

AN EVALUATION OF THE LONG-TERM EFFECTS OF THE COVID-19 PANDEMIC ON PUBLIC TRANSIT USE

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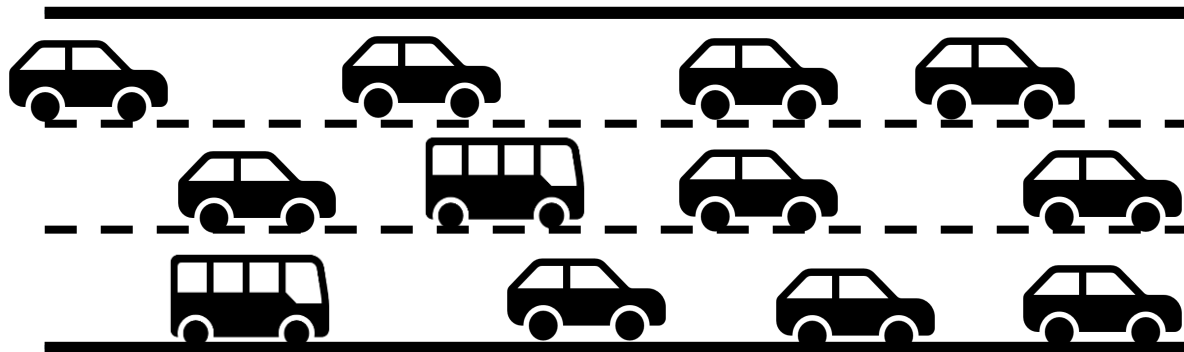
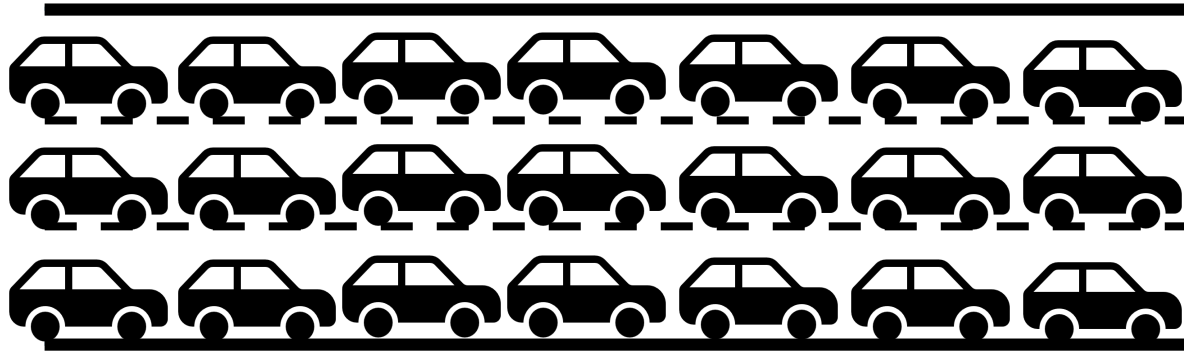


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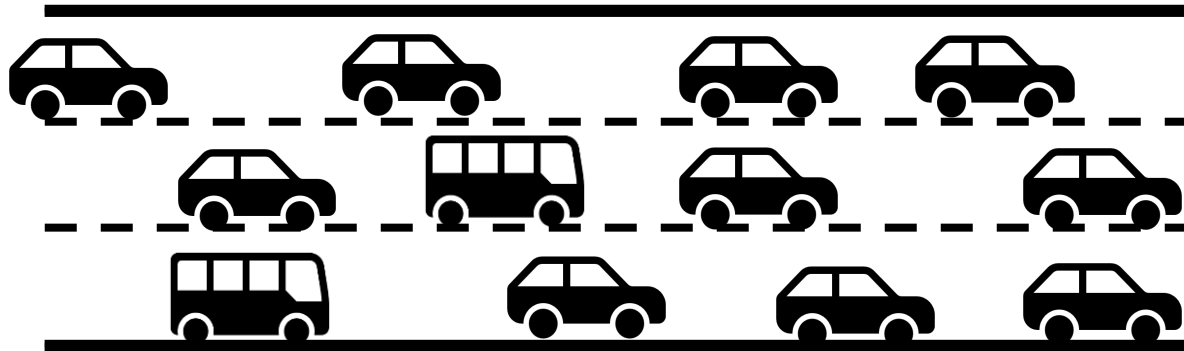
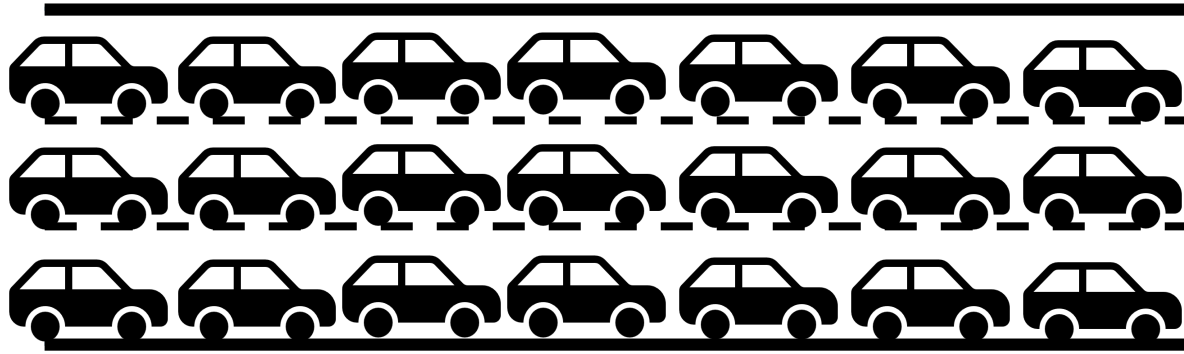
Benefits of Public Transportation



