



The Focus

Human Reaction

Human Behavior

- Psychology
 - Sociology
 - Economics
- to predict how HUMANS will act or react

Using Mathematic modeling methods
To answer transportation engineering quandaries

Transportation Applications

Autonomous vehicles		Ride Sharing	
Workplace Locations		Online Shopping	
Carpooling		Food Preferences	
Bike Sharing		Electric Scooters	

Workplace Locations

In a post-COVID future, where will we work?

Monday	Tuesday	Wednesday	Thursday	Friday
Office	Home	Office	Third Workplace	Third Workplace

Who **What**

Workplace Geographic Attributes
Commute time, Commute price, Commute distance, Population density

Workplace Environmental Attributes
Distraction level, COVID risk, Crowding level, Flexible work hours

Influence the Workplace location (WPL) decision

Who is a remote worker?
Women w/ a baby, Women, Young, High income, White-collar worker

Who is a commuter?
Men, Live-in partner, Older, Home owner, Rural dweller

What about a digital nomad?
Single, Part time, Low income, Young

Predictions (number of days across a month)

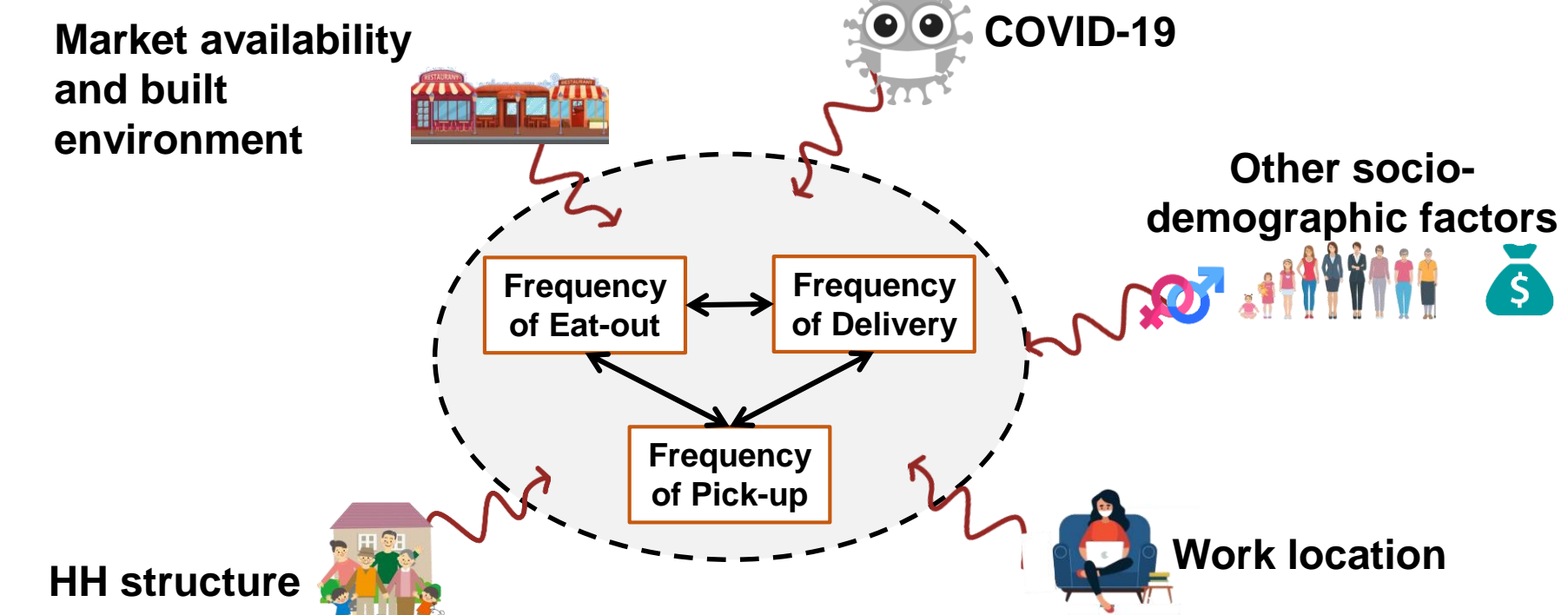
Home	9.8 days	11.6 days	19.9 days
In-person	11.5 days	8.8 days	1.9 days
Third WPL	0.7 days	1.6 days	0.2 days

Hybridization preferences are more influenced by...
Environment > Geographic

Food Preferences

Four
food channel
alternatives

EAT OUT	DELIVERY
TAKEOUT	COOK



Who eats out the most?
White, 3+ vehicles, No children, Full-time workers, High restaurant density area

Who consumes takeout the most?
Young, High income, Work from home, Urban area

Who consumes delivery the most?
White, <3 vehicles, Children, Urban area, Worried about COVID

Our Approach



1. Design and deploy surveys
 - Sociodemographic data
 - Current habits/behavior
 - Hypothetical future behavior
2. Descriptive analysis of the collected responses
3. Design Latent Constructs
4. Statistic, Mathematic, and Econometric models
5. Human Behavior-based analysis and implications!

Latent Constructs

Define groups in the population by their attitudes and preferences

Safety Concern	Being Chill	Mobility Control
Green Lifestyle Propensity	Technology Savviness	Driving Control

