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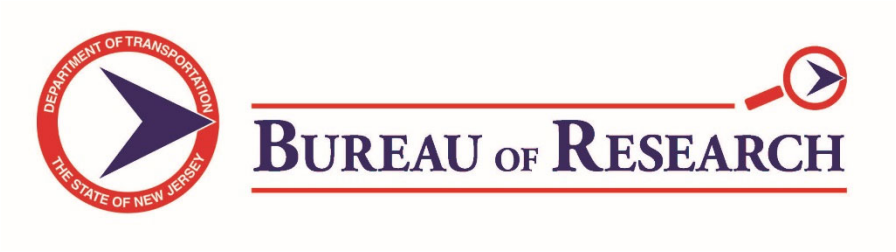

Transit Usage Impacts of NJ Transit-Oriented Developments (TODS) FINAL REPORT

December 2024

Submitted by

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16. Abstract

This report examines the relationships between the characteristics of transit-oriented development (TOD) and (1) the use of transit and non-motorized modes (walking, cycling, scooting) and (2) local shopping behaviors and behavioral changes during and after the COVID-19 pandemic. The team gathered data from 341 respondents via an online survey and through four focus groups with residents from six transit-served areas in New Jersey. Focus groups revealed that TOD residents appreciate transit accessibility for commuting and socializing but face challenges with reliability and security, and some reduced their transit use during COVID-19 due to remote work while appreciating transit access for occasional commuting. Proximity to transit within each study area is weakly associated with usage, but relocations to transit hub areas led to gains in transit use, walking, and local shopping. While high-income TOD residents favored cars, parking constraints encouraged transit use, and TOD residents reported more walking and cycling.

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List of Abbreviations and Symbols

ACS	American Community Survey
BRT	Bus Rapid Transit
IRB	Institutional Review Board
LGBTQ	Lesbian, Gay, Bisexual, Transgender, Queer
LRT	Light Rail Transit
NJT	New Jersey Transit
QOL	Quality of Life
TOD	Transit-Oriented Development
VMT	Vehicle Miles Traveled

EXECUTIVE SUMMARY

Background

This report, commissioned by the New Jersey Department of Transportation (NJDOT) and conducted in collaboration with NJ TRANSIT, explores the impact of Transit-Oriented Developments (TODs) on transit usage and related behaviors among New Jersey residents. Transit-Oriented Development refers to dense, mixed-use developments located near public transportation hubs, such as train stations, bus terminals, and light rail stops. These developments are designed to encourage transit use, reduce reliance on personal vehicles, and foster walkable, sustainable communities.

New Jersey has promoted TODs since 1999 through programs like the Transit Village Initiative and the Transit Friendly Planning Program, aiming to create vibrant, pedestrian-friendly neighborhoods that support public transit usage. However, while TODs are widely believed to increase transit ridership and enhance community quality of life, data specifically related to New Jersey's TOD impact has been limited. This research seeks to understand how TODs affect residents' transit usage patterns and broader travel behaviors, considering variables such as transit accessibility, the COVID-19 pandemic's impacts, and the demand for parking.

Objectives

The study aimed to examine the relationship between TOD characteristics (e.g., location, density, unit types) and residents' transit use as well as use of non-motorized modes (walking, cycling, using a scooter, etc.). The research also examined TOD's relationship with local shopping behavior and changes in behavior during and after the COVID-19 pandemic.

Research Approach and Methodology

The research employed a mixed-methods approach, combining quantitative survey data and qualitative focus group insights to provide a comprehensive understanding of TOD impacts on mode choice, local shopping behavior, and other outcomes of interest. The methodologies employed were:

- **Literature Review**: The literature review examined existing studies on effectiveness of TODs in increasing transit ridership, reducing vehicle miles traveled (VMT), and fostering mixed-use environments. Research shows TODs are generally effective in reducing vehicle miles traveled (VMT) and increasing transit use and active transportation, though outcomes are highly context dependent. Key factors that influence TOD success include transit service quality, walkability, density, parking restrictions, and access to a mix of land uses. Studies indicate that higher-density TODs with limited parking availability can significantly reduce car ownership and usage while boosting transit ridership. Regional connectivity, such as easy access to employment centers, also plays a role in attracting transit users.

- **Data Collection**:
    - **Survey**: An online survey targeted New Jersey residents in TODs or within proximity to transit hubs, with 341 responses collected. Questions covered demographics, residential relocations and their motivation, use of various modes for different trip purposes before and after the move, and parking availability.
    - **Focus Groups**: Conducted across six New Jersey transit hubs, focus groups provided qualitative insights into residents' personal experiences with transit and TOD living, with discussions revealing motivations for transit use, perceived benefits, and challenges of residing in TODs.

Analysis and Results

Qualitative Findings

Focus group discussions underscored the diversity of motivations and challenges associated with TOD living. Key insights included:

- **Transit Accessibility**: TOD residents valued the convenience of transit access for commuting and socializing, with many opting for TOD locations to reduce time spent in traffic, commute times, and dependence on cars.
- **Community and Lifestyle**: Participants noted that TODs promoted a sense of community and accessibility to amenities. Participants also highlighted frustrations with transit reliability and security concerns.
- **Shopping and Conducting Personal Business:** Participants often drive or use delivery services for groceries, citing challenges with transit for heavy loads. Participants favor walking to local businesses when convenient. Dining and shopping choices hinge on walkability, security, and convenience, with some concerns about new developments impacting small businesses.
- **Pandemic Shifts**: COVID-19 reshaped transit use, with some participants citing increased remote work options that reduced their need for daily transit but reinforced the appeal of TODs for occasional commuting.

Quantitative Findings

Key insights included:

- **Location**: Proximity to transit within the study areas is weakly correlated with increased transit usage, though when examining residential relocations, the analysis suggests that moving from a less dense location to a transit hub location (our study areas) results in gains in transit use, walking, and local shopping with associated social benefits.
- **Income**: Respondents earning over $150,000 were less likely than those earning less to use transit frequently, preferring cars, which aligns with findings that high-income TOD residents may have greater flexibility in choosing travel modes.
- **Parking and Car Ownership**: TOD residents generally had fewer vehicles per

household, especially in areas with limited or paid parking options, which further encouraged transit usage. However, only a small percentage of TOD residents were completely car-free. This indicates that transit accessibility afforded by TOD residential choice does not, for most, fully eliminate a desire or need for car ownership. Parking ease and cost are primary drivers of the use of transit and non-motorized modes.

- **Non-Motorized Modes**: Walking and cycling rates were notably higher among those living in TOD buildings or within a half-mile of the primary transit node, compared to those farther from transit hubs, particularly for errands and recreational activities.
- **Relocation Motives**: While many residents chose TODs for their access to transit, other factors such as affordability, housing quality, and neighborhood amenities also played a role, especially post-pandemic, when flexibility in work location became crucial.

Conclusions and Recommendations

Conclusions

The research confirms that TODs have a measurable impact on transit usage, vehicle ownership, and non-motorized travel behaviors, although higher-income TOD residents often maintain car ownership and use. The COVID-19 pandemic has added complexity to these trends, as remote work reduces transit use but sustains TOD attractiveness for those seeking walkable, amenity-rich neighborhoods.

Recommendations

Based on findings, the study proposes:

1. **Enhanced Transit Services**: NJDOT and NJ TRANSIT should invest in enhanced reliable, frequent transit services, especially around TODs, to support the diverse needs of residents and encourage further reduction in car usage. Focus group participants highlighted the need for more service that is frequent and provides connections to local destinations (rather than long-distance connections), which may be served best by regular line-haul buses or smaller vehicles.
2. **Parking Policy Adjustments**: Developers should consider reducing parking availability in TODs to lower construction costs, further discourage car reliance, and enhance transit appeal. Residential developments should unbundle parking costs from rent costs, charging for parking on a per-space basis. Local zoning code changes may be needed to support this change. This would allow non-drivers to save while incentivizing lower levels of car ownership for others, which the models suggest would greatly increase transit use and the use of non-motorized modes.
3. **Mixed-Income Housing Options**: Public policy should be developed to encourage more affordable housing options in TODs, ensuring broader access to TOD and their benefits that include reduced need for an automobile and

increased opportunity to use active transportation and public transit modes.

4. **Community Engagement**: Increase outreach from public agencies (NJ TRANSIT, NJ Department of Transportation, local community boards, and the like) to understand specific resident needs in TOD areas, especially regarding security and transit service improvements, ensuring TOD policies are resident-centric and address emerging challenges.

By emphasizing the strengths of TODs and addressing the identified challenges, NJDOT can leverage TOD policies to foster more sustainable, equitable, and transit-oriented communities across New Jersey.

INTRODUCTION

This research aims to better understand the relationships between (a) Transit-Oriented Development (TOD)—concentrated real estate development around transit facilities—and the travel behaviors of those who live within or near those facilities, and (b) TOD characteristics and its appeal to customers of retail establishments within TODs. Additionally, the study examined both of these areas to assess the impacts of the COVID-19 pandemic and to understand transit usage and motivations before, during, and after the pandemic.

TOD clusters dense, mixed-use development around transportation hubs, such as train stations, major bus terminals, or light rail stops, to promote public transit use and pedestrian access. By making transit and active transportation more attractive, dividends of TOD development include the avoidance of excess local automobile traffic congestion and air pollution for the community, and the option of owning fewer costly automobiles by households. By focusing growth around these hubs, municipalities can leverage public investment, boost local economic activity, and create safer, more sustainable communities. NJ TRANSIT sought to better understand TOD residents' transit usage and motivations over time, examining trip patterns pre-COVID and over the next five years. This research surveyed TOD residents and potential TOD retail customers to assess how TOD characteristics influenced transit ridership, the use of non-motorized modes, and local shopping behavior. The research also examined whether these behaviors were influenced by the COVID-19 pandemic.

Building on a review of existing survey methods to categorize TOD types, the research team developed a comprehensive survey in collaboration with NJ TRANSIT Planning Department’s Transit Friendly Planning Program and Market Research teams. This survey captured TOD residents' and retail customers' shifts in trip patterns, transit access, parking needs, post-pandemic travel expectations, remote work capabilities, primary trip purposes, and demographics. Additionally, TOD characteristics were classified and analyzed in relation to transit ridership and parking demand. The findings revealed relationships between socio-economic characteristics, residential location within study areas (proximity to the primary transit node), the cost and convenience of each mode, and mode choice.

LITERATURE AND METHODOLOGY

Review of Current Literature

Motivation

TOD defines a land-use model that leverages accessibility and mobility advantages from proximity to transit stations to spur sustainable development and resiliency. Through guidelines aimed at concentrating mixed-use development near transit stations, TOD policies seek to lower driving rates, increase alternative transportation mode share, and spur sustainable development growth. In 1999, New Jersey established a program to promote TOD throughout the state via its multi-agency Transit Village Initiative, which provides incentives and guidance for municipalities to implement local policies and "create attractive, vibrant, pedestrian-friendly neighborhoods… without relying on automobiles." (1) Although the program is widely hailed as a success, the effects of TOD on ridership, neighborhood change, local travel on foot and on bicycles are still not fully understood; the results vary considerably from context to context and likely depend on local transportation network conditions, details of the TOD program and actual projects (parking, affordable housing requirements, etc.) The following literature review outlines the history of TOD and current understandings of TOD impacts on travel behavior (including a discussion on self-selection and endogeneity), property value, land-use mix, gentrification/equity outcomes, and quality-of-life metrics.

TOD Definition and History

In general, TOD principles prioritize what researchers have defined as the three Ds of density (of development), design (pedestrian orientation), and diversity (of land uses) (2) in concert with each other to create clusters of origins and destinations that allow and encourage alternative transportation modes like walking, biking, or transit to reduce driving. TODs are not simply meant to create self-contained walkable environments where residents have easy access to transit-connected destinations, but also leverage their proximity to transit to provide access to more distant destinations as well. The transit connectivity is not a one-directional boon to residents of the TOD, as businesses and amenities within the TOD can also attract riders from throughout the transit network.

While the concept of TOD traces back to the 1980s, it has gained significant traction with policymakers, real estate developers, urban planners, and researchers since the turn of the 21st century. Currently, there exists many mature TOD developments throughout the world, with many more in the planning and implementation stage. This abundance and diversity of TOD implementations provide fertile ground for research into their efficacy, and a recent literature review highlight hundreds of existing peer-reviewed studies, (3) complemented by a comparable number of non-peer reviewed practitioner reports. Because evaluations of and research into TODs can focus on a wide variety of outcomes, we find that TOD cannot be easily evaluated as a concept universally; context matters greatly. (4) For instance, factors that can contribute to the effectiveness of TODs in achieving travel and real estate goals include but are not limited to: the quality of the transit link and its competitiveness with automobile travel;

the quality of automobile travel (monetary and time cost, reliability, traffic congestion, parking availability, etc.); the degree to which land uses mix in a useful way to cover residents' daily needs; the broader regional form; and dozens of other factors. This literature review will explore the various conceptual bases for TOD as well as the current state of knowledge regarding evidence of TOD impacts along a variety of metrics. Furthermore, we will establish this research project's methods of analysis, and the typology lens through which we will explore TODs impact on resident behaviors and attitudes in New Jersey.

Conceptualizing TOD

The concept of TOD grows from convergent theoretical foundations, and each of these emphasizes a particular aspect of what we may broadly define as TOD. One of the primary progenitors of TOD is the Garden City from the early 20th century as defined by Ebenezer Howard. The Garden City sought to combine urban and rural development patterns into a hybrid model that recreated the walkable thriving core of urban centers by amenities and businesses concentrated around a main square with radial boulevards for ease of access to rural residents. While the Garden City movement did not highlight the inclusion of transit, intercity railways and canals were included in concept plans. (*5*) Similarly, the Linear City as proposed by Arturo Soria y Mata in the late 19th century envisioned a string of urban settlements along a public transport corridor that connects two or more larger cities. The Linear city would provide easy access to a central avenue where development would be concentrated, as well as access to the larger urban cores along the transit line, in contrast to contemporary radial or wheel-and-spoke development patterns. (*6*) Together these two historical development philosophies provide the roots for TOD (and conceptually formalize some existing development patterns of the 19th century). As automobiles became more affordable through the 20th century transit ridership dropped and development patterns took on a more dispersed nature, particularly in the United States(*7*) and studies have linked decreased density in land-use patterns to more driving and increased gasoline consumption. (*8*)

The primary source of inspiration for TOD in its modern form stems from New Urbanism, and its emphasis on creating public spaces that are defined by granular, walkable blocks and streets that intermix housing, shopping, and amenities like parks while considering the connectivity between land-use and transportation. (*9*) Early conceptualizations of TOD comes from Calthorpe (*10*) in which the author outlines a vision for development patterns that promote moderately dense mixed land-use developments within walkable spaces in the immediate area surrounding transit stations, so as to create environments that are conducive to alternative transportation modes. Moving away from arterial axes and car-centric development, Calthorpe proposed pockets of traditional street grids that provide numerous alternative routes and smaller land parcels to improve internal connectivity, while improving regional connectivity through transit lines.