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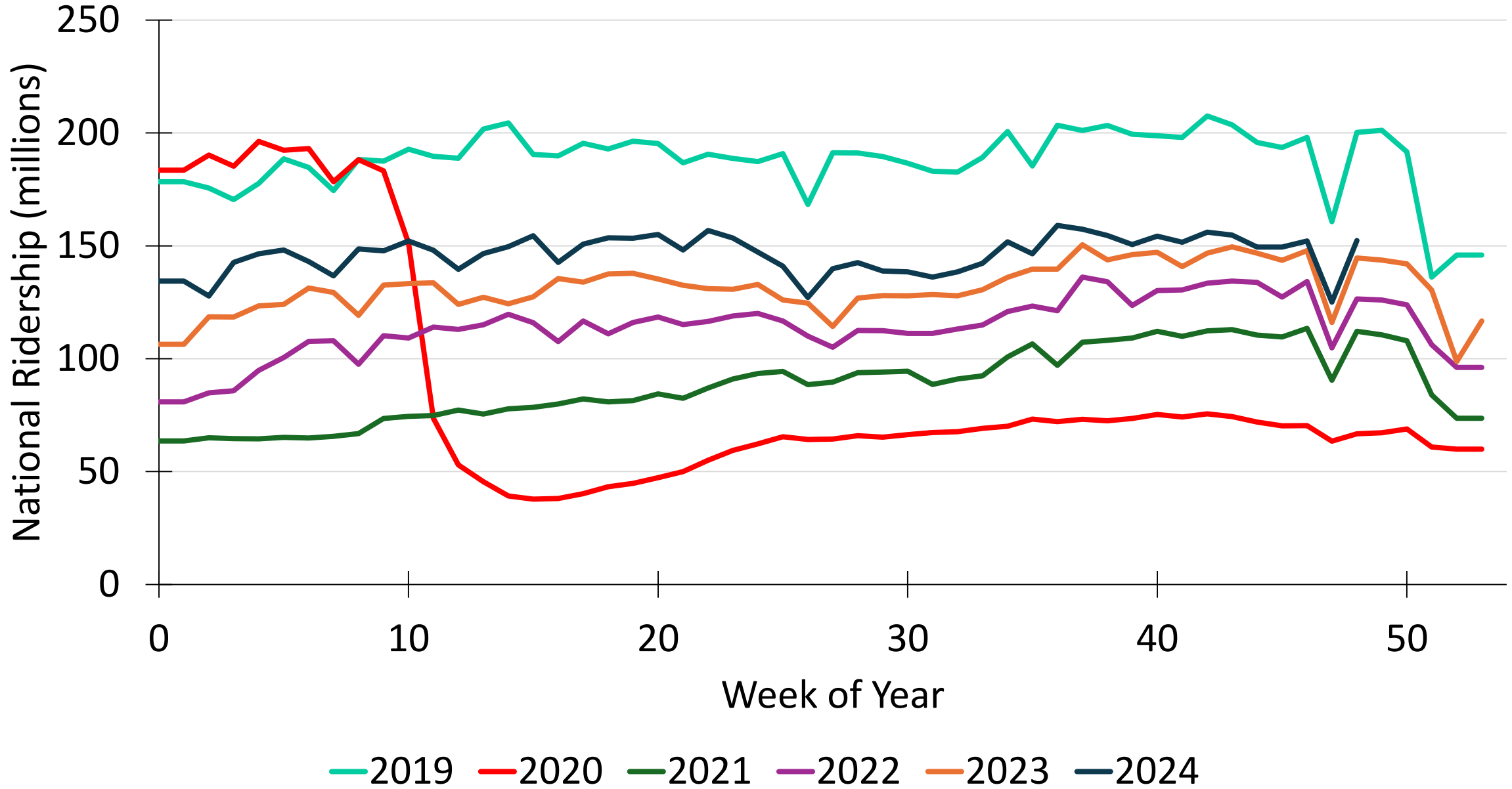


