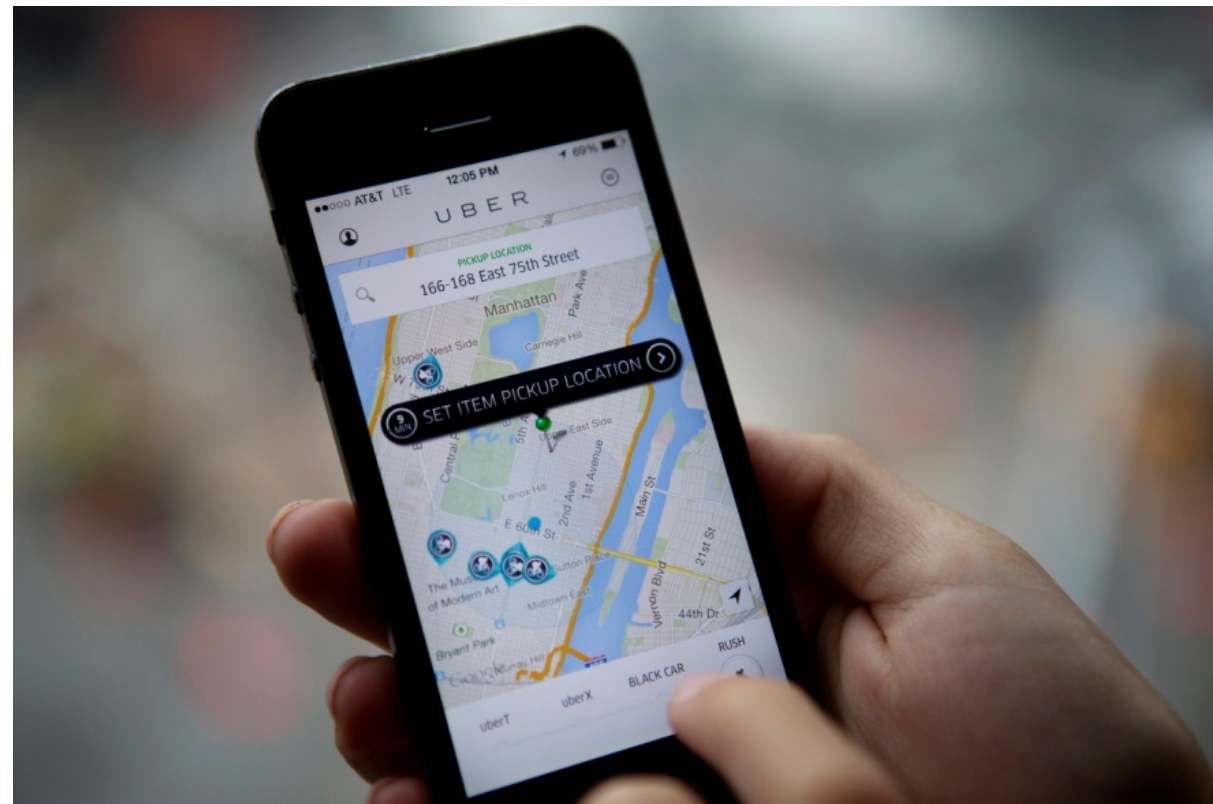
What is the Impact of Emerging Technologies?

- Smartphones (GPS, access to more info)
- Integrated ride-sharing / mobility
- Increasing opportunities to multitask
- Lower levels of car-ownership
- Extend range of public transportation-mobility

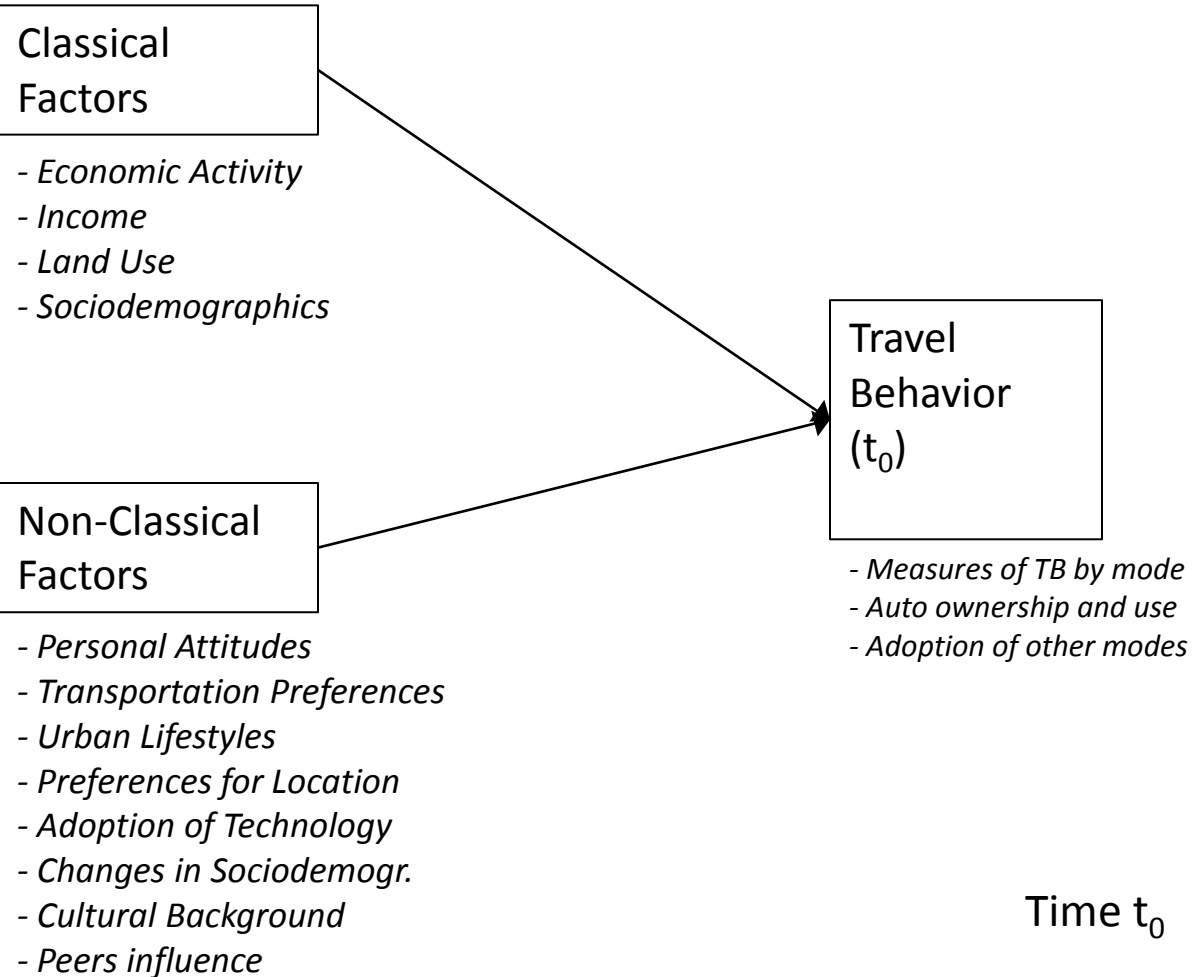


Car Ownership vs. Shared Mobility

U B E R



Behavioral Framework



Behavioral Framework

Classical Factors

- *Economic Activity*
- *Income*
- *Land Use*
- *Sociodemographics*

Non-Classical Factors

- *Personal Attitudes*
- *Transportation Preferences*
- *Urban Lifestyles*
- *Preferences for Location*
- *Adoption of Technology*
- *Changes in Sociodemogr.*
- *Cultural Background*
- *Peers influence*

Travel Behavior (t_0)

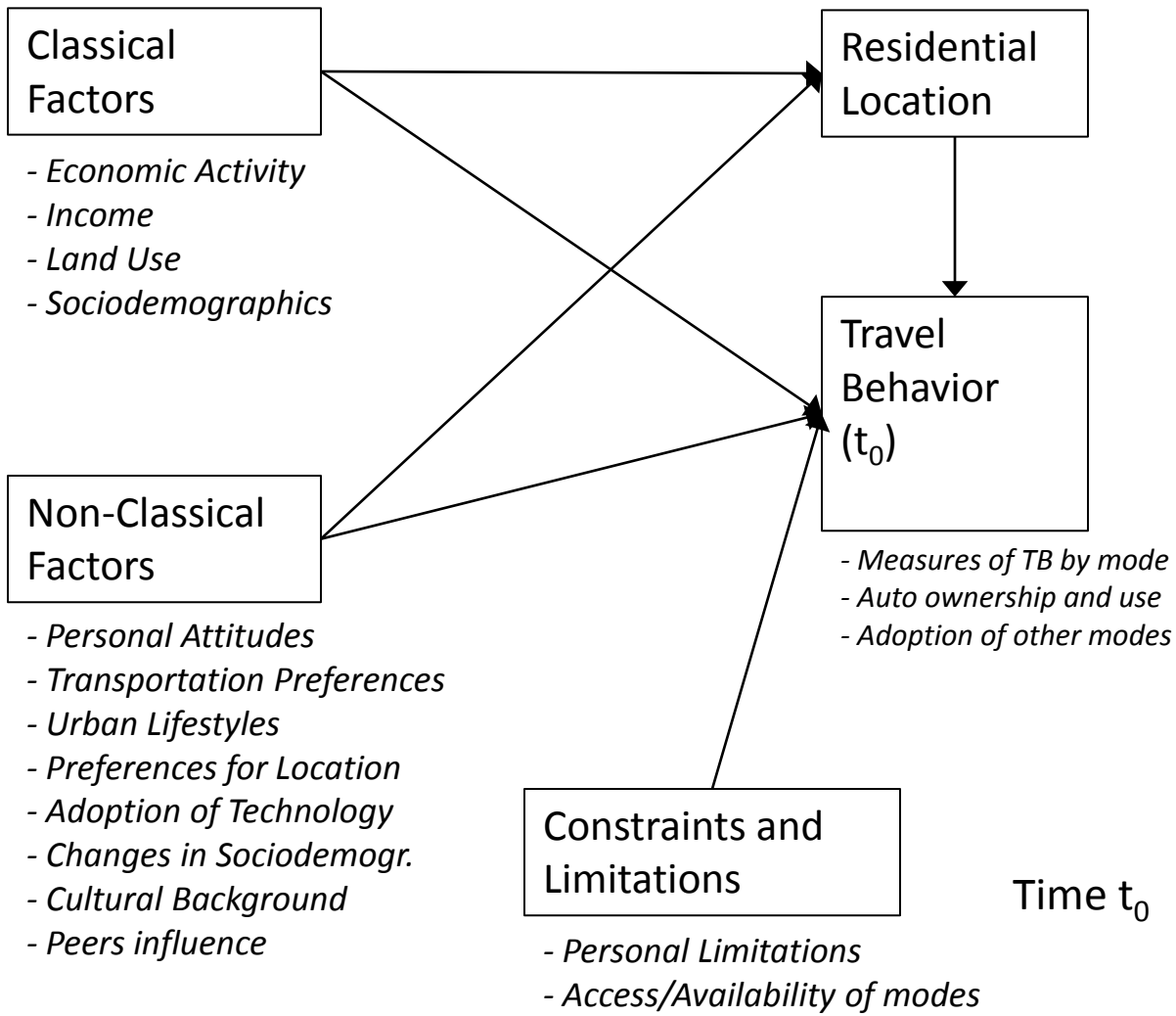
- *Measures of TB by mode*
- *Auto ownership and use*
- *Adoption of other modes*