A universal definition of TOD is difficult to pin down and in the years since many different conceptualizations of TOD have surfaced. These alternatives will be explored more fully in the typology section of this literature review, but the defining characteristic of TOD today can be broadly summed up as promoting a dense mixed-use development pattern immediately adjacent or around a transit hub that facilitates alternative transportation modes.

Evidence of Impacts

Because TOD aims to address many aspects of contemporary land-use and development, there are numerous ways to define and measure its impacts. The most researched metric is travel behavior, given the centrality of transit to the concept, and the reduction of automobile trips as a goal for TOD. However, even within the framework of travel behavior there exists a variety of ways to conceptualize and measure aspects of travel, the most common is TOD's effect on transit ridership and vehicle miles traveled (VMT). While the relationship between TOD and travel behavior is highly contextual, research shows that TOD is often effective in decreasing driving rates[11] and increasing transit ridership and walking/biking rates, [12–16] although the degree is very much dependent on the characteristics of each development. One primary mechanism through which travel behavior is affected is transit supply and service level, and research shows that intermodal connectivity is critical in increasing transit ridership rates. [17] Robust regional transit connectivity to desirable destinations is also a key aspect of successfully increasing ridership rates[18], particularly to employment centers and commercial development. [19] Parking ease and price are also principal drivers of transit use. [20]

Another major factor in TOD's ability to influence the use of transit and alternative transportation modes is the built environment, which we can further subdivide along several different axes. Considering the level of density near a TOD, some studies argue that density alone is not sufficient in significantly affecting VMT, [21] while other researchers show that increased density and walkability measures are key in reducing VMT. [11, 22–24] Thoughtful design strategies have also been shown to be a key factor in reducing VMT and increasing walking/biking rates. [22, 25] TOD's built environment design principles not only focus on increasing the attractiveness and feasibility of transit and active transportation but also discourage driving and vehicle ownership through dense development and reduced parking availability. Both approaches effectively reduce VMT. [16, 20, 26] Similarly, access to transit can reduce vehicle ownership rates in residential neighborhoods in the periphery of cities, [16, 27] and evidence shows that parking demand may in fact be lower than expected in TOD areas. [28] Finally, TODs can impact travel behavior through the land-use mix employed, as evidence shows that mixed-use development is associated with increased transit ridership due to bi-directional travel patterns. [17]

Beyond affecting travel behavior, TOD is often touted as a development vehicle to increase property value, although the evidence shows the relationship between TOD and land value is complicated. While some research indicates that proximity to transit increases commercial property values, and especially so for TOD developments [29], there is some conflicting evidence for residential properties. There is some evidence suggesting some TOD developments increase property values [30, 31], but those

increases are tempered by the type of transit [32, 33] as well as the level of connectivity provided by the station [34] and the walkability of the immediate area surrounding the station. [35] However, there is some contradictory evidence showing that property values immediately adjacent to a transit station can *decrease* due to congestion, noise, and perceptions of crime, though properties somewhat further way from the strop or station may see significantly increased property value that then attenuates with greater distance. [32] Permissive zoning also plays a role in the impact of TOD and transit station proximity on property values, with evidence showing that TOD areas with less restrictive zoning experienced more robust property value increases compared to areas with more restrictive zoning codes. [36] The price premium for properties near transit is also affected by design synergies, as TOD stations with good pedestrian infrastructure have significantly higher property values than neighborhoods without good pedestrian access to transit. [35] Further complicating the relationship between transit accessibility and property values, one study in New Jersey found that while there is a positive relationship between TOD and property values it could not be established as causal, and the authors note that property value increases may instead be related to the "forethought, commitment, and political will" exhibited by local jurisdictions that were able to organize towards a TOD designation. [37]

In addition to affecting the current value of land TOD policies also aim at driving an uptick in development growth in an area to create densities of origins and destinations, in turn maximizing the utility of the transit station which anchors the development. One study in Denver tracked the implementation of TODs from their inception through the early years and shows significant densification in TOD areas. [38] Other studies show that bus rapid transit stations (BRT) and light rail transit (LRT) can both be effective in driving densification and growth in an area [39, 40], emphasizing that TOD can encompass a variety of different transit facilities in its goals. Researchers in Asia have found similar outcomes with transit stations driving development in Hong Kong [41] and Tokyo [42], highlighting the potential for land-value capture mechanisms to fund the construction of transit stations.

TOD's impact on property values and land-use has also received significant attention in light of gentrification and residential location choices. Regarding gentrification, (the process of neighborhood change that results, over time, in wealthier residents moving in, while lower-income people may or may not move out), one review of 35 studies found limited evidence for transit-induced gentrification [43], instead suggesting that any measured gentrification effects are more likely to be related to local dynamics and built environment features than it is to TOD implementation directly. However, other researchers have discovered that a snapshot look at affordability for low-income households in TOD areas is misleading; over time, these locations have become considerably more expensive, possibly threatening the very affordability that initially attracted residents. [44] Another study found that high-income households desire access to transit because of the connectivity to the central business district potentially pricing out lower income households that are less likely to have a vehicle. [45] More directly, other researchers have explored the gentrification effects of TOD through qualitative research methods. One study interviewed established residents concerning changes to their community after the implementation of a TOD and found that replacement of existing neighborhood storefronts represented a major concern as merchants are priced

out of their locations. [46] Other communities are more proactive in expressing gentrification concerns, as outlined by one researcher's chronicling of Latino barrios in California and the community outreach needed to secure local buy-in for TOD projects. [47]

Potentially counterbalancing pressures from increased property values, some researchers show that price premiums on property near transit stations are often offset by household savings on transportation costs. [44] These savings may be significant in the right context, as one study found that transportation costs of driving to major employment areas in New Jersey and New York far outweigh the cost of riding transit for residents of TODs in New Jersey [48], consequently opening up work opportunity for residents thanks to the increased access to jobs. However, other researchers argue that relationship between housing location and transportation costs is not so straightforward, and transportation cost savings do not directly counterbalance housing premiums experienced by lower income households. First, research shows that transportation habits and expenditures are not simply a function of access, but also household income and characteristics with transportation costs making up a larger relative share of lower income households' budgets. [49] Furthermore, recent analysis of transportation costs in transit-rich neighborhoods shows that factors influencing household transportation habits are complex, and simply providing access to transit is not always sufficient in shifting mode or lowering transportation costs for a household. [50] This is particularly important when considering the impact on households in the lowest income brackets, as transportation cost savings are not enough to offset the higher housing costs associated with access to transit. [51] Ultimately, the data shows that while transportation cost savings may help in defraying the impact of increasing housing costs, not all households will be impacted in the same way, or to the same degree.

The Self-Selection Problem

Another facet of TOD residential location impact that must be considered is the problem of endogeneity, or self-selection bias, affecting measured gains in transit ridership and active transportation mode increases. Endogeneity threatens the validity of research into the impacts of TOD and its associated benefits with regards to transportation mode shift by overestimating the causal relationship between the built environment and transportation habits. Put another way: do TODs cause an increase in transit ridership and active transportation modes in individuals who otherwise would not select those modes, or do they simply allow individuals who would prefer those modes to act on their preferences? This can be difficult to discern for many researchers, as transportation research generally relies on natural experiments (vs. controlled experiments), and methods of approximation require longitudinal data and/or qualitative data on resident's preferences, which is not always available. Furthermore, even in situations where longitudinal or preference data is available there exist various methods of incorporating this data into research, each with their own advantages and drawbacks, that must be considered. [52]

Self-selection bias is a concern for any research project seeking to study the effects of TOD on residential transportation patterns, but a review of 28 studies identified numerous potential methods in teasing out the effects of endogeneity. This meta-

analysis ultimately found that context is critical in identifying any impacts, as effects varied according to different factors like trip purpose, transport mode, demographics, and geographical location within the greater region. (53) Another review of studies accounting for self-selection found that all 38 empirical studies analyzed showed that built environment affected transportation choices (to varying degrees) even when controlling for self-selection. (54) Although data limitations can make controlling for endogeneity difficult, other researchers have tried to quantify the impact of self-selection bias in transportation mode shift with several researchers converging on the estimation that 40 percent of transit ridership increases can be attributed to self-selection. (55–57) Self-selection bias can also impact research on active transportation modes, but even controlling for endogeneity research shows that the built environment can increase walking and biking rates. (58) In New Jersey specifically, one study looked at transportation habits for residents in TOD and found that proximity to TOD did have a strong association with walking trips (59) even when controlling for endogeneity.

TOD and Quality of Life

Finally, beyond their effect on transportation and development patterns, TODs have also been shown to influence quality of life (QOL) metrics for residents more broadly. Although QOL metrics are not universally defined, they generally include aspects of mental and physical health, community engagement, safety and security, built environment features, livability measures, as well as economic opportunity and sustainability. For example, a thorough qualitative research study in New Jersey found significant public health and safety benefits for residents of TODs due to increased levels of active transportation and built environment features to reduce traffic accidents, among other benefits like increased social engagement and community connections near transit stations. (60)

The QOL effects of TOD are varied and complex, as some studies have found that while transit access improves low-income residents' QOL in terms of amenity and job access, they are often outcompeted for housing by high-income individuals (61, 62), even if transportation cost savings offset the higher rent. The built environment features of TOD are also critical in improving residents QOL, and various studies show that the dense, walkable, inviting environments have a positive correlation with increased walking and biking rates, thereby increasing heart health and other health-related metrics. (25, 63, 64) The effects of TOD on livability are not all positive however, as some studies have also found that proximity to transit stations exposes residents to increased sound levels due to density in development (65, 66), which can be stress-inducing. On the other hand, there is some evidence that increased population density lowers per capita VMT and travel emissions in an area, in turn improving the air quality. (67) This relative reduction in per capita VMT would logically be counterbalanced by increases total VMT and energy use more broadly in a region, and a study in Germany on air quality confirms that increasing population density by 1 percent increases NO_2 levels by 0.25 percent. (68) However, not all forms of density are equal, and air quality level effects of increased population density can be mitigated by transit access (69), and TOD built environment design practices. (70)

Methodology

Our research employed multiple methodologies to gather comprehensive insights. The research team designed and conducted an online survey along with four online focus groups, gathering direct feedback from participants to capture a range of perspectives. The qualitative data from the focus groups complements the analysis of survey data. Using this data, the research team examined the propensity for transit or non-motorized travel among four groups: (a) individuals who moved into a designated TOD project within 0.25 miles of the primary transit node; (b) those who moved to within 0.25 miles of the primary transit node but not within a designated TOD project; (c) those who moved to between 0.25 and 0.50 miles of the same transit facility; and (c) those who relocated further out (over 0.5 miles from the transit stop, but within the same ZIP code). The team also used this data to model respondents' frequency of transit and active mode use statistically. The survey also featured a retrospective element asking respondents about their most recent residential relocation (to the study area), and regression models characterize how these relocations to a TOD or TOD-proximate location influence the use of transit, walking, cycling, and the frequency of local shopping behavior.

Selection of Survey Locations by Typology

With the goal of selecting a limited number of sites that would provide a wide degree of variation within the state of New Jersey, the team sought to balance geographic location, transit mode, transit line, urban/suburban, housing types, ethnic mix, and other criteria to support a robust data gathering effort. The research team employed a survey frame targeting four distinct populations living near specified transit facilities:

- Individuals living in TOD housing (where the building managers advertise that the building is somehow related to the primary transit node) within 0.25 miles of the primary transit node
- Their nearest neighbors (living within 0.25 miles of the primary transit node), but who do not live in TOD housing
- Individuals living between 0.25 and 0.50 miles of the primary transit node
- Individuals living within ZIP codes that intersect with the half-mile area around selected transit facilities, but who live further out than 0.50 miles

To determine suitable study areas, the team developed and evaluated a “long list” of potential transit facility areas, a list of approximately 60 locations that could be surveyed including areas near NJ TRANSIT rail and light rail stations, park & ride facilities, and bus terminals as well as New Jersey Transit Village locations not served by the transit agency. To identify a long list of TOD locations served by bus corridors, the team reviewed and added locations identified by the NJ TRANSIT Transit Friendly Planning program.

The team mapped these locations and collected data on numerous variables to identify potential survey locations. The data collected and reviewed are displayed in Table 1.

Table 1 - Site Selection Criteria

Population Variables	Household Income (HHI) Variables	Commuter Behavior Variables	Housing Unit Variables	Housing Unit Age Variables
Population (count)	HHI Less than 50K (percent)	Commuters Drive (percent)	Housing Units (count)	Housing Units Built before 1970 (percent)
Population Density per sq. mile (count)	HHI 50K - 100K (percent)	Commuters Public Transport (percent)	Housing Units Density per sq. mile (count)	Housing Units Built after 1970 (percent)
Minority population (percent)	HHI 100K - 200K (percent)	Commuters Other (percent)	Housing Units Occupied (percent)	Housing Units Moved before 2010 (percent)
Population Less than 18 (percent)	HHI Greater than 200K (percent)	Commuters Work from Home (percent)	Housing Units Vacant (percent)	Housing Units Moved after 2010 (percent)
Population 18–64 (percent)			Housing Units Owner Occupied (percent)	
Population Greater than 64 (percent)			Housing Units Renter Occupied (percent)	

To assure sufficient use of transit modes at candidate locations, the team also reviewed NJ TRANSIT ridership data—rail and light rail boarding and estimated ridership at bus locations.

The review of the data yielded six candidate locations—two per each mode (rail, light rail, and bus). A third light rail location was also specified as backup. The selected locations are listed in Table 2 (below).

Table 2 - Candidate Survey Locations

Municipality	County	Transit Facility	Type
Bound Brook	Somerset	Bound Brook Station	Rail Station
Burlington City	Burlington	Burlington Town Centre	Light Rail Stop
Hackensack	Bergen	Hackensack Bus Terminal	Bus Terminal
Pleasantville	Atlantic	Pleasantville Bus Station	Bus Station
Rahway	Union	Rahway Station	Rail Station
Union City	Hudson	Bergenline Ave	Light Rail Stop

Note: The light rail station at Bordentown in Burlington County was an alternate location.