Benefits of Public Transportation



Impacts of the Pandemic





Literature

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The decline in PT ridership has coincided with an increasingly positive attitude toward private vehicle use
3. Those focused on future PT use have employed stated intentions/perceptions

Future public transportation use intentions are impacted by perceived knowledge and risk of the pandemic, as well as pre-pandemic public transit travel habits

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→ **We go beyond a point-in-time view of PT use or single future use intention to investigate, at an individual level, both reported PT use change through the pandemic and the expected permanence of this change**

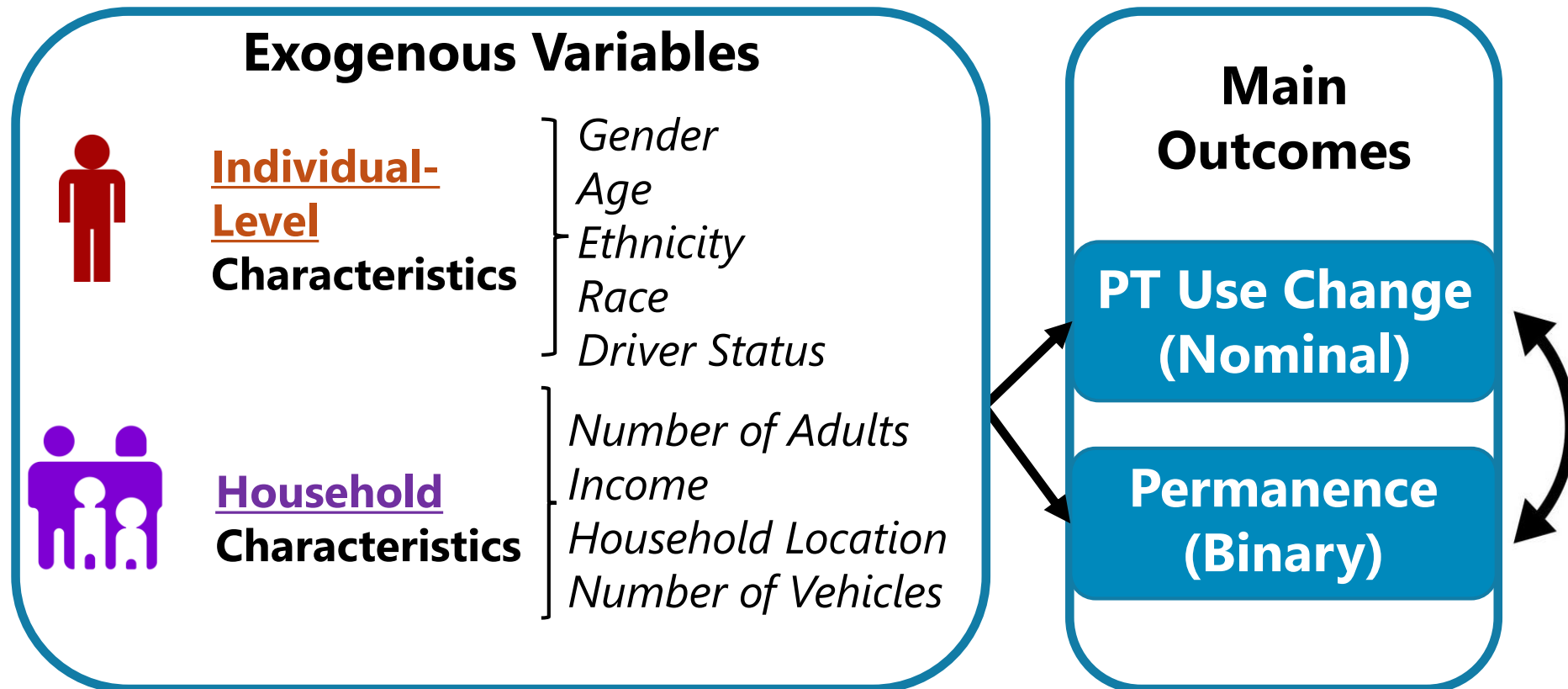
Who reduced their use of public transportation during the pandemic?