Constraints and Limitations

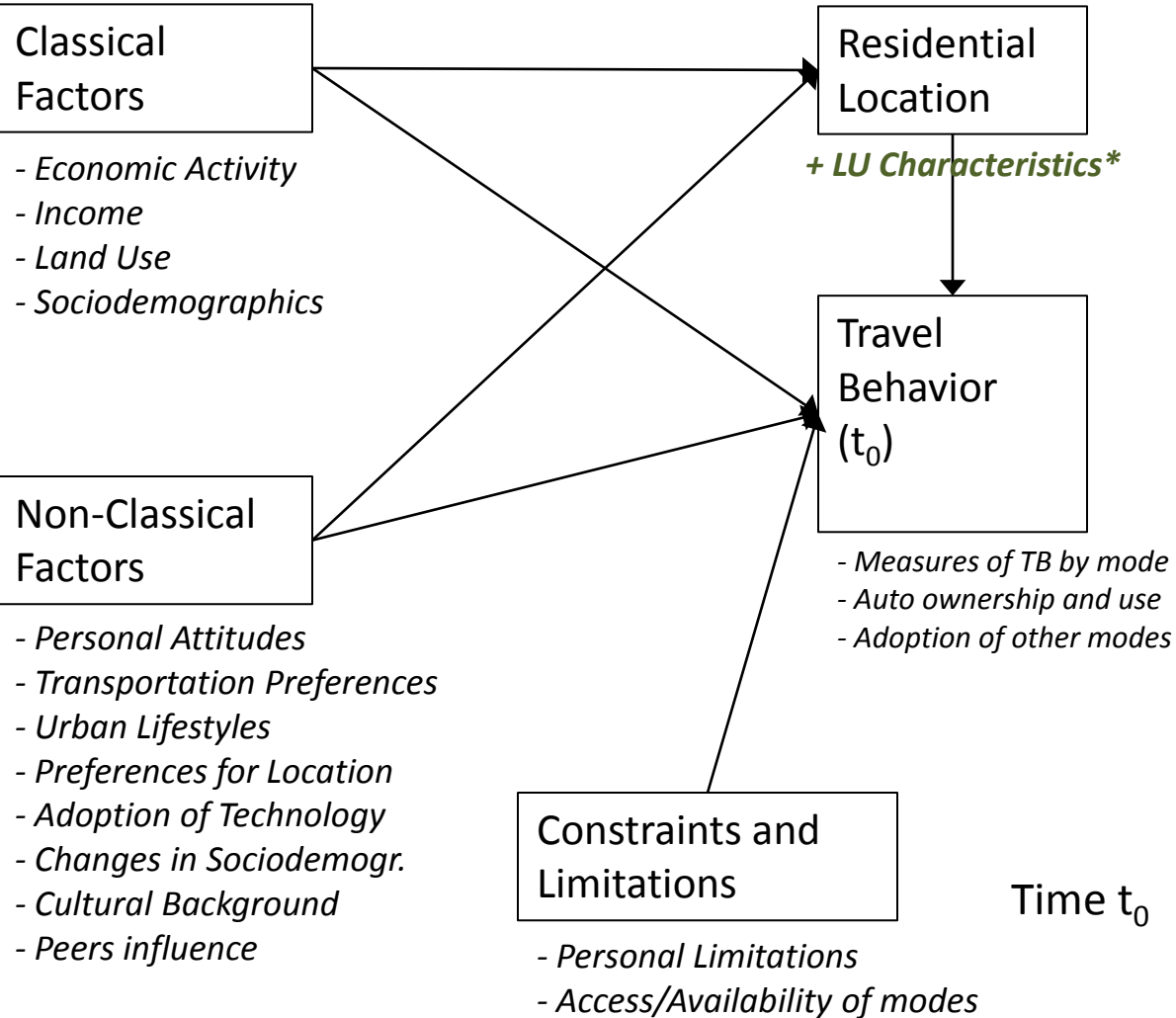
- *Personal Limitations*
- *Access/Availability of modes*