The team took an additional step to verify the suitability of the survey locations. To ensure the survey would reach a sufficient population living in TOD housing, the team identified multifamily properties built in close proximity (within 0.25 miles) to the transit facility at each site. The team reviewed a range of online resources, including apartment rental ads, sales listings, recent development news articles, and property websites, while also applying professional knowledge of local real estate development. Additionally, the team used Google Street View to verify information about the identified properties and locate smaller infill projects that might not appear through other methods. In all cases, the team sought to confirm whether property management considered the site transit-oriented—specifically if they featured nearby transit services in advertisements or listed these as amenities. Although property developers and managers often highlight “easy commuting” or “access to transit” as selling points, the research team focused on language indicating neighborhood walkability, a convenient walk to the transit facility, and access to amenities like shopping or downtown activities.

In sum, the team identified 45 properties that met the criteria, accounting for a total of 3641 housing units located within TOD projects (see Table 3).

Table 3 - TOD Properties Identified

Municipality	Transit Facility	Number of TOD Properties Identified	Number of Housing Units Identified
Bound Brook	Bound Brook Station	5	428
Burlington City	Burlington Town Centre	1	184
Hackensack	Hackensack Bus Terminal	11	2359
Pleasantville	Pleasantville Bus Station	1	135
Rahway	Rahway Station	15	1473*
Union City	Bergenline Ave**	12	535
Total		45	3641

* Number of units in the Skyview at Carriage City Plaza properties is uncertain. The mixed-use project includes hotel, rental apartments, and for-sale condo units.
**TOD properties near the Bergenline HBLR Station are located in North Bergen, Weehawken, and West New York in addition to Union City.

Online Survey

The research team implemented an online survey after applying for and receiving approval from the Rutgers Institutional Review Board (IRB). Respondents for the online survey were recruited via postcard using mailing addresses purchased from Melissa Direct, a mailing list service provider. The postcard informed recipients of the survey and provided the survey link. See Appendix 1 for consent language and questionnaire.

Sampling plan

Mailing lists were acquired and cleaned upon confirmation of survey locations by the research client and included addresses for the six survey locations and those for the four survey sub-frames at each location (in TOD housing, in close-in TOD area (<0.25 miles of the primary transit node), in further-out TOD area (between 0.25 and 0.50 miles of the primary transit node), and further out yet, but still in the same ZIP codes). As the number of addresses included in TOD housing was limited, and the team wished to oversample TOD housing locations, mailings included all those available. For the other two sub-frames, addresses were sampled among those available.

The first mailing took place in November of 2023 and was followed up with in-person recruitment at several nearby public locations (supermarkets, train stations, public libraries, parks, farmer markets, etc.). From this first data collection phase, the team received 146 responses, though not all respondents provided information for all questions. To achieve a more robust sample size, the team redesigned postcards and sent a second wave of postcards to potential respondents (including many new addresses) in February 2024. From this second wave of postcards, the team received 195 responses, for a total of 341 responses. See Figure 1 and Figure 2 below for examples of the survey recruitment postcard used in the first and second survey recruitment efforts.

Figure 1. Round 1 Postcard – Bound Brook

Figure 2. Round 2 Postcard – Pleasantville

Focus Groups

The research team conducted a series of focus group interviews to collect qualitative data on personal experiences of those living in or near transit friendly locations in New Jersey. A total of four focus groups were conducted between April 17 and May 9, 2024. Each session, held virtually using the Zoom platform, was facilitated by the project's principal investigator or co-principal investigator with assistance of a team member, using an IRB-approved focus group guide (see Appendix 2). A third team member provided support by taking notes and preparing session summaries. With participant consent, all sessions were recorded to aid in notetaking. Transcripts generated through Otter.ai, were manually corrected, and used to supplement the notes and provide direct quotes. Candidates for the focus groups were selected from a list compiled of those who indicated their interest in responses to the online survey as well as a list of past survey respondents shared by NJ TRANSIT.

As there was a delay between the initial implementation of the survey and implementation of the focus groups, coupled with a desire to supplement potential participants, the research team designed and implemented two short surveys to confirm and/or identify interested parties, each optimized for the particular population, those

participants responding to the initial postcard invitation versus those provided by NJ TRANSIT (see Appendix 3 for the online recruitment survey optimized for those focus group participants provided by NJ TRANSIT).

Potential participants were chosen to represent all six of the station area study locations (Bergenline Avenue Station in Union City, Bound Brook, Burlington City, Hackensack, Rahway, and Pleasantville Bus Terminal) and to be broadly representative across multiple demographic categories: age, gender, race, ethnicity, education, employment status, length of housing tenure, and household income.

SURVEY DATA COLLECTION & DESCRIPTIVE STATISTICS

Introduction

As part of this research, VTC conducted an online survey of residents living near six transit hubs in New Jersey. This section of the report summarizes initial descriptive findings from the resulting dataset.

The VTC team mailed postcards inviting participation from residents living near six transit hubs: Bergenline Avenue and Burlington City light rail stations, Bound Brook and Rahway rail stations, and Pleasantville and Hackensack bus hubs. The first mailing took place in November of 2023 and was followed up with in-person recruitment at several nearby public locations (supermarkets, train stations, public libraries, parks, farmer markets, etc.) From this first data collection phase, the team received 146 responses, though not all respondents provided information for all questions. To achieve a more robust sample size, the team redesigned postcards and sent a second wave of postcards to potential respondents (including many new addresses) in February 2024. From this second wave of postcards, the team received 195 responses, for a total of 341 responses. In the following summary, the sample size for each question varies considerably, as many respondents did not answer all questions. For most questions, the sample size is approximately 240 valid responses.

While the team's original research proposal foresaw separate analyses for each surveyed area, the sample size for each of the areas is too small (except Rahway rail station and Hackensack bus terminal, with 62 and 53 responses, respectively). Thus, the descriptive analysis that follows in this memo provides overall statistics for the entire sample rather than area-by-area comparisons.

The survey was conducted using the online survey platform Qualtrics. The survey contained seventy-two questions, though due to branching logic, no respondents saw all questions (e.g. renters did not answer questions related to homeownership). The median duration for filling out the survey was just under ten minutes (599 seconds).

The following sections explore key questions related to the research project using descriptive statistics.

Basic Demographics

First, sixty percent of the respondents were female, while only 38 percent were male; two percent were non-binary or refused to answer. The mean age was 40 years. Eighty-five percent of respondents identified as straight or heterosexual, while 14 percent identified as LGBTQ and 1 percent as "other." Whites comprised a slim majority of respondents (56%), followed by Blacks/African-Americans (20%) and Asians/Asian-Americans (13%). Over three-quarters (76%) of respondents reported they were not Hispanic or Latino, and of those who reported they were Hispanic/Latino, no one subgroup dominated. A plurality of respondents (37%) had a bachelor's degree as their highest educational attainment, while 24 percent had less than a bachelor's degree and 38 percent had a master's, professional, or doctorate. Income was reported in bins, and the median household income of the sample fell into the $75,000 to $99,999 per year bin.

Compared to the state of New Jersey, our respondents are considerably more likely to have achieved a four-year college degree or more (75% versus 44%; 2022 American Community Survey (ACS)). However, they have incomes that are either equal to or perhaps somewhat lower than the statewide median ($96,346, 2022 ACS). The racial and ethnic distribution of respondents approximates that of the state as a whole, with only a meaningful overrepresentation of Black respondents (20% versus 13% statewide; 2022 ACS). The age of survey respondents closely matched that of the state's population, with an average age of 40 in both groups. Women are overrepresented in the sample (60% versus 51% statewide, 2022 ACS).

Household Structure, Housing, and Employment

The mean household in the survey sample had 1.9 adults and 0.3 children. The medians were two and zero, respectively. They lived in houses with 2.2 bedrooms and 1.5 baths on average, with median values of two and one, respectively. Nearly two-thirds (65%) of respondents rented their housing, 31% owned their housing unit, and 4 percent lived with someone else and were not responsible for housing payments. A majority (65%) lived in apartments or condos in multi-unit buildings, 25 percent lived in detached single-unit houses, and the remainder (11%) lived in row houses, duplexes, or other housing types. A large majority (68%) of respondents worked full-time for pay, while 9 percent worked part-time. The remainder (26%) did not work for pay (retired, student, unemployed, homemaker, etc.)

Residential Relocation

A core aspect of the survey asks respondents to describe their most recent residential relocation. The median respondent had moved just three or four years ago (they moved in 2020), and the average was just under 10 years since the most recent move (9.5 years). The survey asked respondents to identify all reasons they could identify for having made that residential location. The most common response to this was "moved out to establish a new household" meaning they left their previous household (such as parents or housemates) to either live alone or move in with someone else; "moved out to establish a new household" (23%); "new job or school" (19%); "wanted to upsize" (18%); and "wanted a better house, neighborhood, or school" (16%). Three transportation-related questions were included, and a minority chose each: "wanted a more walkable or bikeable location" (9%); "wanted a shorter commute" (8%); and "wanted better access to public transportation" (5%).

Transportation

On average, households in the survey sample had 1.4 working vehicles available to them (median=1) and 0.5 working bicycles (median=0). Eighteen percent reported having access to a discounted transit pass through work, school, or other means. Over half of the respondents had access to free parking (60%), and forty percent had paid parking (39%) or "other" (1%) parking arrangements. For those who paid for parking, the average annual cost was estimated to be $1,107 (median=$1,200). Respondents were more satisfied with walkability for recreational purposes (88% rated it as adequate or very good), compared to walking for errands and other utilitarian purposes (72% gave it these two high scores). Respondents were generally knowledgeable about nearby

public transportation options (94% said they were familiar with it), and 60% said they felt that public transportation serves them “very well;” only 3 percent stated they did not feel that transit-served them at all. However, a plurality (44%) of respondents reported that they felt they could not meet their daily travel needs using only public transportation; 37 percent reported they could “with some difficulty” and 19 percent reported they could carry out their days easily relying solely on public transportation.

Expected Results

Based on prior research, we expect to see greater use of transit for those who live closer to the transit hub. We expect that this effect may be somewhat attenuated by the nature of developments closest to the hubs, which others have found can attract higher-income residents who may eschew transit in favor of the automobile. We expect that income, parking availability, and household structure will play a large role in transit usage. For non-motorized modes, we expect fewer differences, as the use of these modes is more straightforwardly determined by proximity to desired destinations and a handful of demographic characteristics, such as age and gender, which we do not expect to covary with distance from the transit hub.

Cross-Tabulations

By Location Type

Table 4 shows the distribution of respondents by four location types, as defined in the scope of work. These were: TOD buildings (39%), within a quarter mile of the transit hub but not a TOD building (10%), between a quarter mile and a half mile of the transit hub (18%), and further than a half mile but still within the same ZIP code or codes as the transit-proximate properties (33%). TOD buildings were identified by content analysis of apartment building marketing materials for buildings within 0.25 miles of the transit station; those that marketed themselves as strongly related to the nearby transit hub were considered TOD buildings.

Table 4 - Frequency of Responses by Location Type

Location Type	Freq.	Pct.
TOD Property	97	38.96
Within 0.25mi, not TOD property	26	10.44
Between 0.25 and 0.50mi	45	18.07
Beyond 0.50mi, in same ZIPs	81	32.53
Total	249	100%

As Table 5 shows, while the number of vehicles per household is somewhat higher for locations further from the transit hub, respondents in each of the location types held roughly the same number of vehicles per adult in the household, between 0.78 and 0.83 vehicles per adult.

Table 5 - Mean Number of Vehicles per Household and per Adult in Household by Location Type (N=221)

Location Type	Mean, per household	Mean, per adult
TOD Property	1.3	0.83
Within 0.25mi, not TOD property	1.3	0.79
Between 0.25 and 0.50mi	1.6	0.78
Beyond 0.50mi, in same ZIPs	1.6	0.83

As Table 6 shows, surprisingly, households living in TOD buildings were by far the least likely to have zero cars (only 3.1% of them had no car), while the prevalence of car-free living was roughly equal (12%) in each of the other location types.

Table 6 - Percentage of Households with No Vehicle by Location Type (N=236)

Location Type	%
TOD Property	3.1
Within 0.25mi, not TOD property	12.0
Between 0.25 and 0.50mi	11.9
Beyond 0.50mi, in same ZIPs	12.3

This may be related to the fact that TOD building residents are much more likely to be high earners (earning more than $150,000 per year; see Table 7) than households in other location types. Similarly, they are much less likely to be in low-earning households (earning less than $50,000 per year; see Table 7).

Table 7 - Percentage of Low (<$50k) and High (>=$150k) Earning Households by Location Type (N=219)

Location Type	% Low	% High
TOD Property	8.3	34.4
Within 0.25mi, not TOD property	14.3	9.5
Between 0.25 and 0.50mi	31.6	15.8
Beyond 0.50mi, in same ZIPs	25.0	26.6

Differences related to the use of transit and walking and cycling for each of the four location types are summarized here. As Table 8 shows, those living in TOD buildings and their neighbors within 0.25 miles of the transit hub were considerably more likely to use transit (57% and 58% respectively) compared with their further-out neighbors (31% and 28% respectively). When it comes to the use of active modes such as walking and cycling, those within a half mile of the transit hub all walked at least sometimes at roughly equal rates (69% to 71%), while those living further out were less likely to walk at least sometimes for any purpose (48%).

Table 8 - Percent Using Transit and Non-Motorized Modes at Least Sometimes for Any Purpose by Location Type (N=236)

Location Type	Transit	Active
TOD Property	57%	71%
Within 0.25mi, not TOD property	58%	69%
Between 0.25 and 0.50mi	31%	71%
Beyond 0.50mi, in same ZIPs	28%	48%

These patterns are largely unchanged when broken out by trip purpose, with a few exceptions (Table 9). Those who lived in a TOD building were considerably less likely to use transit for basic shopping trips (groceries, pharmacy, etc.) than were their closest neighbors (15% did, versus 43%). They were also somewhat less likely to walk or cycle for these shopping trips than were their closest neighbors (50% did, versus 61%). Similar differences can be observed for social trips; those in TOD buildings were less likely than their nearest neighbors to use transit (13% versus 30%) or walk, cycle, or use other active modes (13% versus 26%).

