LIFE STAGE AND ITS RELATIONSHIP WITH SHARED MOBILITY USE (AND KNOWLEDGE)

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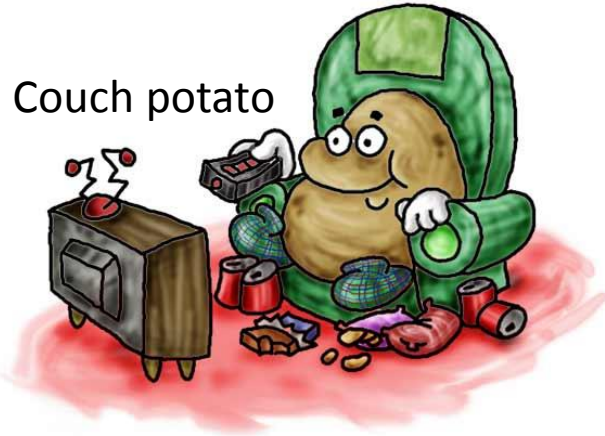
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RESEARCH QUESTION

How are life stage and shared mobility related? Is there a relationship between the two?

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LIFE STYLE VS LIFE STAGE

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Life style

Couch potato

Gamer

Outdoor oriented

Athletic

Child oriented

Life stage

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Defining Life Stage

- The literature points to two different terms: <u>life stage</u> and <u>life style</u>

    - <u>Life stage</u>: Categorization determined by socio-demographic traits.
    - <u>Life style</u>: Categorization determined by personal attitudes and actions. i.e. couch potato or outdoor enthusiast

- We define life stage as **a point on a timeline in which individuals advance linearly based on socio-demographic characteristics**

For this research, we focus only on life stage.

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Why life stage?

- Why do I focus on life stage?
    - Trying to understand the differences between groups of people based on socio-demographic traits
    - There's been a spotlight on Millennials (young adults ages 18-35)
- Why not only life style?
    - Many studies, aware or not, already incorporate life style in to their research through the use of attitudinal variables and factor analysis.

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Research methodology: representative travel survey
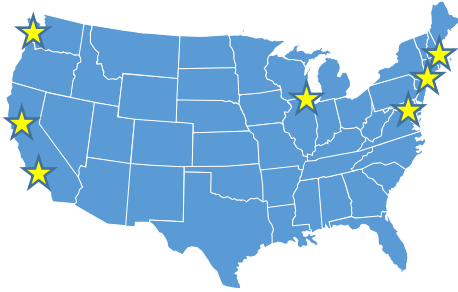
Survey Statistics:
- ~4000 completed responses
- Conducted Sep 2014 – Dec 2015
- Two survey waves – new questions on new mobility added
- Urban & suburban zip codes
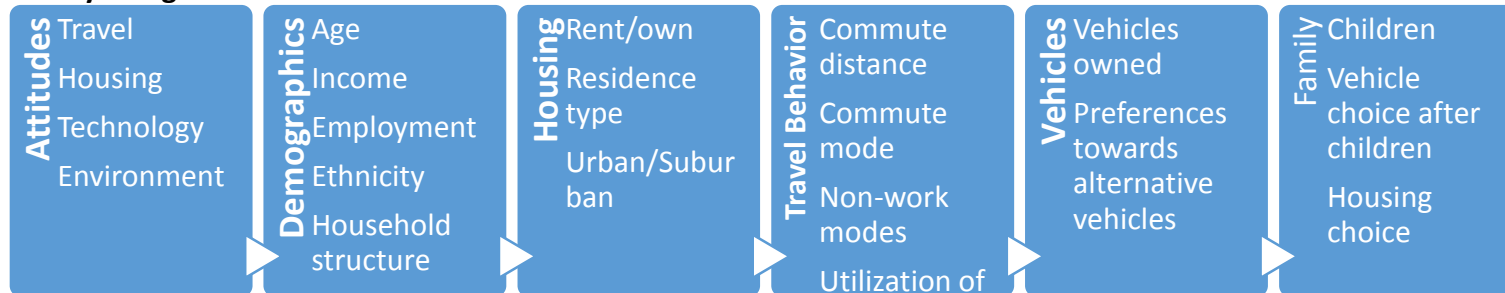- 100+ questions
- Avg. completion time ~25 min

Locations:
- Boston, MA
- Chicago, IL
- Los Angeles, CA
- New York, NY
- Seattle, WA
- San Francisco, CA
- Washington, D.C.