Time t_0

Behavioral Framework

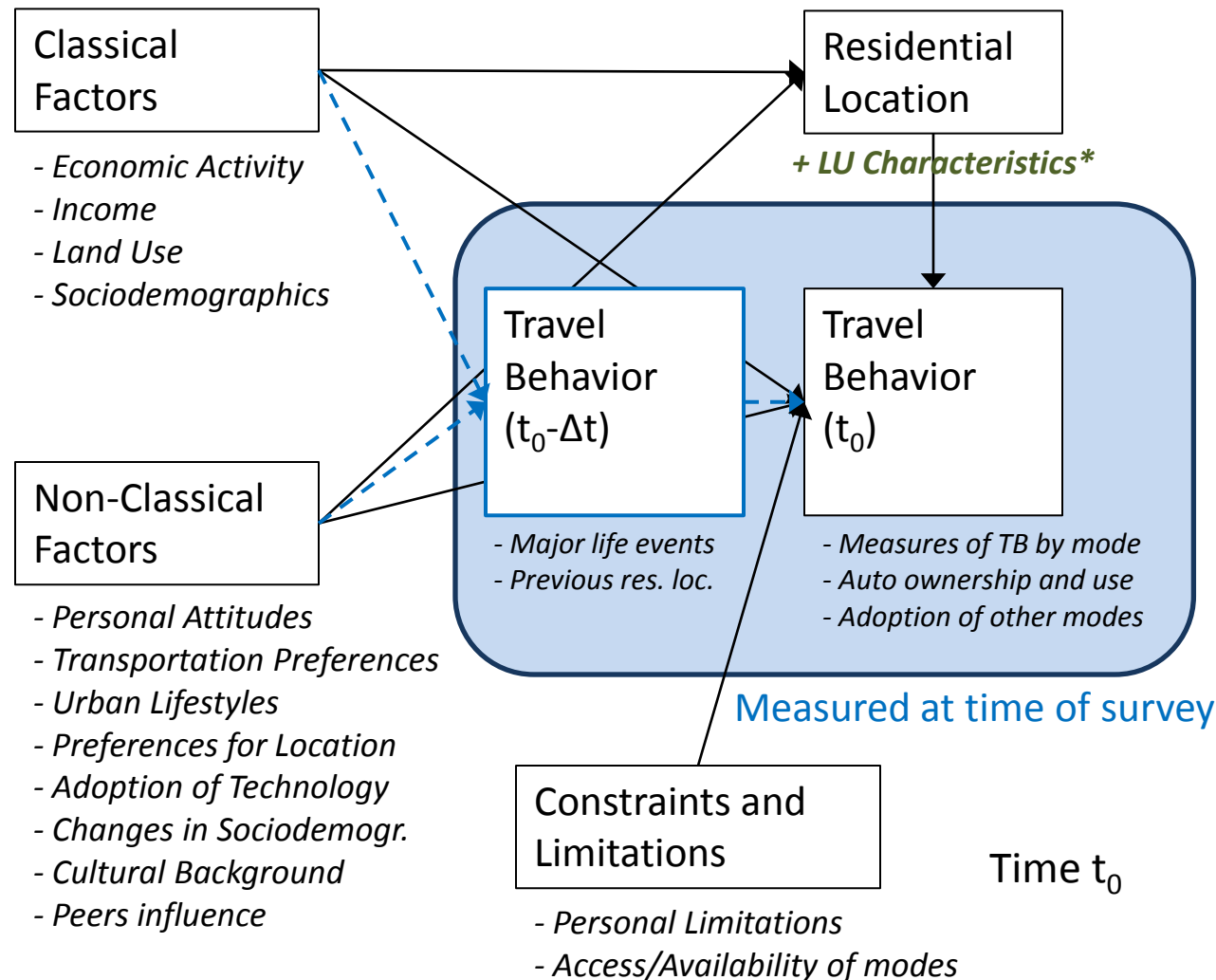


Behavioral Framework

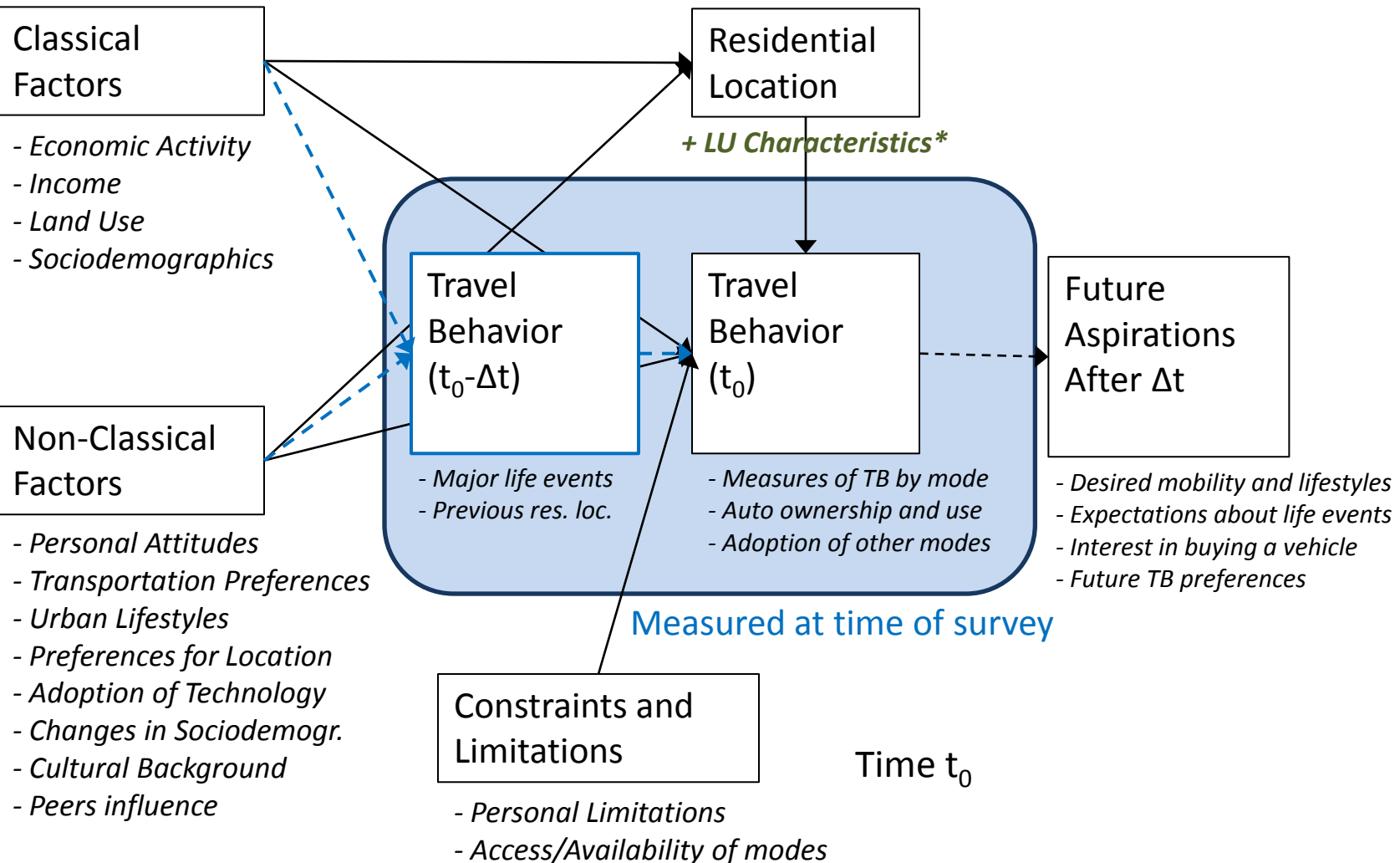


*Measured with external data (e.g. US EPA Smart Location data), after geocoding of residence (X, Y)

Behavioral Framework

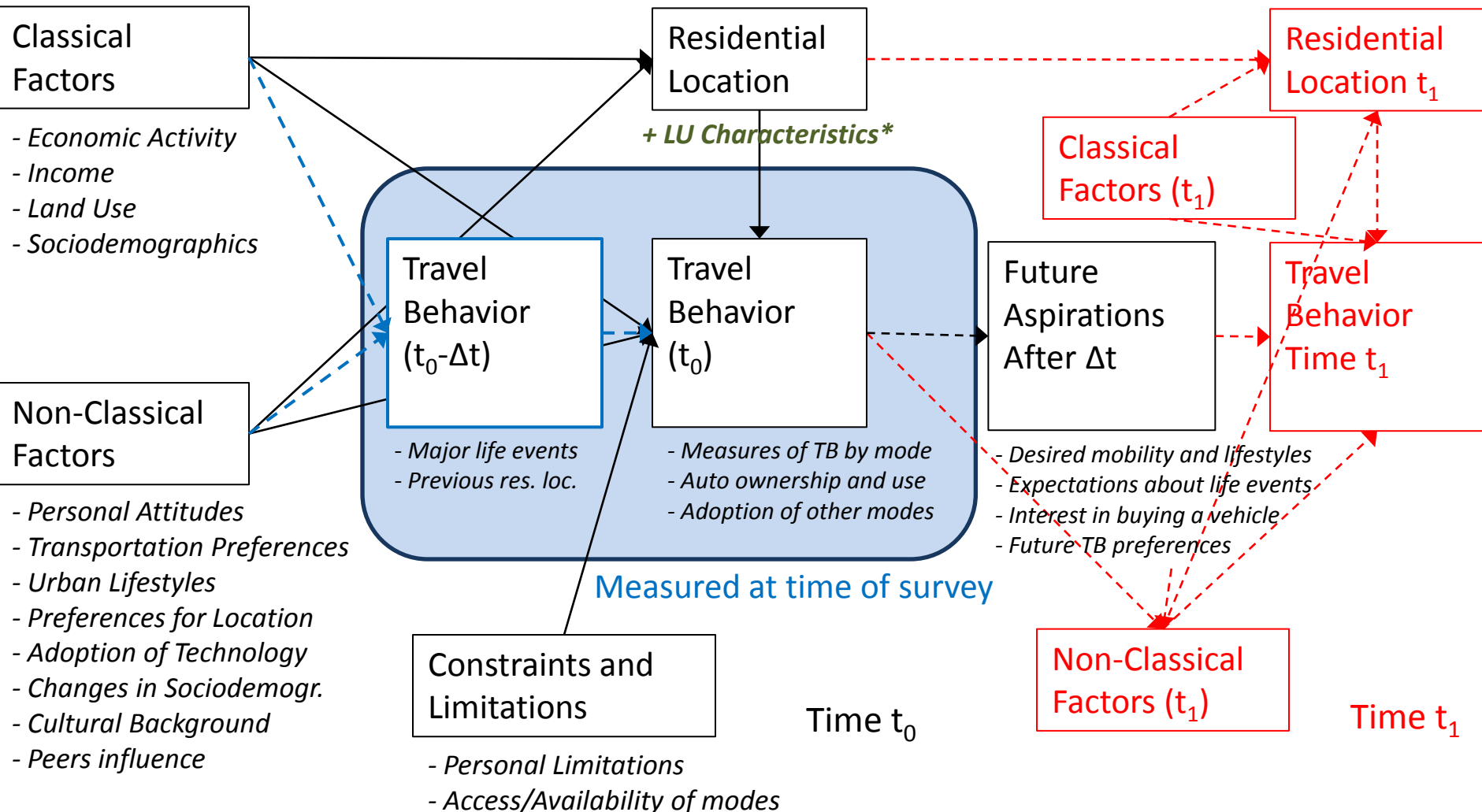


Behavioral Framework



*Measured with external data (e.g. US EPA Smart Location data), after geocoding of residence (X, Y)

Behavioral Framework



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California Millennial Dataset

+270 Rural (All California)

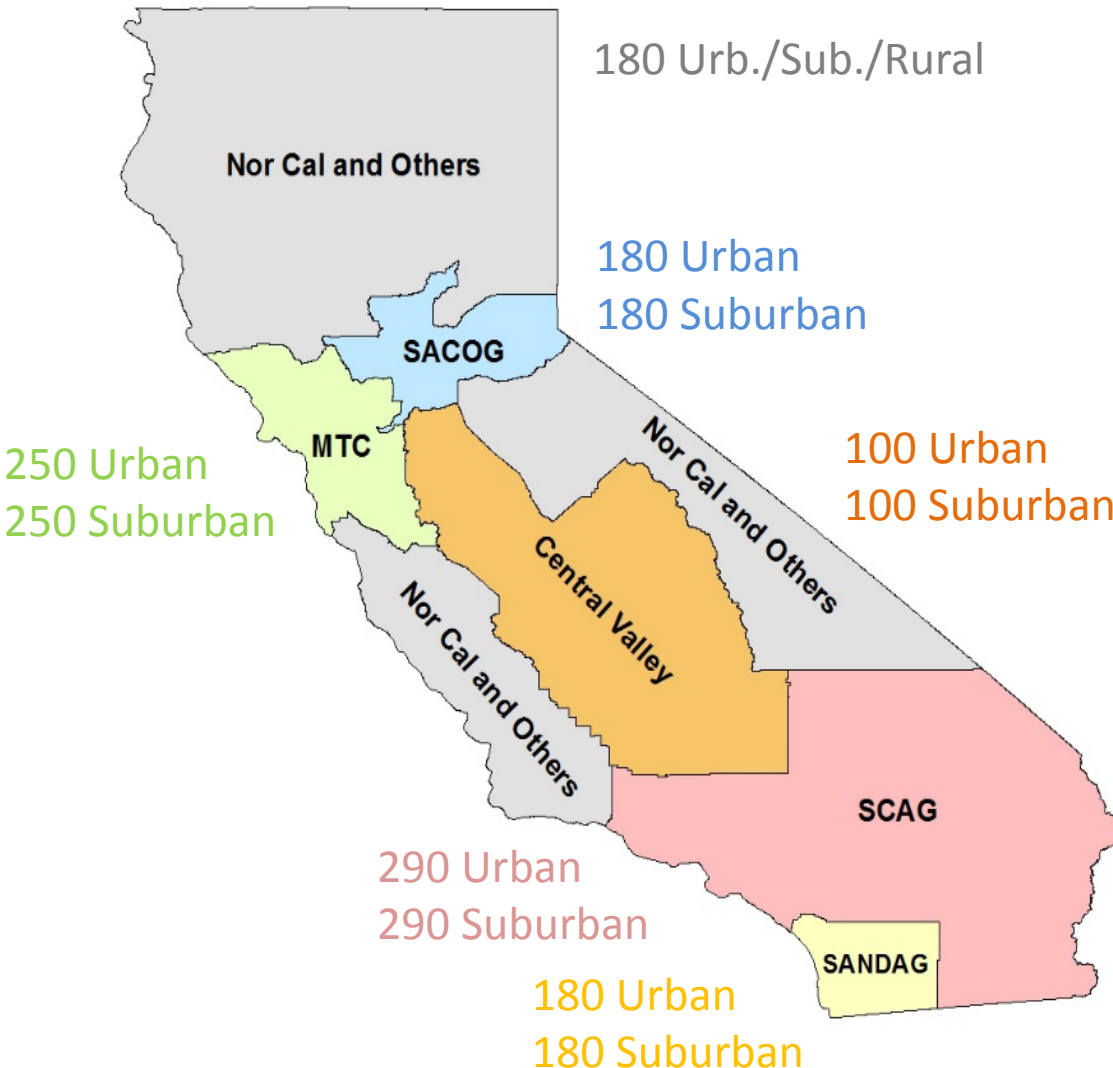
Control for demographic targets:

- Age
- Gender
- Income
- Race and Ethnicity
- Presence of Children (Y/N)

Data collection in Fall 2015

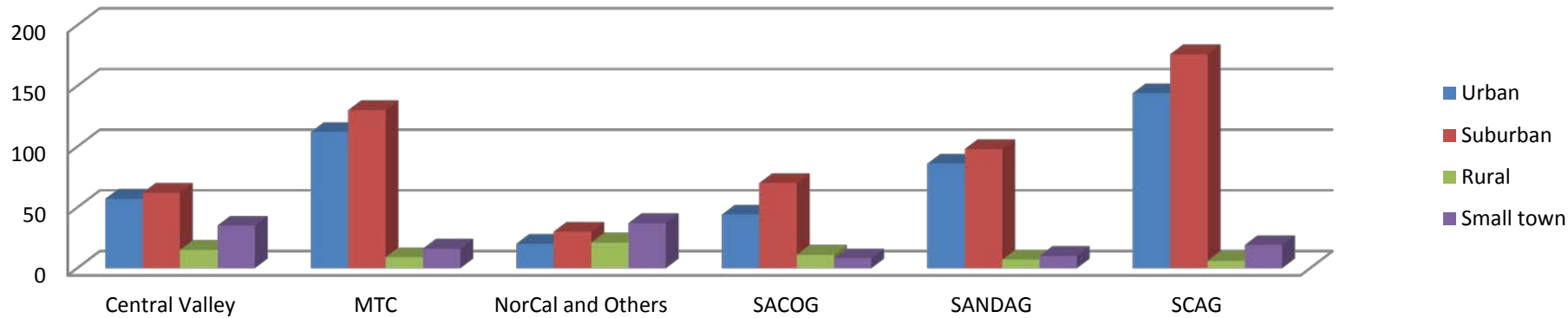
*Target of:
1400 Millennials
1000 "Gen Xers"*

N = 2400 Total sample size

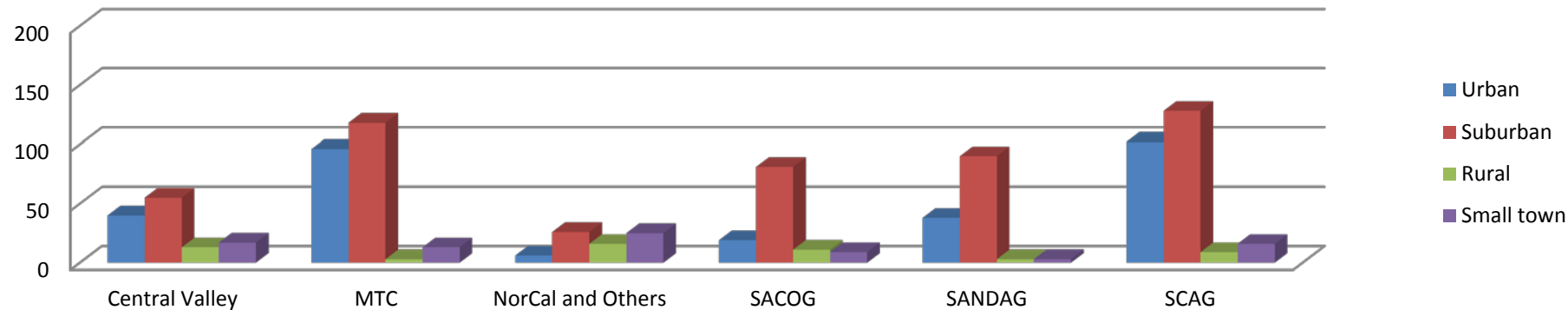


Sample Characteristics (N=2160)

Millennials' Sample Distribution by Region and Neighborhood type

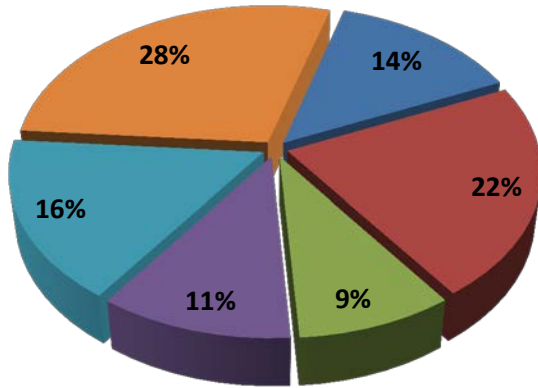


Gen X's Sample Distribution by Region and Neighbor. Type

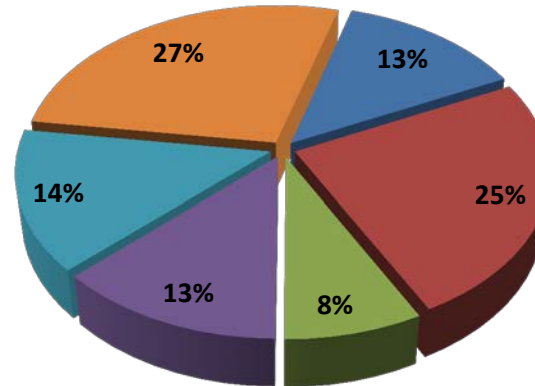


Sample Characteristics (N=2160)

Millennials

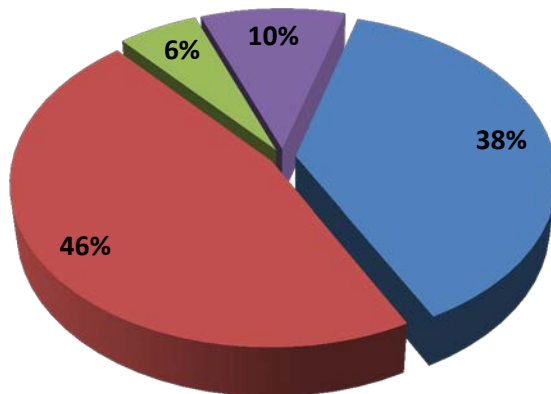


Generation X

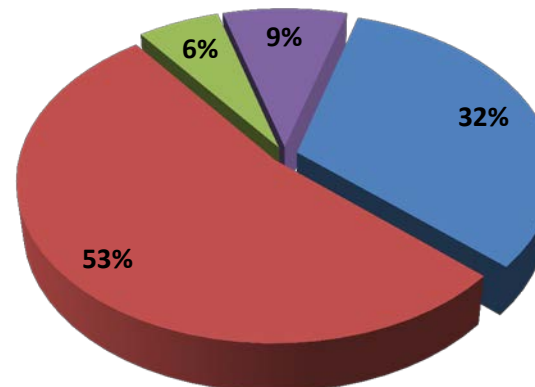


- Central Valley
- MTC
- NorCal and Others
- SACOG
- SANDAG
- SCAG

Millennials



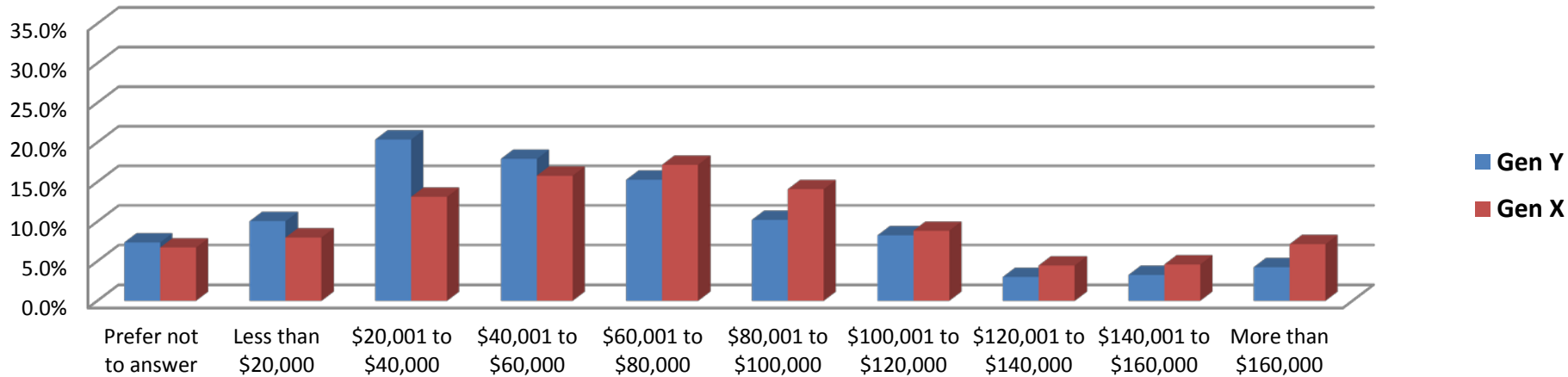
Generation X



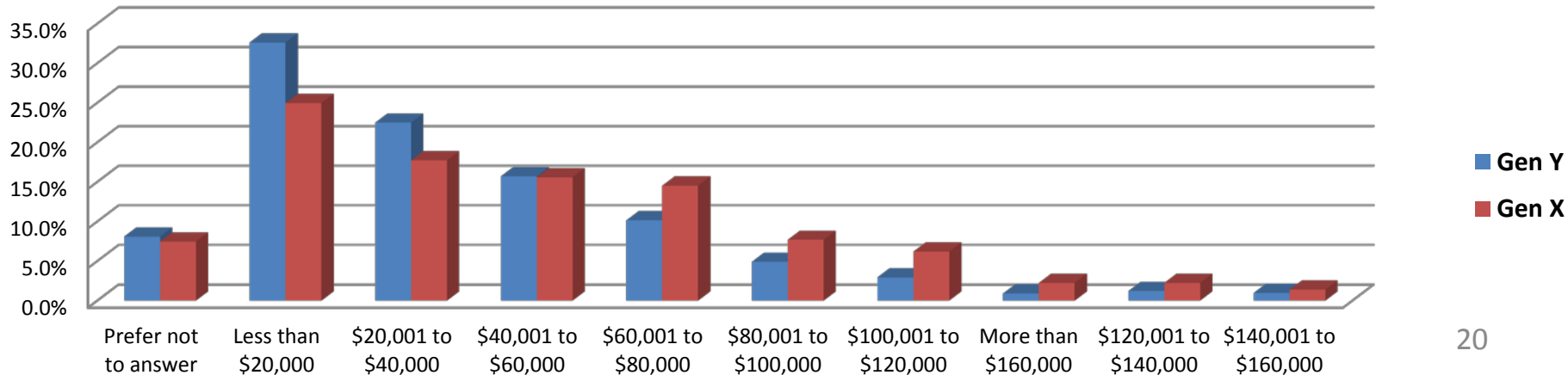
- Urban
- Suburban
- Rural
- Small town

Sample Characteristics (N=2160)