Table 9 - Percent Using Transit At Least Sometimes for Purpose by Location Type (N=236)

Location Type	Work	Basic Shop	Recreation	Other Shop	Social
TOD Property	54%	15%	64%	31%	13%
Within 0.25mi, not TOD property	53%	43%	65%	39%	30%
Between 0.25 and 0.50mi	48%	33%	54%	36%	31%
Beyond 0.50mi, in same ZIPs	29%	21%	35%	27%	13%

By Reason for Moving

Travel to work

Table 10 reveals distinct patterns in respondents' use of transit for work based on their reasons for moving to any of the location types. Those who relocated to enhance public transportation access and find more affordable options exhibited the highest frequency of transit usage, with 75 percent and 67 percent using it once or more weekly, respectively. Similarly, individuals who moved to seek a shorter commute also showed substantial transit use, with 63 percent using it once or more weekly. Conversely, respondents who moved for reasons like no longer being able or allowed to live in prior housing, seeking a better house, neighborhood, or school district, as well as those who wanted to upscale and live in areas that are more walkable and bikeable, demonstrated lower transit usage, at 26 percent, 33 percent and 30 percent respectively once or more weekly.

Table 10 - Percent Using Transit for Work by Reason Behind Moving

Reason Behind Moving to New Home	Never	Sometimes	1+/ week
New job/school location	50%	24%	26%
Could no longer afford old home or apartment	0%	33%	67%
Could afford old home or apartment, but wanted something less expensive	20%	20%	60%
Wanted a better house/neighborhood/school district	52%	15%	33%
Wanted a shorter commute time	31%	6%	63%
Wanted better access to public transportation	25%	0%	75%
Wanted more walkable or bikeable neighborhood	67%	0%	33%
Wanted to upsize	59%	11%	30%
Wanted to downsize	29%	29%	43%
Moved out to establish my own household	51%	13%	36%
Moved in with a new roommate or spouse	45%	0%	55%
No longer able or allowed to live in prior housing (divorce, separation, or dispute; house demolition; eviction; no longer qualified for housing or dorm)	58%	16%	26%

Travel for Shopping

Table 11 presents a cross-tabulation of respondents' mode choices for basic shopping by their reasons for moving. For transit use, 88 percent of respondents who moved because they could afford their old home but wanted something less expensive reported never using transit for basic shopping. Similarly, high "never" use percentages (80-84%) were observed among those wanting a more walkable or bikeable neighborhood (80%), those wanting a shorter commute time (84%), those no longer able or allowed to live in prior housing (84%), and those wanting to upsize (82%). Conversely, moving in with a new roommate or spouse has the highest weekly transit use at 16 percent, followed by

those establishing their own household and those wanting a better house, neighborhood, or school district, though overall, weekly transit use for basic shopping remains very low.

Table 11 - Percent Use of Transit or Active Transportation for Basic Shopping by Reason Behind Moving

	Transit			Active		
Reason Behind Moving	Never	Sometimes	1+/ week	Never	Sometimes	1+/ week
New job/school location	68%	23%	9%	45%	21%	34%
Could no longer afford old home or apartment	71%	29%	0%	43%	14%	43%
Could afford old home or apartment, but wanted something less expensive	88%	13%	0%	38%	25%	38%
Wanted a better house/neighborhood/school district	75%	13%	13%	55%	13%	33%
Wanted a shorter commute time	84%	11%	5%	58%	16%	26%
Wanted better access to public transportation	69%	31%	0%	15%	31%	54%
Wanted more walkable or bikeable neighborhood	80%	15%	5%	38%	19%	43%
Wanted to upsize	82%	16%	2%	73%	16%	11%
Wanted to downsize	69%	31%	0%	46%	15%	38%
Moved out to establish my own household	70%	18%	13%	59%	14%	27%
Moved in with a new roommate or spouse	72%	12%	16%	36%	36%	28%
No longer able or allowed to live in prior housing (divorce, separation, or dispute; house demolition; eviction; no longer qualified for housing or dorm)	84%	4%	12%	68%	20%	12%

In terms of active modes (walking or biking), respondents appear more inclined to use these for basic shopping. The reason for moving for better access to public transportation has the highest weekly users at 54 percent. Other reasons with considerable active mode users include being unable to afford the old home, wanting a more walkable or bikeable neighborhood, establishing their own household, and looking for less expensive housing, all with weekly percentages ranging from 38 percent to 43 percent. In contrast, those wanting to upsize reported the highest percentage (73%) of never using active modes for basic shopping.

Generally, we observe higher use of active modes versus transit for “basic” shopping trips. This aligns with our observation that in many of the locations we surveyed, basic shopping needs can be met within a short walk, which likely leads respondents to opt to walk to shops rather than use transit.

Travel for Recreational Purposes

Further results, including those for recreational travel, are summarized here. For transit use, those who moved because they could no longer afford their old home wanted to save money, or wanted better access to public transportation were the most likely to use transit. Households looking to upsize their home, downsize their home, or form new households had shown the greatest prevalence of reporting they never use transit.

Table 12 - Percent Using Transit and Active Modes for Recreational Purposes by Reason for Moving

	Transit			Active		
Reason Behind Moving	Never	Sometimes	1+/ weekly	Never	Sometimes	1+/ weekly
New job/school location	34%	32%	34%	40%	23%	36%
Could no longer afford old home or apartment	14%	57%	29%	43%	29%	29%
Could afford old home or apartment, but wanted something less expensive	0%	63%	38%	50%	38%	13%
Wanted a better house/neighborhood/school district	53%	30%	18%	40%	23%	38%
Wanted a shorter commute time	26%	58%	16%	58%	11%	32%
Wanted better access to public transportation	8%	46%	46%	31%	38%	31%
Wanted more walkable or bikeable neighborhood	33%	57%	10%	19%	29%	52%
Wanted to upsize	52%	34%	14%	43%	30%	27%
Wanted to downsize	46%	31%	23%	15%	62%	23%
Moved out to establish my own household	43%	45%	13%	48%	20%	32%
Moved in with a new roommate or spouse	40%	36%	24%	24%	44%	32%
No longer able or allowed to live in prior housing (divorce, separation, or dispute; house demolition; eviction; no longer qualified for housing or dorm)	36%	32%	32%	32%	40%	28%

Regarding active modes (walking or biking), respondents who moved for a more walkable or bikeable neighborhood or to downsize had the lowest percentages of respondents who never use active modes, at 19 percent and 15 percent respectively. Those who moved to want a shorter commute time, to upsize, or for less expensive housing had the highest percentages of respondents who never biked or walked, ranging from 43 percent to 58 percent. Specifically, 52 percent of those wanting a more

walkable or bikeable neighborhood and 38 percent of those wanting a better house, neighborhood, or school district reported weekly active mode use. Overall, for recreational purposes, there appears to be more inclination among the respondents towards using transit, biking, and walking compared to trips for shopping, socializing, or work.

Travel for Social Purposes

For social trips, the reasons “Wanted to downsize” and “Wanted to upsize” had the highest “never” percentages at 92 percent and 86 percent, respectively (Table 13). Although there is a significant number of “sometimes” users who moved for affordability reasons, and those wanting a more walkable and bikeable neighborhood had the highest percentages ranging from 24 percent to 29 percent. However, 67 percent of the people who moved to be in a more walkable or bikeable neighborhood reported never using transit for social purposes. The overall trend of using transit was low, with the lowest “never” percentage being for the reason of moving for affordability at 71 percent. The highest percentage of weekly users, at only 13 percent, cited wanting a better house, neighborhood, and school district.

Table 13 - Percent Using Transit and Active Modes for Social Purposes by Reason for Moving

	Transit			Active		
Reason Behind Moving	Never	Sometimes	1+/ weekly	Never	Sometimes	1+/ weekly
New job/school location	79%	19%	2%	74%	17%	9%
Could no longer afford old home or apartment	71%	29%	0%	71%	0%	29%
Could afford old home or apartment, but wanted something less expensive	75%	25%	0%	75%	13%	13%
Wanted a better house/neighborhood/school district	78%	10%	13%	78%	15%	8%
Wanted a shorter commute time	84%	16%	0%	84%	5%	11%
Wanted better access to public transportation	77%	15%	8%	85%		15%
Wanted more walkable or bikeable neighborhood	67%	24%	10%	62%	19%	19%
Wanted to upsize	86%	11%	2%	77%	14%	9%
Wanted to downsize	92%	8%	0%	85%	8%	8%
Moved out to establish my own household	84%	11%	5%	82%	13%	5%
Moved in with a new roommate or spouse	80%	8%	12%	84%	4%	12%
No longer able or allowed to live in prior housing (divorce, separation, or dispute; house demolition; eviction; no longer qualified for housing or dorm)	84%	8%	8%	92%	4%	4%

The reason “No longer able or allowed to live in prior housing” had the highest percentage of respondents reporting never using walking or biking. Overall, the use of these active modes was noted to be low, with the lowest “never” percentage being 62 percent for those who “Wanted a more walkable or bikeable neighborhood.” The highest percentage for weekly users who cited “Could no longer afford old home or apartment” as the reason behind moving stood at 29 percent. In general, social trips seem to have a lower percentage of users compared to other purposes

By Parking Availability

As Table 14 shows, the type of parking availability at home is related to the likelihood of using transit for commuting to work. Individuals with free and guaranteed parking are least likely to use transit, with 61 percent never using it.(As shown below, this result becomes statistically insignificant when controlling for income and other covariates; see

“Model Results: Journey to Work.”) Conversely, those with paid parking are the most frequent transit users, with 49 percent using transit once or more weekly. Free and abundant on-street parking and free but scarce on-street parking show moderate transit use, with a higher percentage of regular transit users compared to those with guaranteed parking. This indicates that less convenient or more costly parking options are associated with greater transit use, likely through the intervening variable of car ownership. Indeed, the number of cars per adult in the household is higher for those with free parking of any kind (0.96 cars per adult), compared to those with paid parking (0.75 cars per adult).

Table 14 - Percent Transit for Work by Parking Availability (N=168)

Parking Availability	Never	Sometimes	1+/ week
Free and Guaranteed Parking	61%	16%	22%
Free and Abundant On-Street Parking	55%	14%	32%
Free but Scarce On-Street Parking	55%	18%	27%
Paid Parking	44%	7%	49%

Table 15 - Percent Mode for Basic Shopping by Parking Availability

	Transit (N=250)			Active (N=249)		
Parking Availability	Never	Sometimes	1+/ week	Never	Sometimes	1+/ week
Free and Guaranteed Parking	79%	12%	9%	53%	20%	27%
Free and Abundant On-Street Parking	74%	13%	13%	52%	19%	29%
Free but Scarce On-Street Parking	71%	19%	10%	52%	14%	33%
Paid Parking	75%	15%	9%	53%	25%	23%

Table 15 shows that parking availability has little effect on the use of transit for basic (utilitarian) shopping trips. Individuals with free and guaranteed parking are least likely to use transit, with 79 percent never utilizing it. The other three categories range between 71 and 75 percent never using transit for basic shopping trips. Similarly, the type of parking available to a person appears to have little relationship with the use of active modes of travel for basic shopping trips. Again, we point to the nature of the locations we surveyed, where many basic shopping needs can be accomplished on foot, perhaps foregoing the need to take transit.

Table 16 provides further details for recreational, specialized shopping, and social trips; these are summarized here. For recreational trips, those with paid parking are considerably more likely to use transit than those with free parking. For specialized (“other”) shopping trips, again, the data show that those with paid parking are more likely to use transit than those with free parking. Finally, for social trips, we observe a

few strong differences. Similar to other trip purposes, residential paid parking tends to increase transit use.

Table 16 – Mode Use Frequency by Trip Purpose and Parking

SPECIALIZED SHOPPING

	Transit (N=251)			Active (N=247)		
	Never	Sometimes	1+/ week	Never	Sometimes	1+/ week
Free, Guaranteed Parking	70%	23%	8%	52%	26%	22%
Free, Abundant On-Street Parking	77%	13%	10%	55%	23%	23%
Free but Scarce On-Street Parking	76%	19%	5%	57%	14%	29%
Paid Parking	62%	24%	14%	53%	34%	13%

RECREATION

	Transit (N=251)			Active (N=249)		
	Never	Sometimes	1+/ week	Never	Sometimes	1+/ week
Free, Guaranteed Parking	58%	32%	10%	44%	26%	30%
Free, Abundant On-Street Parking	61%	19%	19%	42%	16%	42%
Free but Scarce On-Street Parking	57%	29%	14%	33%	38%	29%
Paid Parking	29%	42%	29%	43%	28%	29%

SOCIAL TRIPS

	Transit (N=251)			Active (N=247)		
	Never	Sometimes	1+/ week	Never	Sometimes	1+/ week
Free, Guaranteed Parking	83%	11%	6%	77%	13%	10%
Free, Abundant On-Street Parking	87%	10%	3%	83%	3%	13%
Free but Scarce On-Street Parking	71%	24%	5%	86%	10%	5%
Paid Parking	79%	16%	4%	86%	9%	5%

By Age

As Table 17 shows, age is related to transit use for the journey to work. Looking at the "never uses transit" column, we see that the youngest (aged 14-33) and oldest (aged 69-88) groups are considerably less likely to use transit than the two middle groups. In particular, the age group aged 34-53 use transit the most, with nearly half (45%) using transit to get to work three times a week or more.

Table 17 - Frequency of Riding Transit to Work by Age Grouping (Percentage)

Age Grouping	Never	Sometimes	1/ week	2/ week	3/ week	4/ week	5+/ week	WFH only	Total
14-33	60.4%	16.7%	0.0%	4.2%	8.3%	4.2%	6.3%	0.0%	100.0%
34-53	45.1%	5.9%	3.9%	0.0%	19.6%	7.8%	17.6%	0.0%	100.0%
54-68	45.5%	18.2%	0.0%	15.2%	6.1%	3.0%	9.1%	3.0%	100.0%
69-88	80.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	100.0%
Total	51.8%	12.4%	1.5%	5.1%	11.7%	5.1%	10.9%	1.5%	100.0%

Differences by trip purposes and age category are summarized here. There are few differences in travel by transit for basic shopping trips, though the oldest category is more likely to report never using transit (91% never use transit for basic shopping) compared to younger groups (73% to 78%). The same is true for personal and social trips: the oldest category uses transit the least, though the differences are not stark. When it comes to social trips, the youngest group are most likely to use transit (65% use transit at least sometimes) versus their older counterparts (50% to 56% use it at least sometimes).