Key research topics:
- Travel and housing preferences by generation and urban/ suburban location
- Adoption and use of new mobility services (carsharing and ride-hailing)
- Impact of new mobility services on travel behavior (vehicle ownership and other indicators)

Survey Design:

Attitudes	Demographics	Housing	Travel Behavior	Vehicles	Family
Travel	Age	Rent/own	Commute distance	Vehicles owned	Children
Housing	Income	Residence type	Commute mode	Preferences towards alternative vehicles	Vehicle choice after children
Technology	Employment	Urban/Suburban	Non-work modes		Housing choice
Environment	Ethnicity		Utilization of		
	Household structure				

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Defining life stage using cluster analysis

- cluster analyzed responses based on 4 socio-demographic variables.
  - 4 clusters:
    - Older people
    - Larger household
    - Young family
    - Younger people

- "In statistics, the search for relatively homogenous groups of objects is called cluster analysis
  - The goal of cluster analysis is to identify homogenous groups or clusters
    - In cluster analysis, group membership is always unknown
    - The number of groups is unknown"

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Clusters

| Cluster	Average Age	Average Household Size	Average Number of Adults in household	Presence of children in household
Large households, no children, living with roommates (N=126)	40.4	4.48	4.33	0.03
Older people, no children living at home (N=845)	64.0	1.78	1.78	0
Younger people, no children, small household size (N=780)	34.0	1.99	1.88	0
Young parents, children living at home, "ideal family" (N=231)	42.8	3.95	2.19	1

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Dependent Variable

- We wanted to know who is using these services and if not, why not.
  - We used 3 levels of knowledge and usage
    1. **Has never heard of these services**
       1. "No, I have never heard of them"
    2. **Has heard of these services, but has not used them**
       1. "Yes, I have heard of them, but have not used them"
    3. **Has used/uses these services.**
       1. "Yes, I have made trips in them with friends, but don't use the apps myself"
       2. "Yes, I use them only when traveling away from home"
       3. "Yes, I use them while traveling in/around my home city".

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RESULTS

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Do you know shared mobility?

Large households, no children, living with roommates
- 7% Has no knowledge of shared mobility
- 74% Has heard of shared mobility services but has not used it
- 19% Shared mobility service user

Older people, no children living at home
- 6%
- 83%
- 11%

Younger people, no children, small household size
- 5%
- 59%
- 36%

Young parents, children living at home
- 5%
- 72%
- 23%
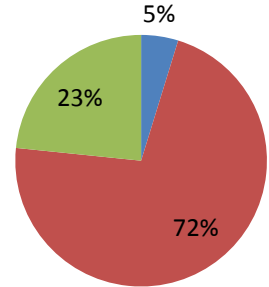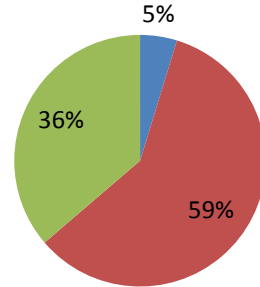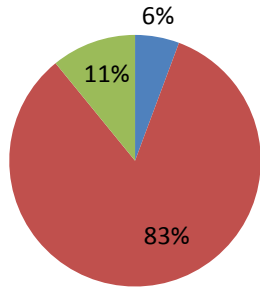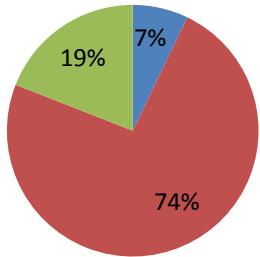
- Has no knowledge of shared mobility
- Has heard of shared mobility services but has not used it
- Shared mobility service user