Distribution of Respondents by Annual *Household* Income (\$)

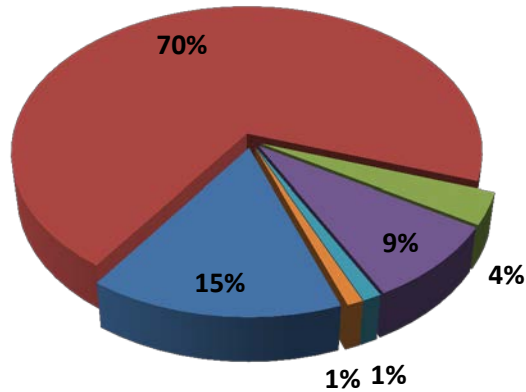


Distribution of Respondents by Annual *Individual* Income (\$)



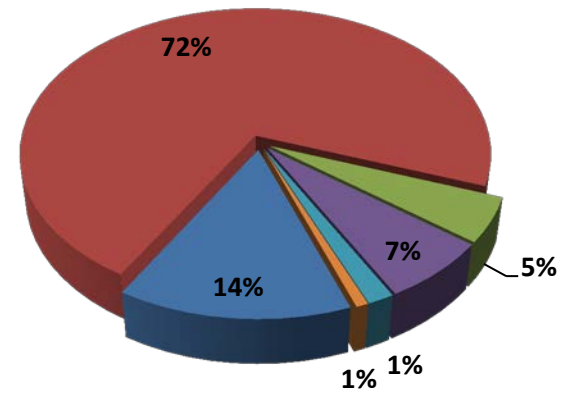
Sample Characteristics (N=2160)

Millennials

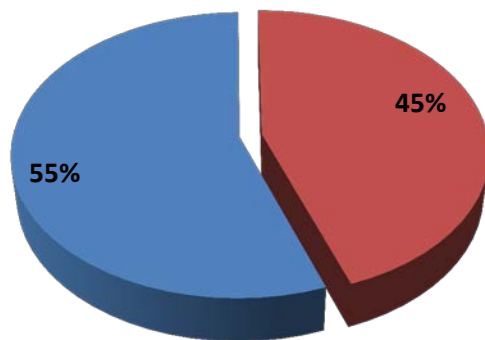


- Asian/Pacific Islander
- White/Caucasian
- Black/African American
- other/multi-racial
- Decline to Answer

Generation X

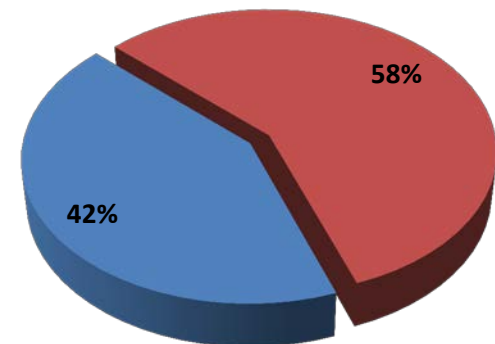


Millennials



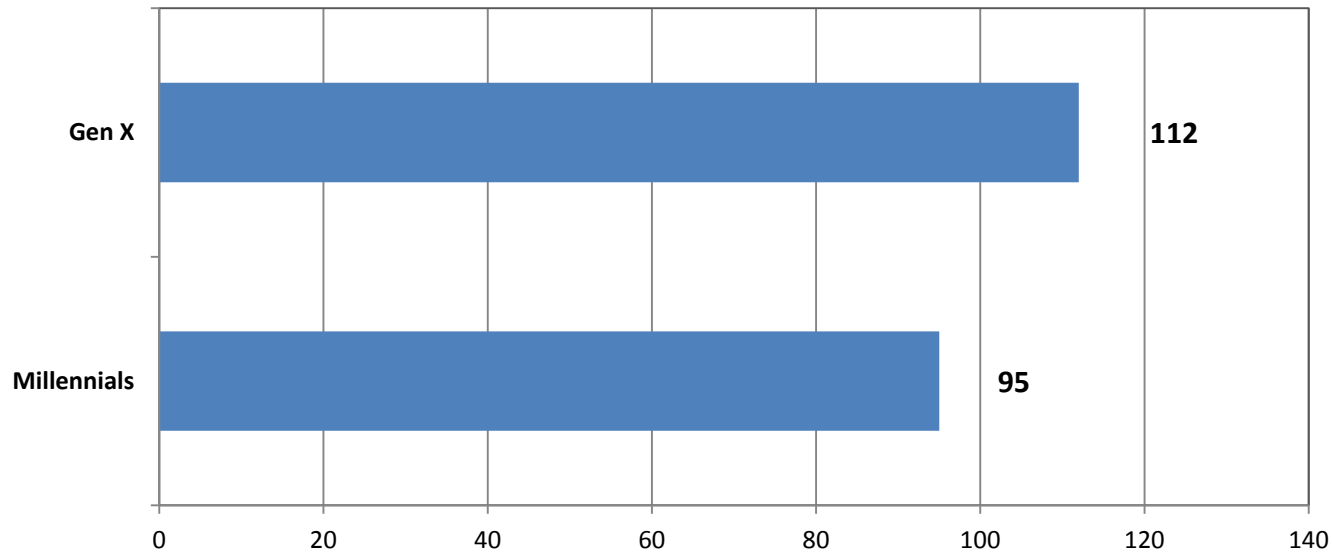
- Household without Children
- Household with Children

Generation X



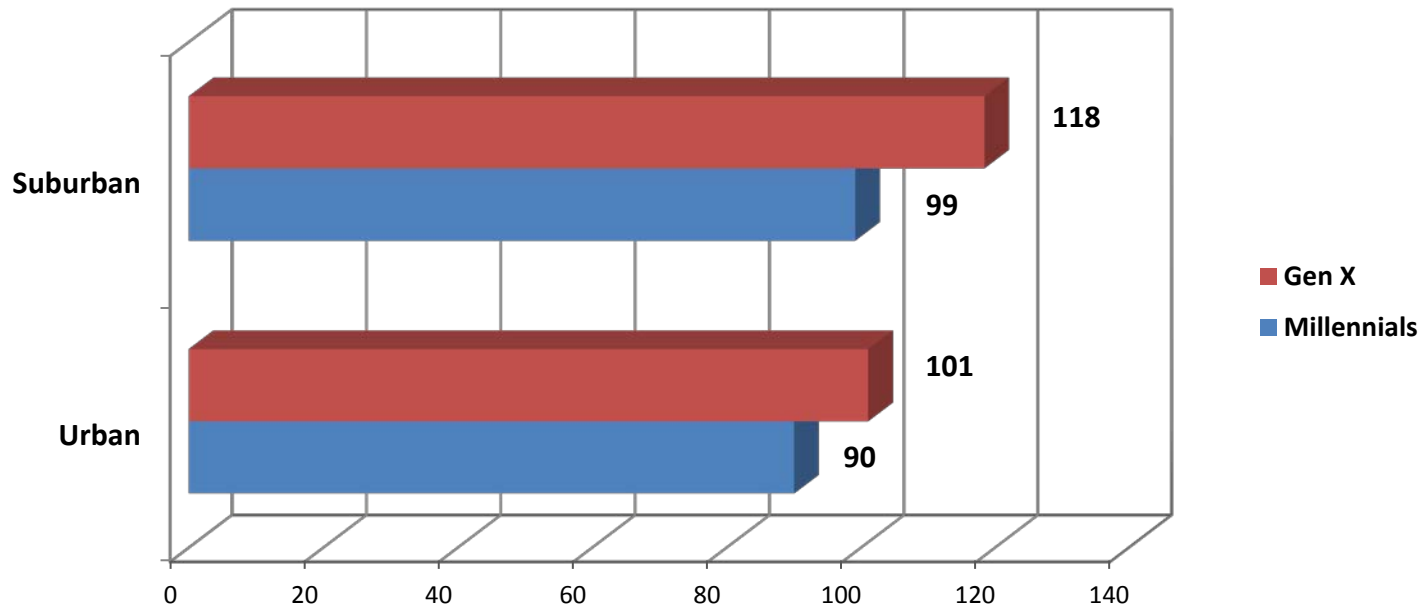
Vehicle Miles Traveled (N=2110)

Average Weekly VMT by Age Group



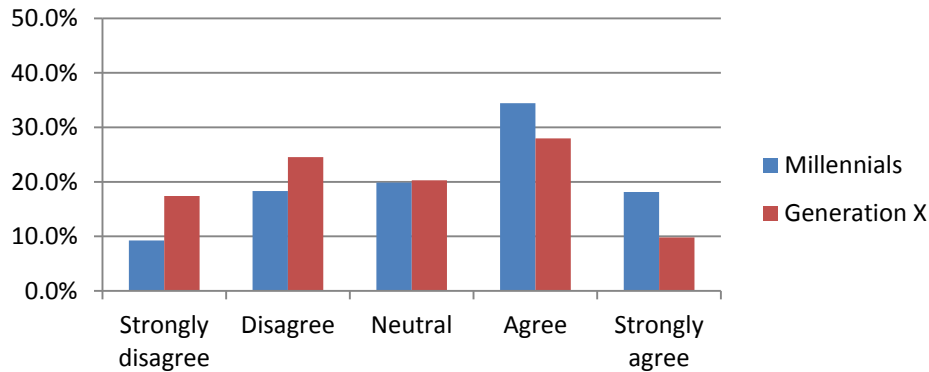
Vehicle Miles Traveled (N=2110)