By Changes in Location Type

The survey allows us to analyze how the same people travel before and after they move, focusing specifically on changes in their transportation environment. All respondents moved to a TOD location in New Jersey, and some experienced a self-described increase in transit quality, while others moved from very dense and transit-rich environments (for instance, New York City), and experienced a self-described decrease (or no change) in transit quality. As Table 18 shows, those who move to a better transit environment (in their estimation) are somewhat more likely to use transit and active modes than those who did not move to a better transit environment.

Table 18 - Percent Using Mode at Least Sometimes for Any Purpose by Move to Better Transit Environment (N=230)

	Transit	Active
Moved to better transit environment	52%	75%
Did not move to better transit environment	47%	68%

Table 19 shows that when people report moving to a better walking environment, they are somewhat less likely to use transit (44% do, versus 48%) but are more likely to walk or use other active modes at least sometimes for some purposes (79% versus 64%).

Table 19 - Percent Using Mode at Least Sometimes for Any Purpose by Move to Better Walking Environment (N=247)

	Transit	Active
Moved to better walking environment	44%	79%
Did not move to better walking environment	48%	64%

Finally, as Table 20 shows, those who move to a convenient (more auto-supportive; free, more abundant) parking environment are less likely to use transit (39% use it at least sometimes versus 48% for those who did not move to a convenient parking environment), while the reverse is true for the use of active modes—those with convenient parking availability walk, cycle, or use other active modes more often than do those who did not make a move to a convenient parking environment.

Table 20 - Percent Using Mode at Least Sometimes for Any Purpose by Move to Better Parking Environment (N=230)

	Transit	Active
Moved to a more convenient parking environment	39%	77%
Did not move to more convenient parking environment	48%	66%

QUALITATIVE FINDINGS

Overview

A total of 232 individuals indicated their interest in participating in a focus group. From this group, 55 potential participants were chosen to represent all six of the station area study locations (Bergenline Avenue Station in Union City, Bound Brook, Burlington City, Hackensack, Rahway, and Pleasantville Bus Terminal) and to be broadly representative across multiple demographic categories: age, gender, race, ethnicity, education, employment status, length of housing tenure, and household income. For each of four virtual sessions, up to 14 potential focus group participants were selected and contacted via email several days prior to each session. Participants were required to confirm their interest and complete documentation to receive a $100 electronic gift card for their participation.[1]

In all, 33 individuals participated in the four focus groups. See Table 21 for demographic information across all of the focus groups.

Noteworthy Experiences

In a series of sessions focused on public transportation experiences, participants shared anecdotes and perspectives that underscored both the benefits and challenges of using public transportation and living in transit-rich locations in New Jersey. Participants were asked to introduce themselves and to relate a memorable transit experience, ranging from international journeys to daily commutes, as a means of breaking the ice. This diversity of experiences highlighted not only the practical aspects of transit but also its cultural and personal significance.

One prominent theme discussed was the varying reasons for using public transportation. Some participants who relied on transit out of necessity emphasized its role in essential daily routines. In contrast, others talked about how they opted to utilize transit despite having other available modes of travel, citing environmental or convenience factors. This spectrum of motivations underscored the complex interplay between personal choice and societal factors in transit usage.

Throughout the sessions, there was a recurring sentiment of frustration among transit riders. Participants voiced concerns about inconsistent service quality, insufficient information, and personal security issues, reflecting broader challenges within transit systems. These discussions highlighted a shared desire for improvements in accessibility, reliability, and security to better serve community needs.

Moreover, the sessions provided a platform for participants to discuss practical issues and personal stories that shaped their views on urban living and transit. From security concerns to the convenience of multi-modal transit options, such as combining buses, trains, and ferries, the discussions illuminated the integral role of public transportation in facilitating daily life and fostering community connections.

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1 All focus groups were conducted virtually. However, initial plans included the possibility of holding one in-person session and to offer participants a $125 electronic gift card for their participation in that session.

Table 21 - Participant Demographics

Category		Freq.	Pct.
Station	Bergenline Ave	8	24%
	Bound Brook	4	12%
	Burlington City	3	9%
	Hackensack	10	30%
	Pleasantville	1	3%
	Rahway	7	21%
Housing Tenure	Less than 5 years	17	52%
	6 to 10 years	8	24%
	More than 10 years	8	24%
Age	18-24	5	15%
	25-34	7	21%
	35-44	6	18%
	45-54	5	15%
	55-64	5	15%
	65+	5	15%
Gender	Female	23	70%
	Male	8	24%
	Non-Binary	1	3%
	Prefer not to answer	1	3%
Household Income	Less than $25K	4	12%
	$25K - $34,999	2	6%
	$35K - $49,999	2	6%
	$50K - $74,999*	9	27%
	$100K - $149,999	10	30%
	$150K - $199,999	2	6%
	$200K+	4	12%
Latino	Not Latino	25	76%
	Latino	8	24%
Race	Asian	6	18%
	Black	10	30%
	Latino / Mixed	2	6%
	White	15	45%
Education	High school	2	6%
	Bachelor's	18	55%
	Master's	10	30%
	Doctorate	3	9%
Employment Status**	Full-time	16	48%
	Homemaker	2	6%
	Not working and looking for work	3	9%
	Part-time	11	33%
	Student	3	9%
	Unable to work	1	3%

*Recruitment survey contained an error

**Respondents were permitted to select more than one employment status

Overall, participants shared a nuanced portrait of public transportation as both a practical necessity and a cultural touchstone. They underscored the importance of addressing challenges while celebrating the diverse experiences and perspectives that enrich our understanding of transit's role in modern society. The insights gleaned from these discussions provide valuable considerations for enhancing transit infrastructure and services to meet the evolving needs of communities across different regions.

Summary Highlights

Housing choice and reasons for relocation

Across four focus groups, participants shared diverse experiences and motivations for relocating to transit-rich locations. Discussions spanned various factors influencing residential decisions, from transportation access to the nuances of prospective communities in which to reside, and economic considerations such as housing and transit costs. Participants emphasized the importance of reliable transit options for commuting convenience, connecting with family and friends, and enjoying amenities and walkability. These insights underscored the multifaceted nature of choosing residential locations, particularly within TODs. Participants highlighted the need to balance transportation accessibility, work location, cost considerations, and quality of life factors that influence their residential preferences.

Access to reliable transportation networks emerged as a primary motivation, enabling easier commutes to work and fostering connectivity with broader social circles. Many participants emphasized the convenience of living in neighborhoods with robust transit options, which allowed them to reduce dependency on cars and embrace more sustainable modes of transportation. For example, Participant 4-JJ's move from Edison to West New York was driven by her desire for better walkability, despite owning a car that she rarely used. This shift exemplifies a preference for neighborhoods where daily necessities are within walking distance, highlighting the transformative impact of transit accessibility on lifestyle choices.

> *When we moved to Hackensack, the apartment's proximity to a bus stop was very important. ~ Participant 1-DR*

> *"We [Participant and her husband] chose Rahway because it not only is a like a 40-minute train ride to Penn Station, but we can also take the train to the Jersey Shore and we can take the train out to New Brunswick and Princeton. I am from NJ and I had lived in Belmar and I had stopped, on the train back and forth from Belmar to New York, the train always stopped at Rahway and I just remembered this place and that it is kind of like a transportation hub, especially for the train, and that's why we chose it." ~ Participant 3-BA*

> *"I live in Hackensack, NJ, which has a lot... compared to the rest of the state, a lot of transit options. One thing when I moved back to the area that I discovered, and it was a deciding factor for me to sell my car, we have the Pascack Valley Line that runs through Hackensack and we have three train stations." ~ Participant 3-SR*

I give a very big importance to NJ TRANSIT.
And it's the reason I live here [West New York]. ~ Participant 3-LC

Economic considerations also played a significant role in participants' decisions. Participant 4-RG's choice to relocate to Rahway was influenced by the economic advantages of living closer to family and enjoying favorable train services that provided convenient access to New York City, New Jersey shore communities, and neighboring towns. These decisions underscore a broader trend where individuals prioritize locations offering more manageable housing and transportation costs, aligning with their financial goals and enhancing overall affordability.

Additionally, the appeal of walkable communities and access to amenities such as shops, restaurants, and recreational spaces emerged as key factors influencing participants' residential choices. The presence of these amenities not only enhances convenience but also contributes to a vibrant community life within Transit-Oriented Developments (TODs). Ultimately, the discussions highlighted how transit accessibility shapes both the practical aspects of daily life and the broader quality of life enhancements within TODs, emphasizing the importance of holistic community planning and infrastructure development.

Travel behaviors

While exploring travel habits and behaviors, several recurring themes emerged regarding participants' transportation choices and more specifically, the choice to travel by public transportation. These themes included the issue of time efficiency, parking availability, cost considerations, convenience, and travel specifically to New York City.

For many, the decision of whether to travel by public transportation rested upon how long they believed it would take in comparison to driving. Several participants stated that they will opt for driving due to perceived time savings, especially for shorter distances (but not walkable distances) where transit options were less frequent, less reliable, or involved transfers. This preference reflects their desire for convenience and the ability to control their schedules. These factors were more pronounced among those living in more suburban areas where frequency and route availability were less robust. One example shared focused on the commute from Burlington City to Princeton, two fairly-well served communities. While the participant would have preferred to travel by public transportation, the trip via the River LINE, followed by travel on the Northeast Corridor and the Princeton Branch (also known as the Dinky) would have resulted in a two-hour trip versus one of about 30-40 minutes.

I have never looked into a bus route. You know, I did investigate the River LINE but it would be River LINE to Trenton and then switch to NJ TRANSIT, get off at Princeton Junction, take the Dinky to get into Princeton. I mean, 2 hours, like ridiculous. So I did it a couple of times when my car was in the shop but otherwise… ~ Participant 3-HS

However, timing also factors into mode choice in a different way. Some participants added that they prefer to travel via public transportation when road traffic is particularly bad.

I think it has to do with the amount of traffic and the time of day as well [this] impacts the kind of transportation I would use to get around." ~ Participant 4-JJ.

"If I want to go somewhere in New Jersey I have to time it because if I don't... I have a window of opportunity to get out before I am stuck if I need to be somewhere. I never schedule an appointment before 10 or 11 in the morning because I cannot drive out of the area. So that's why my car is in the garage most of the week. But again, usually where I want to go, I can get [there] via mass transit if it's out in New York City. But if it's somewhere in New Jersey that I have to drive [to], I literally am stuck from the rush hours, I cannot get out." ~ Participant 4-JJ

Parking availability also plays a crucial role in shaping transportation decisions. Several participants cited easy access to parking as a primary reason for their reliance on cars. Relatedly, participants highlighted that when faced with the inconvenience and perceived hassle of parking, they were more likely to use public transit, citing their more frequent use of public transit in urban environments like NYC where parking costs are high. This consideration often pushes individuals towards using transit for longer-distance trips, where parking becomes prohibitively expensive or difficult to find. One participant also added that limited parking encourages them to walk and to restrict utilizing their vehicle for local trips so as not to lose their parking spot.

Cost considerations emerged as another significant determinant of travel behavior. Many participants stated that they prioritized cost savings by opting for transit, particularly for journeys to NYC. They cited expenses associated with driving such as tolls, parking fees, and fuel costs as factors that made using public transportation a more economical choice. This financial consideration associated with driving is especially pertinent for longer journeys where the cumulative costs of driving can be substantial, prompting a shift towards more cost-effective transit options.

The convenience of transportation methods for shopping trips varied among participants. Several participants stated that they find public transit inconvenient for shopping due to challenges like carrying purchases and accessing desirable retail destinations (such as big box stores, including large supermarkets), preferring the flexibility and ease of driving. This contrasts with their willingness to use transit for commuting or longer trips to major cities, where factors such as traffic congestion and parking costs weigh differently in their decision-making process. The topic of shopping will be explored further below.

Participants overwhelmingly agreed that using public transportation was the preferred mode for traveling to Manhattan as well as other locations in NYC (though some preferred to drive to the outer boroughs). Stated reasons for this preference included avoiding traffic, reducing stress, and lowering overall travel costs compared to driving. Several participants specifically commend the speed and convenience of trains for these journeys, contrasting with their use of cars for local errands or shopping where transit options may be less attractive.

Shopping and conducting personal business

Local shopping habits often encompass visits to pharmacies, restaurants, doctors, dentists, libraries, and post offices, which are generally within a walkable distance for many. However, grocery shopping presents unique challenges, especially for those adhering to a "big shop" or suburban model, which doesn't align well with local shopping or pedestrian modes. Individuals who have adopted a more urban model of shopping have adapted by using wagons or shopping carts. For instance, Participant 3-BA in Rahway finds a metal wagon effective for transporting groceries. While carrying heavy bags is not a major issue for some, others would prefer more local options to mitigate this concern. The popularity of big-box stores, like Costco and Sam's Club, underscores a preference for variety and bulk purchases, which local stores are not well-suited to provide in terms of quality, variety, or price.

Participants revealed diverse shopping habits. Many drive to shop for their groceries and essentials, opting for in-store shopping or using “curbside” pickup services. For example, Participant 2-TH began using pickup services during the pandemic and continues to do so. Several participants also favor online shopping platforms like Instacart for convenience, particularly post-pandemic. This shift is primarily due to the convenience of having groceries delivered and the difficulty of managing heavy loads.

Utilizing transit for shopping presented a challenge for many participants. Many highlighted the impracticality of carrying heavy groceries on public transportation, leading to a preference for driving or using delivery services. Despite a general openness to local shopping, the inadequacy of local grocery offerings and the convenience of driving or online shopping make it the preferred choice for many. Most participants find transit impractical for heavy loads, suggesting that improved transit accessibility and convenience would encourage more use.

For some, dining out involved walking to nearby establishments either by their homes or by their places of employment. But many choose to drive to local or nearby town establishments, citing the limited appeal or accessibility of local dining options. For the participants who do not drive, they overcome this limitation by utilizing Uber or relying on friends to drive.

Local shopping and dining habits are influenced by security concerns, convenience, and accessibility. Several participants stated that they prefer to support local businesses and to walk to nearby shops. However, they also rely on driving for larger or more specific shopping needs. While the pandemic had accelerated a shift towards online shopping for nearly all participants, they also valued access to local options when practical. To this end, improvements in transit, security, and local store offerings could encourage more local shopping as well as greater use of transit, and walking and biking, to satisfy shopping demands.