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Difference in means

	Has never heard of on-demand ride sharing	Has heard of on-demand ride sharing but has never used it	On-demand ride sharing user
Age	Same	Same	Lower
Level of Education	Lowest	Higher	Highest
Income	Same	Same	Higher
Car Dependent/Anti-transit	Same	Same	Lower
Hopelessness on the environment	Highest	Same	Same
Pro-environment/Environment loving	Same	Same	Highest
Pro-technology/Tech Loving	Lowest	Higher	Highest
Residential Attitudes - Wants high density	Same	Same	Highest
Residential Attitudes - Wants kid friendly	Same	Same	Lowest

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Models: Segmented and pooled (traditional) model

	Pooled model (N=1,590)		Older People Cluster (N=664)		Larger HH Cluster (N=98)		Younger People Cluster (N=635)		Young Family Cluster (N=193)	
	Has no knowledge of on demand ride sharing	On demand ride sharing user	Has no knowledge of on demand ride sharing	On demand ride sharing user	Has no knowledge of on demand ride sharing	On demand ride sharing user	Has no knowledge of on demand ride sharing	On demand ride sharing user	Has no knowledge of on demand ride sharing	On demand ride sharing user
Intercept	↓						↓			
Age		↓		↓				↓		
Education	↓	↑						↑		
Income (base $10,000)		↑		↑				↑		↑
Pro-environment / Environment Loving		↑						↑		
Pro technology / Tech Loving		↑		↑			↓			
Commute loving / Productive commute		↑		↑			↑		↓	
Hopelessness on the environment	↑					↑	↑			
Residential Attitudes - Wants high density neighborhood	↓	↑		↑		↑	↓	↑		
Residential Attitudes - Wants kid friendly neighborhood		↓						↓		
Lives in a suburban neighborhood		↓		↓				↓		

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Conclusions

- Cluster analysis is good for zeroing in on specific groups.
    - Segmented models:
        - As age increases, individuals are less likely to use on demand ride sharing services. This relationship holds for both the older and younger people clusters.
            - Younger people are more technology savvy and more willing to try these services

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Residential Attitudes - Wants kid friendly neighborhood		↓						↓		
Lives in a suburban neighborhood		↓		↓				↓		

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Conclusions

- Cluster analysis is good for zeroing in on specific groups.
    - Segmented models:
        - Wanting to live in a high density neighborhood is positively correlated with on-demand ride sharing usage for all groups except young families

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Models: Segmented and pooled (traditional) model

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Education	↓	↑						↑		
Income (base $10,000)		↑		↑				↑		↑
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Lives in a suburban neighborhood		↓		↓				↓		

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Conclusions

- Cluster analysis is good for zeroing in on specific groups.
  - Segmented models:
    - Young people who felt more hopeless on the environment were more likely to be on demand ride sharing users and less likely to be unaware of these services. It may not be about the environment.
      - Could be strictly coincidental or it could be that subconsciously these individuals value the utility of vehicle and see a disutility in other modes.

  - The Young People Cluster is more heterogenic with similar significant attitudinal variables as the pooled model unlike the other clusters – this could be due to stronger feelings towards certain statements as compared to those in the other groups.

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Residential Attitudes - Wants high density neighborhood	↓	↑		↑		↑	↓	↑		
Residential Attitudes - Wants kid friendly neighborhood		↓						↓		
Lives in a suburban neighborhood		↓		↓				↓		

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Takeaways

- **We think about four groups:**
  - **The people who do not know (smallish group)**
    - **They do not know and they may not care**
  - **The people who know about these services but can't use them**
    - **Why not? Family, residential location, income**
  - **The people who know about these services AND can use them but do not**
    - **We need to understand their residential attitudes, life style (e.g. outdoorsy, couch potato, etc.), and their needs**
  - **The people who use these services**
    - **They're younger, more tech savvy, care about the environment**

So while life stage may matter, it doesn't change this story dramatically – life style and attitudinal factors also matter (along with age, income, education etc.)

Many thanks!

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