Average Weekly VMT by Neighborhood Type

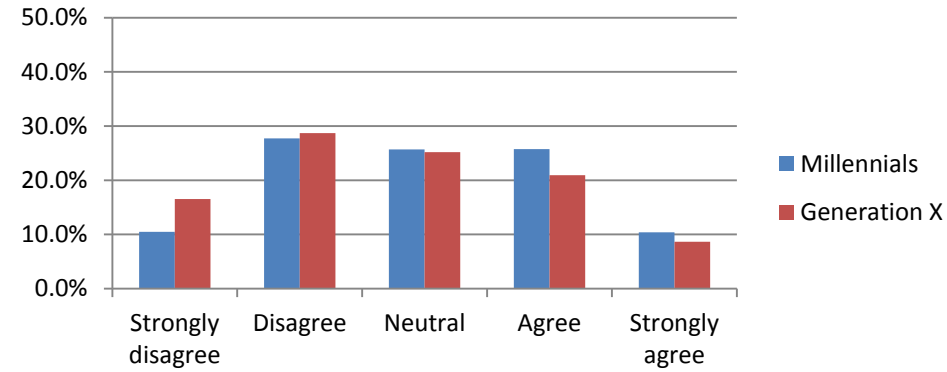


A Transient, Green Generation

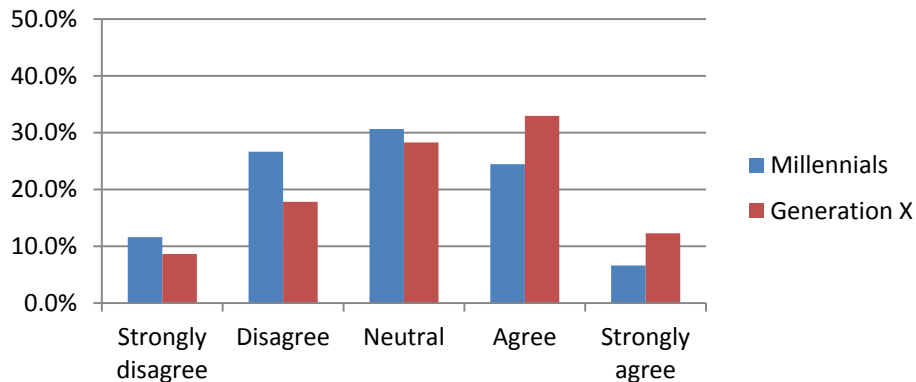
"I'm still trying to figure out my career (e.g. what I want to do, where I'll end up)"



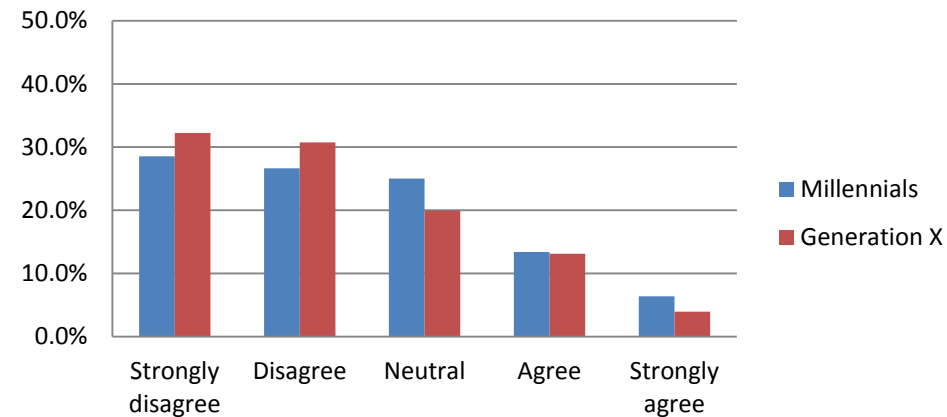
"I prefer to live close to transit even if it means I'll have a smaller home and live in a more crowded area"



"I'm already well-established in my field of work"

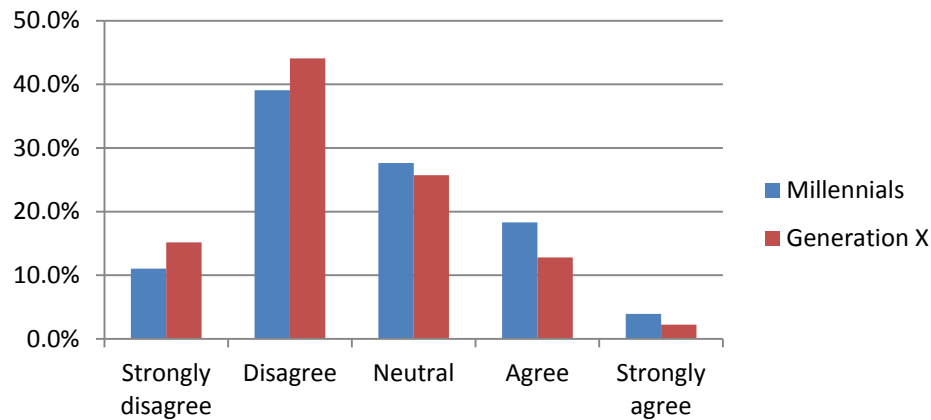


"We should raise the price of gasoline to reduce the negative impacts on the environment"

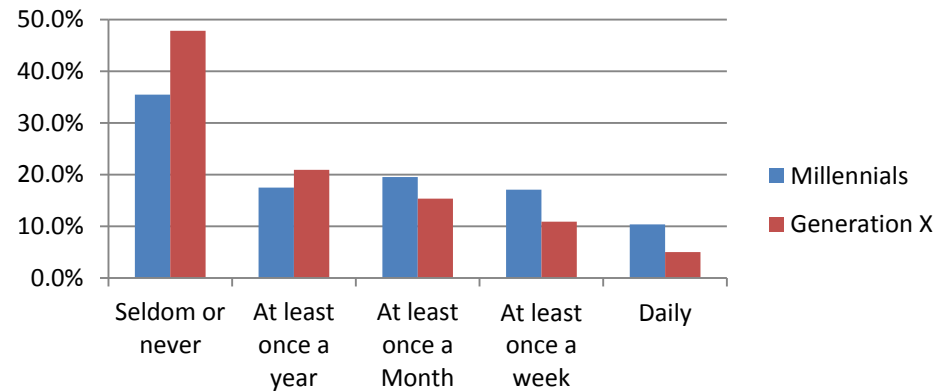


Tech-Savvy, Smartphone-Oriented

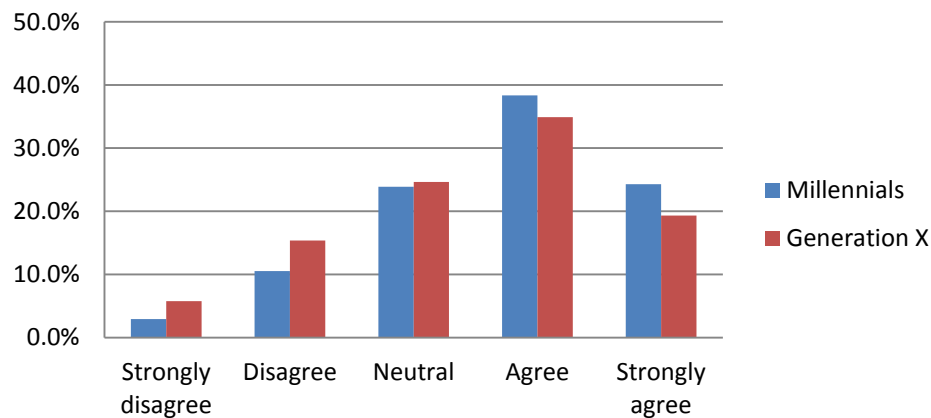
"I avoid doing things that I know my friends would not approve"



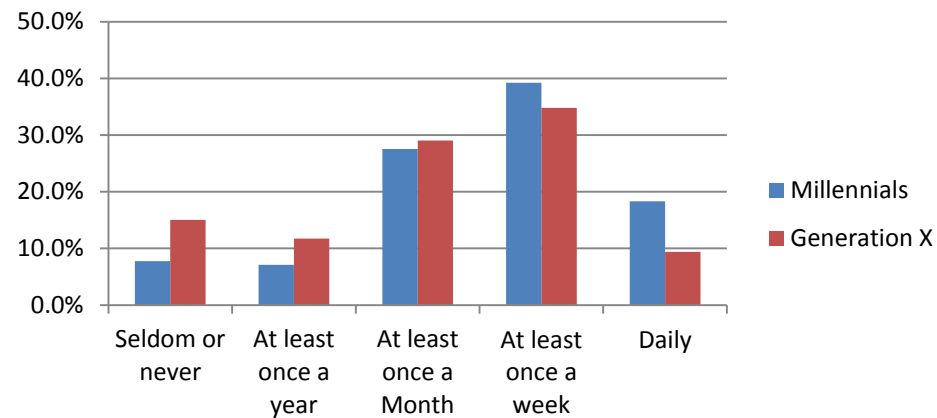
Use smartphones to "decide which means of transportation, or combinations of multiple means, to use for a trip"



"Having Wi-Fi and/or 3G/4G connectivity everywhere I go is essential to me"