Participants were also asked to discuss the state of commercial activity and new mixed-use/retail developments in their respective communities. Some observed successful ongoing revitalization efforts with new businesses and developments in their areas. In contrast, others noted challenges in sustaining new businesses, partly due to changing consumer patterns favoring online purchases. One participant expressed concerns about large-scale developments potentially disrupting historical and small business

landscapes. She voiced frustration with promises that local businesses would benefit from new residential developments, a condition she believes has not materialized. These insights reflect a community grappling with balancing local shopping with broader commercial trends and urban development.

Walkable communities

Participants were asked for their opinions on the walkability of their communities. The conversation focused on issues of personal security, aesthetics, and convenience. Most participants highly valued good walking environments and found their neighborhoods walkable, but even within the same communities this varied. Overall, participants were the most positive about walkability near the Bergenline Avenue Station, Bound Brook, Burlington City, parts of Hackensack, and in Rahway. For example, parts of Burlington City were described as safe, comfortable, and aesthetically pleasing, making them enjoyable for walking. Burlington City was noted for its historic charm and pleasant promenade along the Delaware River.

> *I'm a car guy!" grew up loving cars, and considered it a sport. For 40 years, I drove to work or daily trips, but now that I'm older, I really appreciate living in a walkable community that provides all my needs without needing to drive. I, also, have a wide variety of options and choices for a lot of local things. However, the intermediate distances (~10 miles) that… sometimes … are difficult to access via transit because the transfers pile up. or often the bus lines don't actually go there, or if they do, it doesn't run very regularly.*
> *~ Participant 1-GB*

Participants were not in agreement about Hackensack and found its walkability to be mixed, with certain areas improved by redevelopment, while other areas are less walkable due to traffic congestion. Similarly, some found the waterfront areas near the Bergenline Avenue intermodal facility nice for walking, but also offered that nearby streets crowded with cars detract from the pedestrian experience. Generally, participants found that some neighborhoods lack interesting sights and required navigating busy roads to reach destinations, reducing their appeal for walking.

Participants were also asked about the availability and use of bike share programs. The availability of bike share programs varies, with some communities lacking such services. While one neighborhood had a brief e-scooter service, there is a general desire for more bike-sharing options to enhance mobility and reduce reliance on cars.

Meeting daily needs without a car

Participants were asked whether they could meet their daily needs utilizing only public transit, biking, and walking, i.e., without owning a car. It should be noted that several participants already live without owning or driving a car. The discussion revealed a variety of perspectives on using public transit, biking, and walking to meet daily needs without relying on a car. These experiences provide a nuanced understanding of the feasibility and challenges associated with alternative modes of transportation.

Several participants emphasized the importance of living in areas with robust transit systems. One participant grew up in a city with excellent transit access and rarely used

her car. Even after moving to a nearby city, she continued to prioritize transit access, reflecting how strong public transportation options can significantly influence where people choose to live. Another participant moved to maintain easy access to New York City without needing a car, underscoring the importance of transit in residential decisions.

The reliability of public transportation played a crucial role for those who chose to rely on it exclusively. One individual relocated from a less transit-friendly city back to an area with a robust system, highlighting the confidence that dependable mass transit can instill. Several participants, including those who do not drive by choice or circumstance, find public transportation sufficient for their needs. This confidence suggests that with adequate support, public transportation can effectively serve as a primary mode of travel.

Not all participants found public transit easy to navigate. One person mentioned the complexity of transit systems, particularly in large cities, as a significant barrier, making driving a more convenient option. Another participant often relies on carpooling or ride-sharing services for specific commutes, indicating gaps in transit coverage or convenience. These challenges highlight the need for user-friendly and comprehensive transit systems that can accommodate a broader range of users.

> *Okay. I think I could do what you suggested except with the caveat being, if I did not own a car, I'd probably have to rely on Uber or Lyft every once in a while to get some place where the bus is just too inconvenient. So, it could work in Rahway, and at my age, and being retired, it would be possible. ~ Participant 4-RG*

One participant's daily commute by bus and preference for walking or using an electric bicycle for longer distances illustrate a practical and environmentally conscious approach to transportation. This individual prefers the bus over ride-sharing services due to cost considerations and since he no longer owns a car. However, numerous participants expressed frustrations with inadequate service, poor vehicle maintenance and cleanliness, anti-social behavior near transit stops, and fare increases without perceived commensurate improvements.

> *I have an electric bicycle that I'll use if I want to go a little bit further. I try to stay away from a car. And Ubers are just very erratic in their pricing. So, I try to avoid that too because, I always get mad at myself [when I use the service]. ~ Participant 3-SR*

Balancing family responsibilities with transportation choices can be challenging. One participant, who has a large family, finds it necessary to drive despite a preference for walking, highlighting the limitations of public transit in accommodating large families and the logistical demands of parenting. Another participant balances convenience with sustainability by walking for daily needs but using a car for occasional bulk shopping trips.

> *I do have a newborn baby, so I find that more convenient, just to have the groceries delivered. And to do things, like, for small groceries, I can walk because I do have a lot of supermarkets in my area as well. And I find that*

taking the transit is not so convenient because to get to, for example, Target, I would have to it's, like, a 15-minute walk from the transit. So if I have groceries, I would have to carry the groceries for 15 minutes then take the transit, so that's a little inconvenient. Okay. ~ Participant 2-ER

The general sentiment among participants reveals a complex relationship with car ownership. While some appreciate the freedom and support a car provides, others prioritize public transit but resort to driving for punctuality. The ability to meet daily needs without a car is viewed as feasible by some focus group participants who plan to rely on public transit and walking. However, practical challenges such as time management, reliability, and flexibility often necessitate a hybrid approach.

Pandemic effects

The pandemic has significantly influenced various aspects of life, particularly in the realms of work and shopping behaviors. One major change has been the reduction in office commutes. For example, some participants now work in the office only a couple of days a week, while others, despite having flexible schedules, choose to work more days in the office due to their preference for in-person interaction and shorter commutes. This shift underscores a broader trend towards hybrid work schedules, where specific commuting days are established while allowing for remote work the rest of the time. Such arrangements reflect personal preferences, convenience, and the pandemic's impact on daily routines.

Well, I mean, the main difference is I used to go into work five days a week. And like many, many people, I only go in two days a week now. ~ Participant 3-HS

So, it changed a lot because, you know, you don't you don't necessarily need travel time when you're having remote meetings. So it was nice in that sense, but I do think the sense of community has drastically gone down because there's not as much of a sense of camaraderie.

And, I have found because, as I think [Participant 4-RG] mentioned, he does a lot of volunteer work. I still volunteer for […] and just in terms of participation because everything's online, it's changed significantly. I feel like people don't know each other anymore. ~ Participant 4-FL

So I've become more impatient. So before the pandemic, I was on transit 100 percent of the time for work, 5 days a week… but the pandemic disrupted that. And then after, you know, we returned back to work hybrid. I was I was doing okay there for a while, but I just found myself, like, increasingly more impatient. I don't want to sit here and wait for the Rutgers bus. And I don't want to just [be] more patient about sitting and waiting for the train up at the New Brunswick Station. Because a lot of the amenities were closed, so you couldn't sit in the nice kind of waiting area anymore. You couldn't go get a nice coffee at Dunkin Donuts and just kind of pass the time. ~ Participant 1-AJ

I worked in an office every single day. I went there every day. And I actually people used to tell me, you know, you could work from home one or two days a week. It's okay. And I never did because it just for me. Going to work meant going to my office. And then, of course, with the change of COVID, I had to work from home for a period of time. And now I'm so much more comfortable about working from home. I hardly ever go to the office, and I hardly ever drive my car. ~ Participant 4-JJ

The participants also shared that their shopping behaviors have seen notable shifts due to the pandemic. The necessity to minimize physical contact and maintain security led many to rely more heavily on online shopping. This shift was initially driven by health concerns but has persisted for some focus group participants. For instance, one individual began online shopping to protect vulnerable family members but has since reverted to in-person shopping, avoiding online purchases altogether. Conversely, others maintained their use of online services, like meal kit deliveries, throughout the pandemic, finding the convenience and security benefits compelling.

I was doing almost online everything. ~ Participant 3-SR

Mhmm. So, it just feels more comfortable, like, reaching towards the online shopping experience. It's also more convenient. ~ Participant 2-EK

Lifestyle changes extend beyond work and commuting. Shopping and dining habits evolved, with a heightened preference for online shopping and delivery services. The shift towards more local shopping also became prominent as people sought to support nearby businesses and reduce travel. These changes highlight the pandemic's role in accelerating existing trends, emphasizing the need for flexibility and adaptability in both work and lifestyle choices.

However, I'm so lucky. Like, I really I didn't really start to appreciate it until, like, I think, 2019 or so, like, when the pandemic hit. I am so lucky to live in a walkable neighborhood [in Hackensack]. Like, I mean, I literally don't need to get transportation for anything like my daily needs. I've got a Target near me. ~Participant 1-PN

My town is walkable, so for the food and subsistence I wanted, I could go walk, get it, and come back. So, and I had nowhere to really go using transit because no one went anywhere. So, if I went anywhere, it was in the car, in and out, with a mask on and back. And I ran several courses all online with Zoom. And so the whole world kind of closed down. ~ Participant 1-GB

And I would say since pandemic now, and the season has a lot to do with it, too because you go out more when it's warm. I probably use transit more now than I did before the pandemic… I'm finding out how to use transit to my advantage with restaurants, entertainment, and other discretionary travel. ~ Participant 1-GB

Concerns over transit security and cleanliness continue to influence decisions around commuting and daily activities, demonstrating the lasting impact of the pandemic on everyday life.

> *Even though it's a nice neighborhood, but when you walk down … and then go across the bridge, it's, you know, a little a few homeless people there or people that straggling around, and you don't feel safe. So if you come by yourself, you're really like, okay, "should I go in now, or should I wait for somebody else to come in?" ~ Participant 4-CM*

> *They're [NJ TRANSIT] just awful. I just tell you what. I guess if you compare it to nothing, which is what a lot of parts of the United States have, it's good, but it's just awful. Like, they don't care. Those buses are gross. Like, just clean them. The bus terminal in New York City is an abomination. It's gross. And they're raising our prices. They're raising the prices of the fares, not giving us an ounce of service. ~ Participant 3-SR*

Making transit easier and more convenient

Participants engaged in discussions regarding public transportation with several recurring themes and areas for improvement. Foremost among these was a widespread desire for better transit services characterized by increased frequency, reliability, and security. Many expressed frustrations with the current state of transit systems, citing issues such as navigating multiple fare systems, encountering unreliable schedules, and facing challenges with poor signage. These factors collectively contributed to a perception of public transit as less convenient and less dependable than desired.

Despite these challenges, there was a notable level of support for public transit among participants. They recognized its importance and value, particularly in urban environments where alternative transportation options can be limited.

The discussion also touched on the issue of walkability in neighborhoods. Participants living in walkable areas appreciated the ability to meet many of their daily needs without relying on a car. However, they acknowledged difficulties when it came to longer or more complex trips, underscoring the need for comprehensive transit solutions that cater to various travel distances and purposes.

Security and cleanliness emerged as critical concerns affecting the transit experience. Participants voiced apprehensions about the security of transit platforms, particularly during peak times, and highlighted issues such as chaotic environments, cleanliness problems, and the need for improved security measures. Enhancing these aspects was seen as essential to fostering a safer and more welcoming transit environment.

> *I think if the buses were cleaned more regularly, I'd decide to use it more. Sometimes I want to make sure my clothes don't accidentally touch a mess that was left on the bus, so I decide to Uber instead. ~ Participant 2-EK*

Improving communication and information systems was another key area of focus. Participants stressed the importance of clear and timely communication at transit stations, noting deficiencies in public address systems that hindered passengers' ability to receive accurate information about schedules and announcements. They praised the

effectiveness of mobile apps that provide real-time updates and suggested expanding such technologies to enhance the overall travel experience.

Infrastructure upgrades were also discussed, with suggestions ranging from improving signage and lighting at stations to enhancing accessibility features, especially in major transit hubs. Better integration among different transit modes, such as buses and light rail networks, was seen as crucial for streamlining travel and reducing travel times.

Additionally, participants proposed community-building initiatives within transit networks, such as a "travel buddy" system, to promote a sense of security and mutual support among commuters. These efforts would be aimed toward creating a more cohesive and supportive transit community, thereby improving the overall passenger experience.

In conclusion, while participants expressed frustrations with existing transit systems, their support for public transit was evident. They advocated for comprehensive improvements in service quality, security, cleanliness, infrastructure, and community engagement to make public transit a preferred choice for urban mobility. Addressing these areas would not only reduce dependency on cars but also enhance the accessibility, reliability, and overall appeal of public transit for diverse commuter needs.

Takeaways

The focus groups highlighted the benefits and challenges of living in transit friendly locations and of using public transportation as a primary mode of travel. Participants shared diverse reasons for using public transit, ranging from necessity and convenience to environmental concerns. These discussions emphasized the need for improvements in service quality, information availability, and security.

Participants expressed frustration with inconsistent service and personal security concerns (e.g., antisocial behavior by others), highlighting the need for better accessibility and reliability. The participants also shared that their housing choices were significantly influenced by access to reliable transportation, with many participants prioritizing proximity to transit for easier commutes and better connectivity.

Travel behaviors revealed that time efficiency, parking availability, and cost are major factors in choosing between using public transportation and driving (at least for those who chose to own and use cars). While public transit was preferred for longer commutes and trips to New York City, many still drive for local errands or use delivery services due to gaps in transit coverage and convenience.

The pandemic influenced their work and shopping habits, leading to more hybrid work schedules and increased use of online shopping and delivery services. These changes underscore the need for adaptable transit solutions to fit new patterns of daily life.

Participants called for comprehensive improvements to public transit, including increased frequency, reliability, personal security, and better communication systems. Enhancing walkability, infrastructure, and community engagement were also deemed essential for making public transit a more attractive option.

In summary, the sessions underscored the importance of addressing current challenges in public transportation while recognizing its vital role in daily life. The insights provided offer valuable guidance for improving transit services to meet the evolving needs of

communities, aiming to make public transit a more accessible, reliable, and preferred mode of transportation.