Who reduced their use of public transportation after the pandemic?

Which of these individuals might be willing to return?

Model Framework

Joint Multinomial Probit and Binary Probit Model



Sample Overview

- 2022 NextGen National Household Travel Survey
- January 2022 through January 2023
- United States National Sample
- Final sample includes 7,076 adult (18 years of age or older) respondents



Contents

- Household characteristics
- Individual socioeconomic information
- Mode use and commute data
- One-day travel diary
- **Impacts of the COVID-19 pandemic**
- Online work and shopping behaviors
- Transportation equity

Public Transit Use Change

	Total (%)
Use public transit more often than before COVID	4.63%
Use public transit the same as before COVID	53.17%
Use public transit less often than before COVID	42.20%

Public Transit Use and Expected Permanence

	Total (%)	Temporary	Permanent
Use public transit more often than before COVID	4.63%	26.52%	73.48%
Use public transit the same as before COVID	53.17%	--	--
Use public transit less often than before COVID	42.20%	37.54%	62.46%

Gender



Women have reduced their public transit use more than men

Implications:

- Improve personal safety: Bystander intervention training, coach PT staff on how to address harassment “on the spot”; convenient reporting, increased policing
- Install better lighting around stops
- Prevent overcrowding

Age

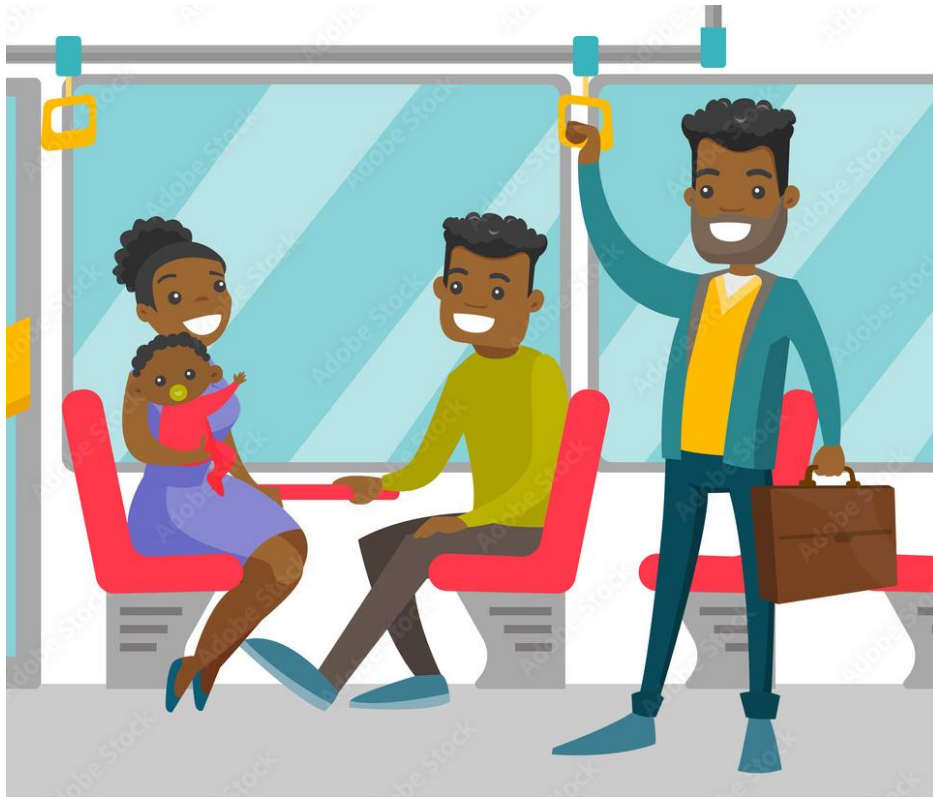


Older adults have reduced their public transit use more than younger adults

Implications:

- Provide better information about contagion risks
- Assist older adults and ease the process of boarding/alighting
- Important for physical and cognitive health