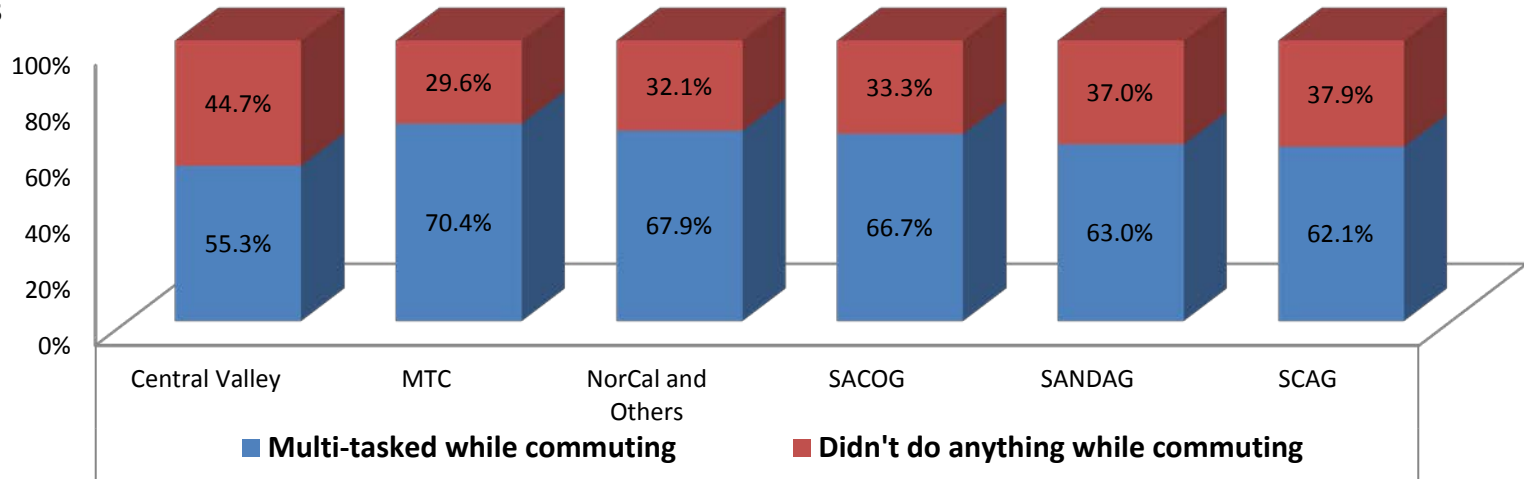


Use smartphones to "identify possible destinations (e.g. restaurant, café, etc.)"

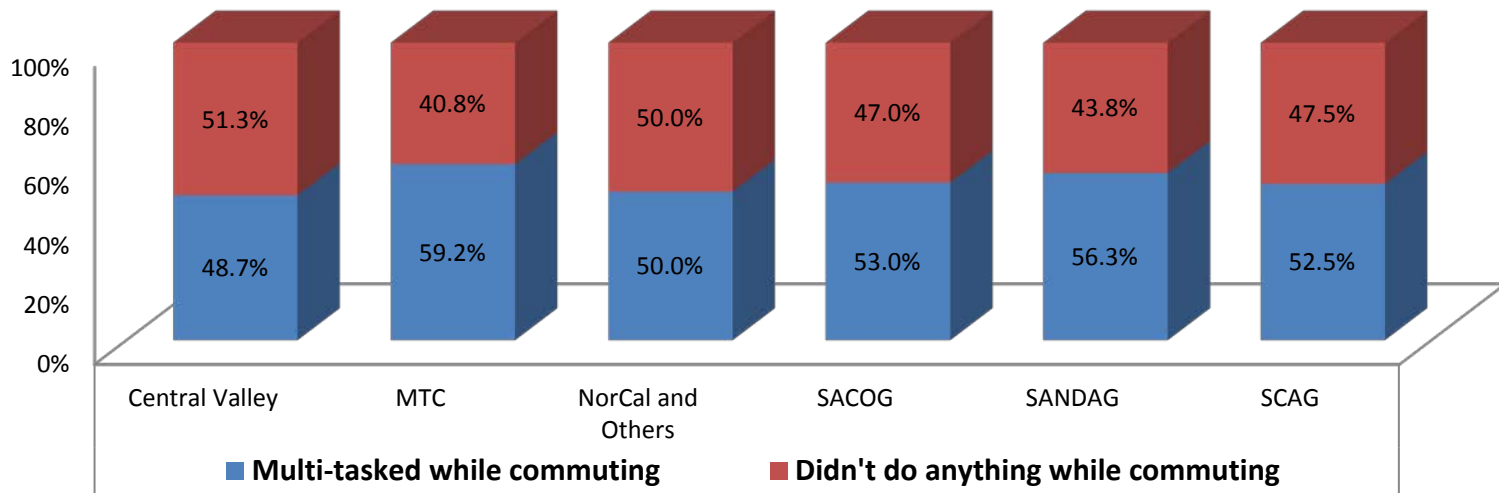


Multitasking while Traveling

Millennials

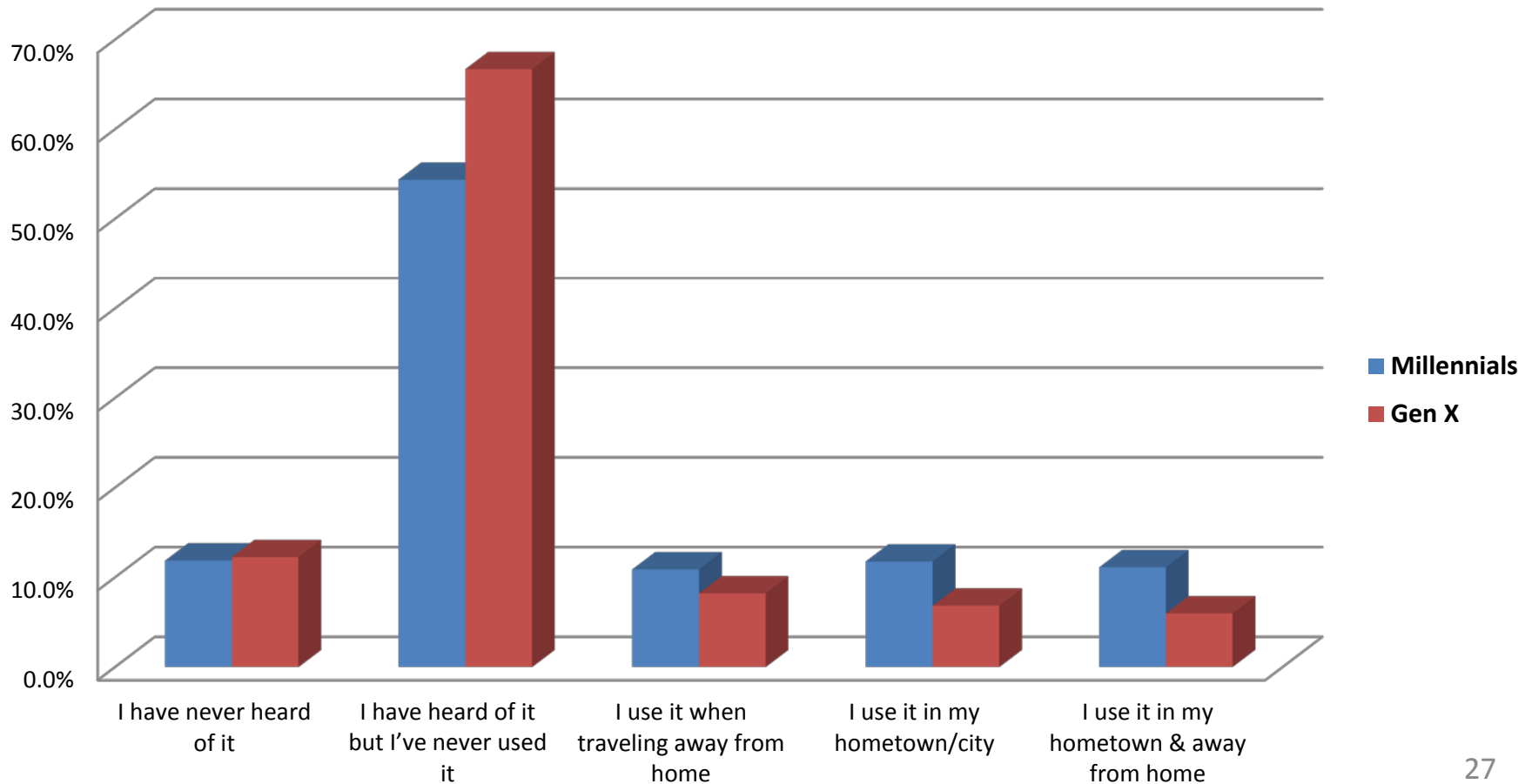


Generation X



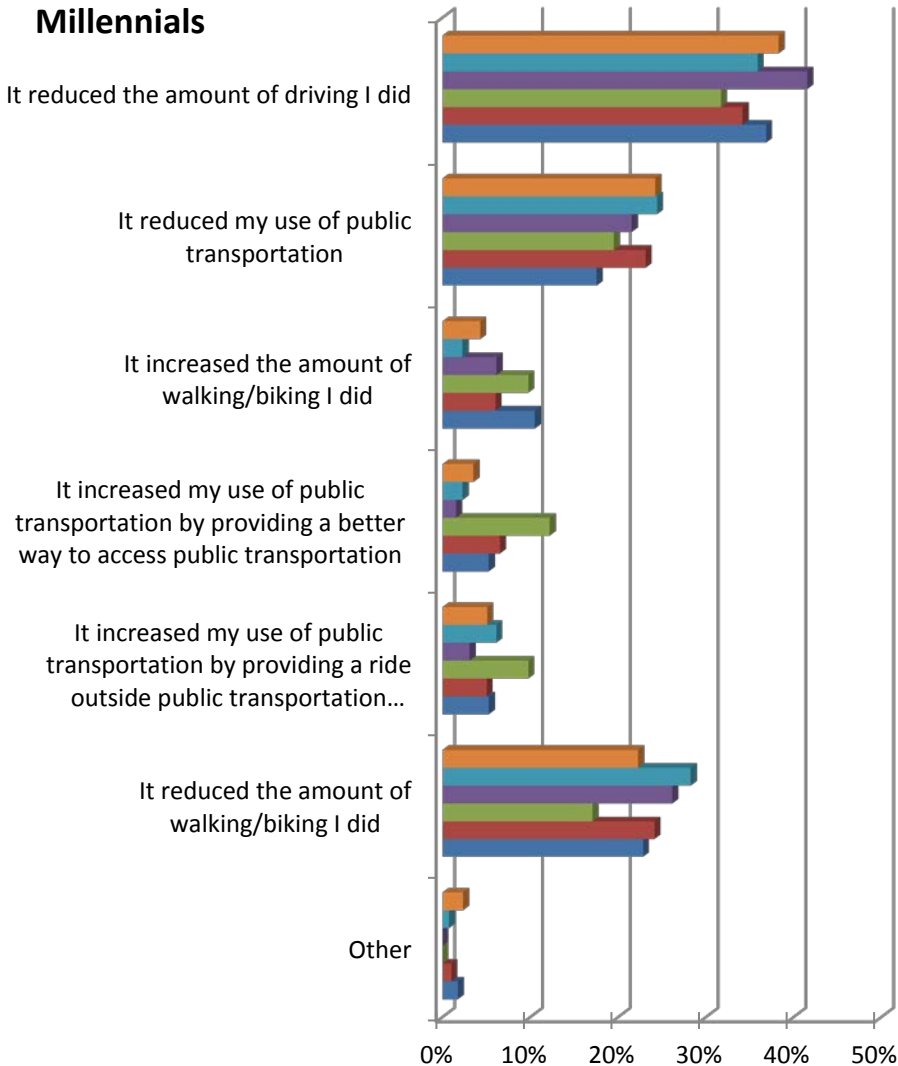
A Uber-Friendly Generation?