A final thought:

> *I wish I could make it to the focus group [scheduled to be] in person, but I can't get there reasonably because there's too many connections and it takes too long to do so by transit, and taking an Uber or driving would be too expensive. ~ Participant 4-1-PN*

QUANTITATIVE FINDINGS

As part of the NJDOT Task Order 394: Transit Usage Impacts of NJ Transit-Oriented Developments (TODs) project, the Alan M. Voorhees Transportation Center at Rutgers University (VTC) conducted an online survey of residents living near six transit hubs in New Jersey. This section of the report summarizes the results of statistical models of respondents' frequency of transit use and use of active modes (walking, cycling, use of scooters and similar).

The VTC team mailed postcards inviting participation from residents living near six transit hubs: Bergenline Avenue (in Union City) and Burlington City light rail stations, Bound Brook and Rahway rail stations, and Pleasantville and Hackensack bus hubs. The first mailing took place in November of 2023 and was followed up with in-person recruitment at several nearby public locations (supermarkets, train stations, public libraries, parks, farmer markets, etc.). From this first data collection phase, the team received 146 responses, though not all respondents provided information for all questions. To achieve a more robust sample size, the team redesigned postcards and sent a second wave of postcards to potential respondents (including many new addresses) in February 2024. From this second wave of postcards, the team received 195 responses, for a total of 341 responses. In the following summary, the sample size for each question varies considerably, as many respondents did not answer all questions. For our cross-sectional models, the sample size ranges from 134 to 173 respondents. For the time-series models, due to the large number of respondents who did not supply a location from which they moved, the sample size ranges from 78 to 79 respondents.

While the team's original research proposal foresaw separate analyses for each surveyed area, the sample size for each of the areas is too small (except Rahway rail station and Hackensack bus terminal, with 62 and 53 responses, respectively). Thus, the descriptive analysis that follows in this memo provides overall statistics for the entire sample rather than area-by-area comparisons.

The survey was conducted using the online survey platform Qualtrics. The survey contained seventy-two questions, though due to branching logic, no respondents saw all questions (e.g. renters did not answer questions related to homeownership). The median duration for filling out the survey was just under ten minutes (599 seconds).

The following sections provide detail on each of the model types, their interpretation, and the results. The report concludes with overall lessons learned and implications for policy and planning.

Model Types

The following sections use three model types each to explore the topics of respondents' frequency of transit use and the frequency of the use of active modes of travel for various trip purposes (the journey to work, shopping for basic goods, other types of shopping, recreational trips, and social trips). Each model type is explained briefly in the following subsections.

Ordered Logistic Regression Models

Overview

Ordered logistic regression models, also called ordinal logistic regression models, are used when you want to predict an outcome that has a natural order or ranking, but the difference between each level isn't necessarily equal. This is the case for our survey's questions related to the frequency of use of transit and active travel modes; respondents could select from several options, which we then grouped into three ordered categories. These categories are: never; sometimes, but less often than once per week; once per week or more often. These are categories that have order, but do not have a uniform "distance" between them, meaning we do not presume that the difference between never using transit and sometimes using transit (but less than weekly) is the same as the difference between sometimes (but less than weekly) and weekly or more frequent transit use is the same. The model output includes cutoff points ("thresholds") that describe the empirically derived "distance" between these outcomes, and this is used to predict the probability of a respondent selecting each of the three categories of use frequency.

Just like in other forms of regression, ordered logistic regression models have predictor variables (like age, income, or education level) that might help explain why a respondent would report a higher or lower level of usage of a particular mode. We include both sociodemographic variables and location-based variables (characteristics of the neighborhood and residence) in the models. The models also produce a goodness-of-fit statistic, a pseudo-R-squared value, which indicates the degree to which the model predicts respondents' outcomes, with a value of zero indicating "not at all" and a value of one indicating "perfectly."

Technical Details

The model can be expressed as:

$$\log(P(Y>J)/P(Y\leq J) = \alpha j - \beta 1\, X1 - \beta 2\, X2 - \cdots - \beta k\, Xk$$

Where:

- Y is the outcome variable (e.g., frequency of transit use),
- J represents the categories of the outcome variable (the three categories of use frequency),
- P(Y≤J) is the probability that the outcome is in category J or lower,
- P(Y>J) is the probability that the outcome is higher than J,
- αj is the threshold or intercept for category J,
- β1,β2,…,βk are the coefficients associated with the predictor variables *X1,X2,…,Xk.*

The model estimates the log-odds of being in a category or below versus being in a higher category. The equation describes the relationship between the predictor variables and the odds of being in each category or lower. The thresholds are different for each category and help define the boundaries between them. The predictor

variables can push the probability of a higher or lower rating up or down, depending on the values of their coefficients.

Structural Equation Models

Overview

Structural equation models (SEMs) are a powerful way to analyze complex relationships between variables. We use SEMs in this analysis to explore whether some variables directly influence the use of transit and active modes of travel, or whether they indirectly influence that choice only (or largely) through the intervening variable of car ownership. A simple analysis might miss these interconnections, but SEMs are designed to handle them. SEMs are designed to handle multiple relationships between variables at once through a system of multiple, simultaneously estimated equations; each equation can take a specific form, such as a standard linear regression model or an ordered logistic regression model.

Technical Details

SEMs can take many forms. Our SEMs employ a linear regression model of car ownership (cars per adult in the household), which then feeds into an ordered logistic regression model (described above) of the frequency of respondents' use of transit or active travel modes, separately for several trip purposes.

Figure 3 shows an overview of the model, which is explained in greater detail below.

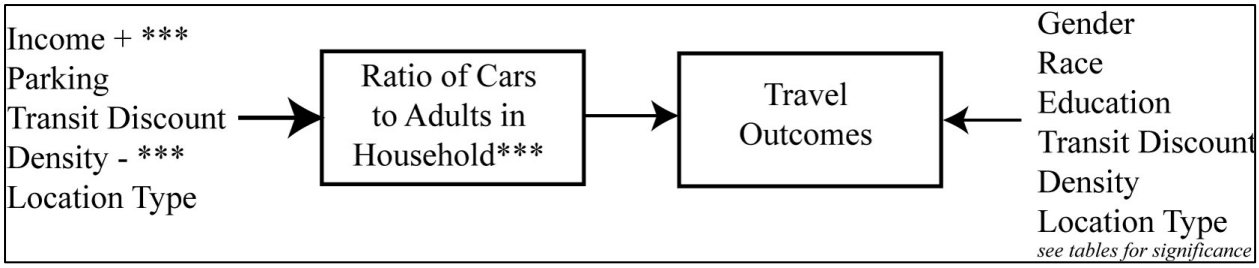

Figure 3. Overview of Structural Equation Models Used

*Note: Asterisks indicate statistical significance (left side); *p<0.10; **p<0.05; ***p<0.01. Statistical significance for right-side variables vary by outcome, and are shown in tables below.*

Linear regression models with multiple predictors ("multiple regression") can be expressed using the equation:

$$Y=\beta 0 +\beta 1\ X1 +\beta 2\ X2 +\cdots+\beta k\ Xk +\epsilon$$

Where:

- Y is the outcome of interest (in this case, the number of cars in the household divided by the number of adults in the household),
- *X1,X2,…,Xk,* are the different predictor variables,
- β1,β2,…,βk are the corresponding coefficients that represent how each predictor variable influences Y,

- ϵ is the error term (it accounts for the variation in Y that is not explained by the X variables).

Ordered Logistic Regression, the right-hand side of Figure 3, is explained in detail above and not repeated here.

Difference-in-Differences Models

Overview

Difference-in-differences (DiD) models, also called “change-on-change" models, are commonly used to study the effect of an intervention or change on an outcome of interest. These models estimate the effect of change in predictor variables on the change in a variable of interest. Here, we use DiD models to exploit the retrospective portion of our survey, in which respondents described their prior living situation. We focus primarily on the change in the density and transit service quality (before and after moving to one of our NJ Transit Village areas) on their change in the use of public transportation. We employ an ordered logistic regression framework, described above, to account for the ordered and non-linear nature of our outcomes of interest (change in the self-reported frequency of using transit and active modes of travel for a series of trip purposes.)

Technical Details

The technical details for our DiD models are largely unchanged from the Ordered Logistic Regression models described in detail above. The outcome of interest is changed from the self-reported frequency of use of transit and active modes of travel to a change variable: whether the person reports using these modes less, about the same amount, or more after their move to a Transit Village as compared to before. The predictor variables are restricted to variables that change over time and which we hypothesize may influence a change in the usage frequency for these modes: change in residential density, and the location type where the respondent moved to.

Ordered Logistic Regression Results

Interpreting tables

The tables in this section show the results of separate ordered logistic regression models, organized across columns by trip purpose. The coefficients are listed in the columns labelled “coeff.” and the statistical significance is shown in the columns labelled “sig.” Significance is indicated by stars, with one star (*) indicating statistical significance at the $p<0.10$ level, two stars (**) indicating a $p<0.05$ level, and three stars (***) indicating a $p<0.01$ level of significance. The level of significance represents the model’s probability that the true effect is zero (meaning, there is no effect in the real world and the model erroneously provides a coefficient other than zero.) This means that coefficients with no stars should be interpreted as “statistically indistinguishable from zero.”

Positive coefficients represent an increased probability of a respondent stating a higher level of transit usage, while negative coefficients represent the opposite. The

magnitudes of the coefficients (how big the number is in the positive and negative direction) should be interpreted with care; the coefficient represents the additive contribution in response to a unit increase (+1.0) in the predictor variable. For binary ("dummy") variables, which are coded as 0=no and 1=yes, this is simple and can be interpreted as the change in probability associated with the binary variable being true (for example, "female" indicates being a female as opposed to male). For other variables, the interpretation is less comparable across variables. Our residential density variable is measured in 1,000s of people per square mile, so the coefficients associated with that variable can be interpreted as "how the probabilities differ when comparing a person who lives at a density of, say, 11,000 people per square mile versus the same person living at 10,000 people per square mile.

The model goodness of fit is indicated at the bottom of the tables, in the row labelled "Pseudo R-Squared," which roughly corresponds to a traditional R-squared value from linear regression outputs. A value of zero would indicate that the model has no predictive power, while a value of one would indicate perfect predictive power. Our pseudo-R-squared values range in the 0.12-0.23 range, which is typical for models of individual travel choices, which are understandably hard to predict; everyone travels differently, and their race, gender, and characteristics of their neighborhood naturally only go so far in explaining those differences.

The cutpoints listed in the results tables are used for more advanced interpretation, in calculating the probability that an individual person will select each of the three options for transit use frequency.

Models of Transit Use Frequency

Table 22 shows the output of a series of ordered logistic regression models of respondents' frequency of transit use for the trip purposes: travel to work, travel for shopping, travel for errands and appointments, travel for recreational purposes, and travel for social purposes.

Table 22 - Ordered Logistic Regression Model Results for the Frequency of Use of Public Transportation, 2023-24, Selected New Jersey ZIP Codes Near Transit Nodes, by Trip Purpose

	Self-Reported Use of Transit for…									
	Journey to Work		Basic Shopping		Errands and Appts.		Recreation		Social	
	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
Female	0.42		0.22		-0.34		-0.16		1.52	***
Race/Ethnicity										
(Base: Non-Hisp. White)										
NH Black	0.53		1.26	*	0.89	*	0.35		-0.91	
NH Asian or Pacific	0.83		1.35	**	0.55		0.86	*	1.01	
NH Other	0.22		0.51		-14.57		-1.33		-13.46	
Hispanic, any race	0.11		0.89		-0.47		0.72	*	1.52	***
Education										
(Base: Less than Associates)										
Associates Degree	1.08		0.48		1.23		1.09		-0.96	
Bachelors Degree	1.13		0.86		1.26	*	1.79	***	-0.19	
Masters Degree or More	1.58	**	0.79		0.66		1.97	***	0.08	
Total Household Income										
(Base: Middle, $50k-$149.9k)										
Low, $0-$49.9k	0.66		0.44		0.57		-0.73		0.72	
High, $150k or more	1.14	**	-1.44	***	-0.33		-0.76	**	0.94	*
Ease of Parking at Home										
(Base: Free and Easily Available)										
Free and Scarce	0.52		0.28		-0.94		0.11		0.49	
Paid of any kind	0.77		0.95	*	0.74	*	1.13	***	1.14	**
Ratio of Cars to Adults in HH	-1.38	**	-2.09	***	-1.25	***	-0.80	**	-0.07	
Has Discounted Transit Pass	1.94	***	0.15		0.65		0.33		-0.11	
Density in Home Tract (1,000s per sq. mi.)	0.01		<0.01		0.01	*	<0.01		0.01	
Location Type										
(Base: TOD Property)										
Within 0.25mi, not TOD property	0.28		0.69		0.10		0.22		0.84	
Between 0.25 and 0.50mi	0.42		1.21		1.01		1.03	*	2.17	***
Beyond 0.50mi, in same ZIPs	-0.06		1.38	**	0.26		0.29		1.10	
Cutpoint 1	2.01		1.99		1.29		1.31		4.85	
Cutpoint 2	2.75		3.45		3.08		3.40		6.70	
N	134		172		173		173		173	
Pseudo R-squared	0.23		0.17		0.12		0.13		0.19	

Note: Stars indicate statistical significance: one star (*) represents statistical significance at the p<0.10 level, two stars (**) a p<0.05 level, and three stars (***) a p<0.01 level of significance.

Transit Model Results: Overview

This section provides a brief overview of the results for all trip purposes. Each trip purpose is detailed below. While there are some statistically significant effects for gender, race, and income in the model, they are not consistent. For instance, higher-income people are more likely to use transit for the journey to work and social trips than is the reference category (middle-income people), they are less likely to use transit for basic shopping and recreational trips. There is no significant difference between the three income categories with respect to non-basic ("other") shopping trips and the use of transit. Results for race and education are similarly inconsistent.

Stronger and more consistent results are found with predictor variables related to the cost and convenience of transit and, especially, transit's main competitor for most people: the private automobile. Respondents who must pay for parking at home are considerably more likely to use transit for all trip purposes. Those who own more cars (as a ratio of cars to adults in the household) are consistently less likely to use transit. And those who have an employer-provided transit discount are much more likely to use transit, though just for the journey to work; notably, these passes typically are only indicated for the origin-destination pair for the person's journey to work (rail) or for a specific number of bus travel zones (bus), which may limit their usefulness for some respondents for some non-work trips.

In our models, residential density has either no or only a very weak effect on the use of transit, though this may be due to the lack of meaningful variation in this variable given that all our respondents live in or near a Transit Village (that is: they all live at similar and relatively high residential densities). A regression analysis that included more respondents living at lower densities might produce different results.