Race and Ethnicity

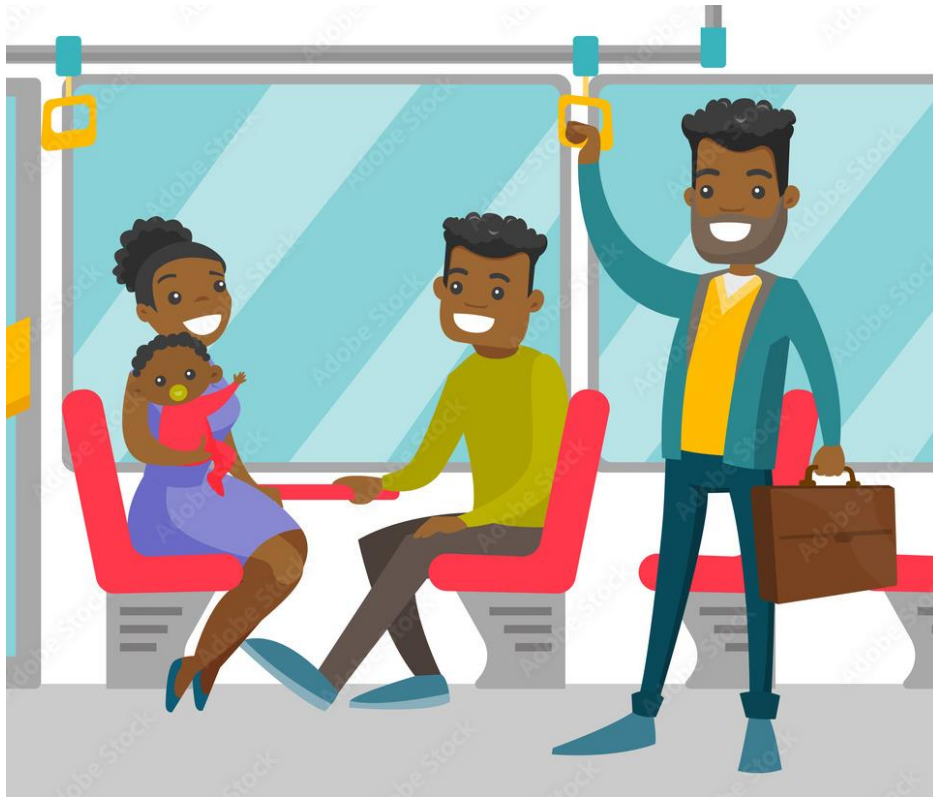


Racial/Ethnic minorities have changed their usage patterns more (in both directions); more nuanced effects than for women and older adults

Implications:

- Need to address systemic inequities exacerbated by the pandemic
- Consider safety concerns of these groups and alienation caused by policing

Race and Ethnicity



Black individuals state that their usage changes are only temporary

Implications:

- This is a reassuring result given the large pre-COVID share of minority riders
- Pandemic-era changes present an opportunity to include these communities in the planning and recovery process

Vehicle Constrained Households



Households with fewer vehicles than drivers made permanent changes, often increasing their usage

Implications:

- Greater lifestyle changes were needed to accommodate pandemic-era mobility constraints
- Encouraging employer flexibility could benefit transit
- Awareness campaigns should highlight sustainability

Income



Individuals from low-income HHs (<75K per year) increased usage, and were more willing to return to PT if they had stopped riding;
Individuals from high-income households (> 150K) decreased usage and indicated more permanence in this decision

Implications:

- Dynamic pricing, free rides, and reduced fares in low-income neighborhoods would promote equity
- Low-income populations are key subgroups for transit recovery efforts

Implications and Recommendations

Address the ways that safety is conceptualized by minority racial groups

- Address structural racism elements embedded in PT route, schedule, comfort, fare, and policing considerations
- Co-design PT offerings collaboratively with communities and end-users

- Ensure that PT Leadership teams represent the diversity of riders and society at large



“White riders are likely to see a police officer on a train as a comforting presence, while many Black riders justifiably will perceive them as a potential threat” (Spieler 2020)

Implications and Recommendations

Address the needs of Mobility-Constrained Riders

- Recognize that PT service cutbacks during the pandemic may have required much larger lifestyle changes for those with mobility constraints
- Provide more travel schedule flexibility for those with shifted work hours

- Identify and address the needs of low-income, non-activist, and other vulnerable populations



Implications and Recommendations

Ensure personal safety for all PT users

- Providing bystander intervention training, raise awareness about street harassment, and designing convenient harassment reporting and response systems
- Improve the convenience of the boarding/deboarding process and train drivers on ways to physically assist elderly individuals
- More broadly address access/egress safety by providing lighting around pedestrian infrastructure



Conclusions

The pandemic significantly impacted transit ridership. Some individuals now have:

- Decreased their use of public transit
- Increased their use of public transit
- Not changed their use of public transit

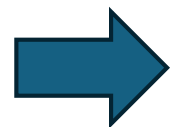
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Understanding these trends will help transit agencies and policymakers adapt to changing conditions and the needs of their evolving rider base

Thank You!