Familiarity with and usage of On-demand ride services (e.g. Uber, Lyft)

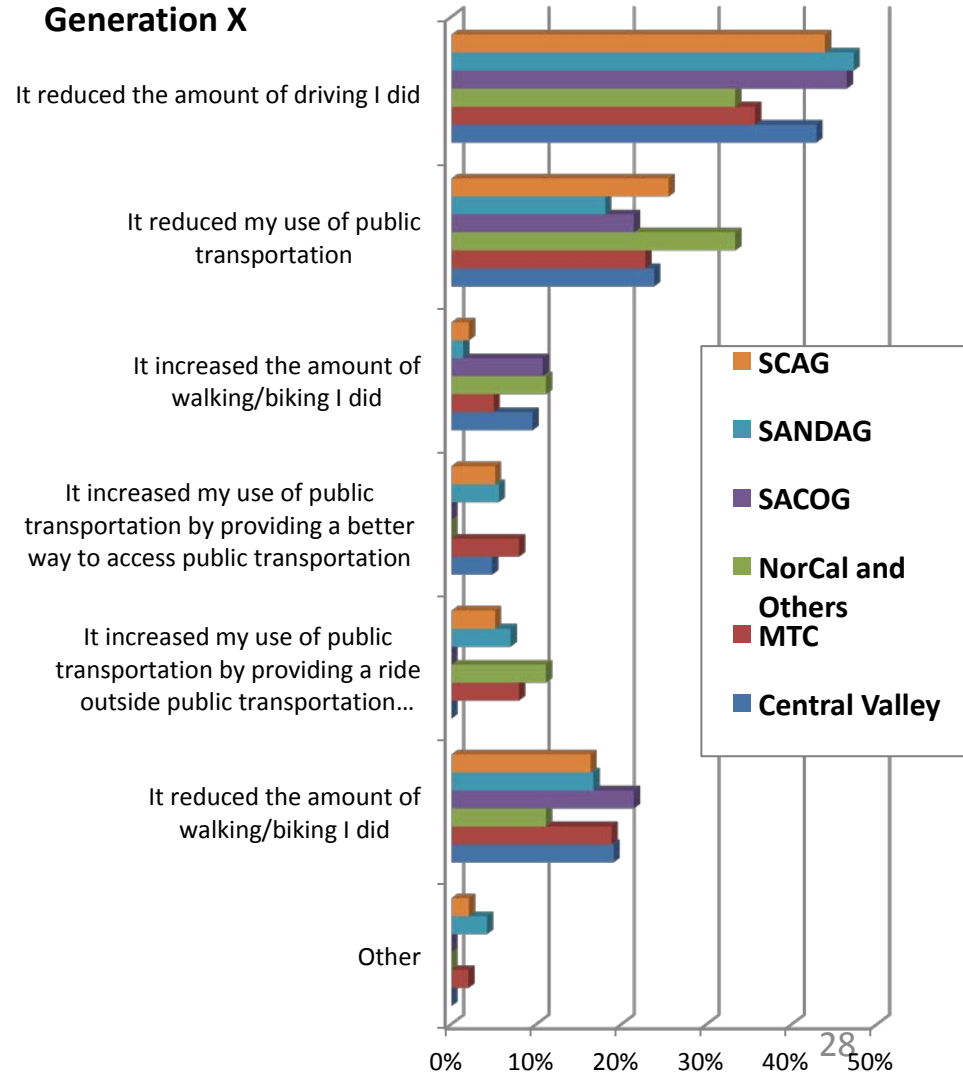


Impact of Last Uber Trip on the Use of Other Means of Travel

Millennials



Generation X



Preliminary Findings, and Next Steps

- Consistent with expectations, millennials are found to:
 - Drive less
 - Use ICT devices more often
 - Multitask during their commute
 - Show a stronger commitment to protect the environment
 - Be less opposed to increasing gas taxes to fund public transit
 - Adopt share mobility services more often
- But how do their behaviors relate to...
 - Stage in life
 - Personal attitudes, lifestyles and living arrangements
 - Adoption of technology and mobility choices
- The study can provide insights into *potential response of millennials to policies*, and effect on future travel demand

Research Question 1

What are the **relationships among travel behavior, personal preferences, adoption of technology and residential location** of millennials?

Estimation of frequency models for the use of various means of travel, segmented respectively for millennials and Gen Xers.

- What are the main factors affecting the adoption of modes alternative to cars?
- What is the impact of the adoption of *on-demand ride services* (Uber/Lyft) on the use of other modes?
- What is the impact of living arrangements vs. personal preferences?

What is the impact of millennials' level of education, income and geographic location?

Research Question 2

Are the dominant trends of millennials' travel **permanent** or **temporary** (e.g. effect of a transition in life stages)?

Estimation of a VMT model, which controls for sociodemographics, personal attitudes, lifestyles, and geographic location.

- What is the impact of stage of life (e.g. being married, presence of children) on the travel behavior of millennials?
- What is the impact of personal attitudes and preferences?
- How does the place where somebody grew up affect travel behavior?
- What is the impact of major life events (new job, relocation to city, moving out of parents' place, moving in with partner, etc.)?

Not possible to fully analyze these issues using NHTS, or other currently available travel survey data.

Research Question 3

How many millennials match the stereotype of *urbanite/socialite* common in the media?

Cluster analysis to analyze different profiles of people (socialite/urbanite vs. others)

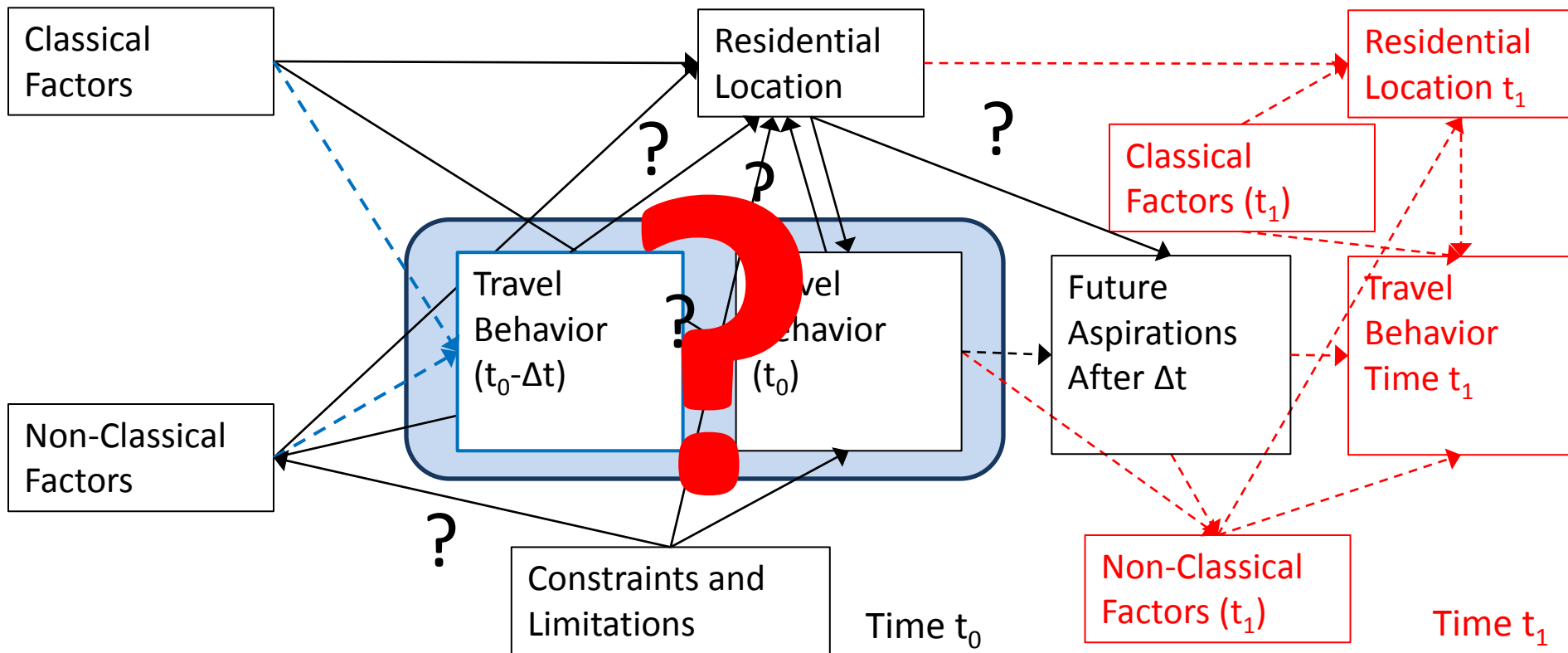
Stereotype common in the media:

- Live in urban areas
- Have dynamic lifestyles
- Heavy users of social media
- Own zero (or few) cars
- Use public transportation
- Adopt new technologies



How many millennials vs. members of older generation fit in this profile?

Research Question 4



Structural Equations Model that explores relationships among attitudes and preferences, residential location, travel behavior, and future aspirations for mobility, etc.

Acknowledgements

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Thank you for your attention!



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