Our variable describing the respondent's location and the housing's relationship with regard to the proximate transit station (the core stop or station of the Transit Village) have inconsistent effects, though these may tell an important story for each trip purpose. More detail is provided below on this.

Transit Model Results: Journey to Work

Among the sociodemographic variables, having a master's degree or greater (+1.58 coefficient) and having a high income (greater than $150,000 per year; +1.14 coefficient) are statistically significant. This suggests that those with greater incomes and a graduate or professional degree are more likely to commute frequently by transit. While we did not collect data to confirm this, this is likely due to higher-skilled jobs, which pay more, being located disproportionately in New York City, where driving is expensive and onerous and which is the focal point of much of the NJTRANSIT rail network and, to a lesser extent, of the bus network. Other sociodemographic variables (race, gender) play no independent role in predicting transit use for the journey to work in our model.

Turning to the characteristics of the travel modes themselves, the model suggests that having more cars per adult in the household is strongly negatively associated with transit use for the journey to work (−1.38 coefficient). Having a discounted transit pass is a strong positive predictor of also using transit for the journey to work (+1.94). The ease and cost of parking at one's home is not significantly tied to choosing to use transit

for the journey to work; we suspect that the ease and cost of parking at one's place of employment (not included in our survey) might be a significant predictor of the decision to drive to work.

The variables describing the respondent's location are uniformly insignificant in explaining transit use. Among all respondents (who all live in a ZIP code within a half mile of a transit node), being in a denser location and closer to transit (or living in a building that markets itself as being transit-friendly in some way) are not associated with transit use for the journey to work, once we control for socio-demographics, car ownership, and transit pass holding.

Transit Model Results: Shopping

When going on shopping trips, the model suggests that non-Hispanic Black and Asian or Pacific Islanders are more likely to use transit than are members of other racial/ethnic groups. The highest-earning respondents (earning over $150,000 per year) are considerably less likely to use transit than are lower earners. No other sociodemographic variables are statistically significant.

Those who pay for parking at home are more likely (+0.95 coefficient) to use transit more frequently for basic shopping trips. Those with more cars per adult are considerably less likely (−2.09 coefficient) to be frequent transit users for shopping trips. Here, and in all remaining trip purposes, having a discounted transit pass is not statistically significant.

Regarding location type within our study areas of Transit Villages, only being in the most distant location category with regard to the primary transit node is associated with more frequent transit use, and the effect is strong and positive (+1.38 coefficient).

Transit Model Results: Errands

For errand-related trips, we find that being non-Hispanic Black and holding a bachelor's degree (but not a higher degree) are associated with greater transit use. As was the case for basic shopping trips, we find that those who must pay for parking at home are more likely to use transit. Those with more cars per adult are less likely to use transit. We find a small positive effect of living at greater residential density, expressed in thousands of people per square mile in the home ZIP code (coefficient +0.01). Location type (bands of distance from the primary transit node) is not significant in the model.

Transit Model Results: Recreational Trips

For recreational trips, we find that non-Hispanic Asians and Hispanics of any race are somewhat more likely to use transit. People with higher education (a bachelor's degree or higher) are more likely to use transit, as well. And those with the highest incomes are less likely to use transit. As with shopping trips of both types, those who pay for parking at home are more likely to use transit, and those with more cars per adult in the household are less likely to use transit. For our location type variables, only living in the band between 0.25 and 0.50 miles from the primary transit node is significantly (positively) associated with transit use for recreational trips.

Transit Model Results: Social Trips

For social trips, the model suggests that women are considerably more likely than men to use transit more frequently. Similarly, Hispanics of any race and the highest-earning

respondents are more likely to use transit for social trips. As with all other trip purposes except the journey to work, paid parking at home is strongly associated with greater transit use. And as with recreational trips, those living in the middle-distance band from the primary transit node (0.25 to 0.50 miles from it) are more likely to use transit frequently for social trips.

Models of Frequency of Non-Motorized Travel

Table 23 shows the output of a series of ordered logistic regression models of respondents' frequency of non-motorized modes ("active travel") for the trip purposes: travel to work, travel for shopping, travel for errands and appointments, travel for recreational purposes, and travel for social purposes.

Table 23 - Ordered Logistic Regression Model Results for the Frequency of Use of Non-Motorized Modes, 2023-24, Selected New Jersey ZIP Codes Near Transit Nodes, by Trip Purpose

	Self-Reported Use of Non-Motorized for…							
	Basic Shopping		Errands and Appts.		Recreation		Social	
	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
Female	-1.01	***	-0.84	***	-0.28		0.05	
Race/Ethnicity								
(Base: Non-Hisp. White)								
NH Black	-0.24		-0.03		-0.67		0.57	
NH Asian or Pacific	-0.43		-0.27		-0.08		1.50	**
NH Other	0.37		-0.83		-1.10		-16.30	
Hispanic, any race	-0.60		-0.27		-0.11		0.76	
Education								
(Base: Less than Associates)								
Associates Degree	-0.07		-0.03		0.35		-14.19	
Bachelors Degree	0.86		0.85		0.54		1.08	
Masters Degree or More	0.80		0.89		0.99	*	0.70	
Total Household Income								
Base: (Middle, $50k-$149.9k)								
Low, $0-$49.9k	0.36		0.141		-0.09		-0.53	
High, $150k or more	-0.44		-0.37		-0.16		-0.76	
Ease of Parking at Home								
Base: Free and Easily Available	0.65		-0.47		-0.25		-15.98	
Free and Scarce	-0.08		-0.59		-0.33		-0.26	
Paid of any kind								
Ratio of Cars to Adults in HH	-1.86	***	-1.06	**	-0.52		0.49	
Has Discounted Transit Pass	-0.03		0.57		-0.10		-0.24	
Density in Home Tract (1,000s per sq. mi.)	<0.01		0.01		<0.01		0.01	
Location Type								
(Base: TOD Property)								
Within 0.25mi, not TOD property	0.12		0.23		0.43		-0.45	
Between 0.25 and 0.50mi	-0.11		0.55		-0.07		2.25	***
Beyond 0.50mi, in same ZIPs	-1.01	**	-0.30		-0.22		0.14	
Cutpoint 1	-1.94		-0.74		-0.57		3.39	
Cutpoint 2	-0.73		1.13		0.60		4.83	
N	167		166		167		166	
Pseudo R-squared	0.10		0.07		0.04		0.16	

Note: Stars indicate statistical significance: one star (*) represents statistical significance at the p<0.10 level, two stars (**) a p<0.05 level, and three stars (***) a p<0.01 level of significance.

Non-Motorized Model Results: Overview

This section provides a brief overview of the results for all trip purposes. Each trip purpose is detailed below. Too few respondents used non-motorized modes for the journey to work for a model to be estimated.

First, the models provide a considerably lower goodness-of-fit than the transit use models did, suggesting that the frequency with which respondents walk, cycle, and use scooters or similar modes is much less predictable than is their use of transit. No variable is uniformly predictive of non-motorized travel for each of the four trip purposes. Women were less likely to use non-motorized modes for shopping and travel, reflecting the findings from previous research that women often shop and run errands in “trip chains” (where car usage is higher) more frequently than men do, for instance picking up dry cleaning on the way home from work. Those with more cars at home (per adult in the household) are less likely to use non-motorized modes, too, for shopping and errand trips.

More details are provided below for each of the four trip purposes.

Non-Motorized Model Results: Shopping

The model suggests that, controlling for other variables in the model, women are less likely to use non-motorized modes of travel for shopping trips than are men (-1.01 coefficient). Only two other variables are statistically significant in the model: cars per adult in the household (−1.86 coefficient) and living beyond 0.50 miles of the primary transit node, but still within one of the ZIP codes found within 0.50 miles of the node (−1.01 coefficient).

Non-Motorized Model Results: Errands

The results for errand-related trips are very similar to those for shopping trips. Women and those with more cars per adult in the household are less likely to use non-motorized modes for errand-related trips. Unlike the shopping model, the errands model finds no effect of location type with respect to the primary transit node.

Non-Motorized Model Results: Recreational Trips

Only one variable is statistically significant in this model. Those with a master’s degree or higher are more likely to use non-motorized modes for recreational trips than are all others. No other variables have a significant relationship with the outcome.

Non-Motorized Model Results: Social Trips

Only two variables are statistically significant in this model. Non-Hispanic Asian or Pacific Islanders are more likely to use non-motorized modes for social trips (coefficient +1.50) and those living within 0.25 and 0.50 miles of the primary transit node are also more likely to use these modes (+2.25). No other variables have a significant relationship with the outcome.

Structural Equation Models

Because it appears that one of the strongest predictors of the use of transit and non-motorized modes is the level of car ownership (cars per adult in the household), we estimate a series of structural equation models (SEMs) in which car ownership levels are an intervening variable influenced by other variables in the model.

Figure 3, above, shows this diagrammatically. Specifically, the model assumes that car ownership levels are influenced by: income, parking ease and cost, holding a discounted transit pass, residential density at the home location, and location type (distance from the primary transit node as well as living in a building that is marketed as being somehow transit-oriented.) The estimated output of this sub-equation of car ownership then feeds into a model of travel outcomes (frequency of transit use; frequency of non-motorized mode use) for each of the travel purposes. Sociodemographics also feed into this model as predictor variables, and transit pass holding, density, and location type are also included as independent variables in the subequation.

We present the model results briefly below. The results are shown in a reduced form, with the subequation for car ownership shown graphically and the subequations for each of the travel modes for each trip purpose summarized in simplified tabular format.

Subequation of Car Ownership Levels

Levels of car ownership in the sub-equation are almost entirely predicted by a household's income. Figure 4 shows the effect of income on car ownership levels, as predicted by the model. Car ownership (as a ratio of cars to adults in the household) rise sharply as income increases in the first three income categories, with a jump of 0.54 cars per adult between households earning less than $25,000 per year to those earning $25,000 to $39,999 per year. For the next-higher income category, the effect increases an additional +0.18 cars per adult, to a total of 0.72 more cars per adult than is the case in the lowest income category. The effect increases another +0.13 in the third income category, to a total of 0.84 more cars per adult than is the case in the lowest income category. After this level of income ($50,000 to $74,999 per year), the levels of car ownership decrease somewhat.

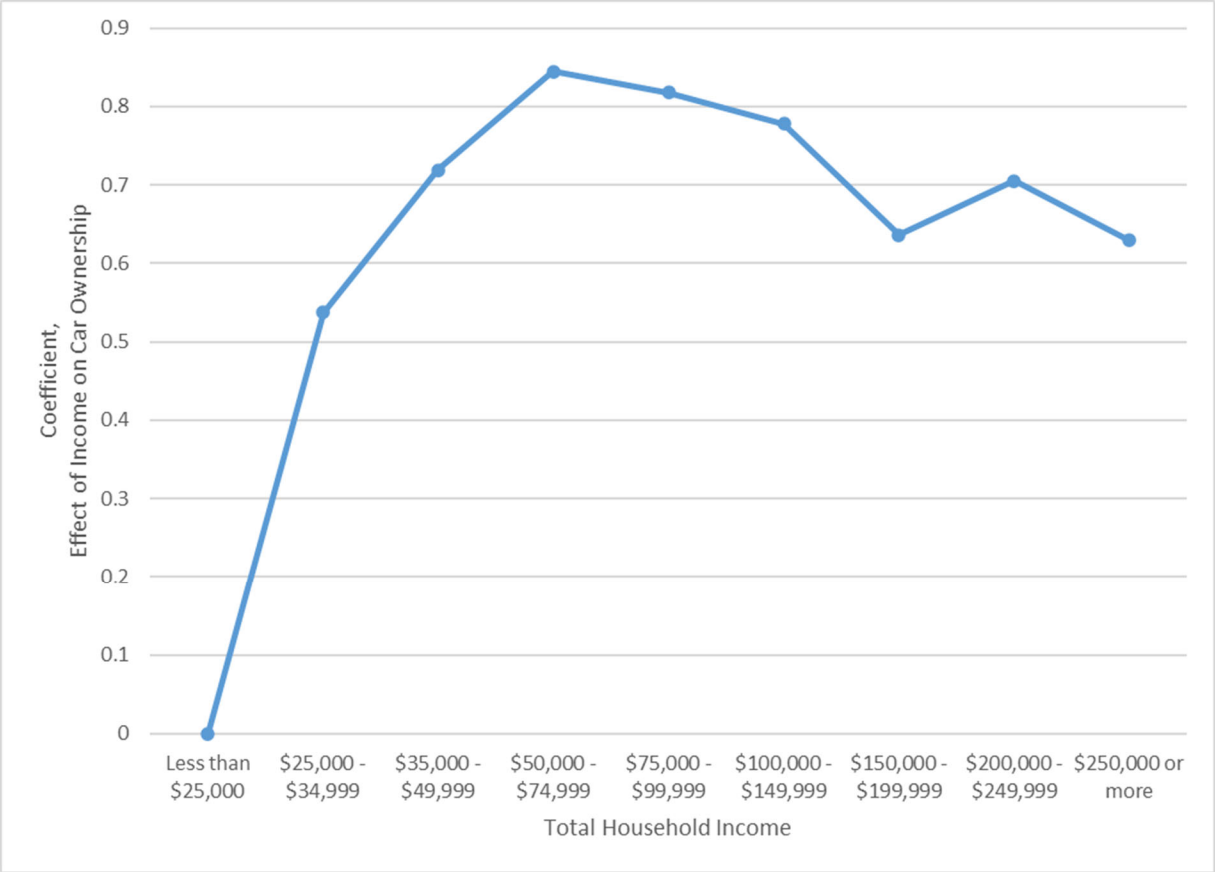

Figure 4. Independent Effect of Income on Car Ownership Levels in SEMs

No other variable was statistically significant in the model's subequation of car ownership levels.

Subequations of Travel Mode Use by Trip Purpose

Table 24 shows a simplified summary of the subequation for transit use frequency for each of the five trip purposes. In this table, coefficients are shown in a simplified "positive or negative" format, and statistical significance is shown in the standard format, with one star (*) indicating statistical significance at the $p<0.10$ level, two stars (**) indicating a $p<0.05$ level, and three stars (***) indicating a $p<0.01$ level of significance.

Table 24 - Structural Equation Model Subequation for Ordered Logistic Regression Model Results for the Frequency of Use of Public Transportation, 2023-24, Selected New Jersey ZIP Codes Near Transit Nodes, by Trip Purpose

	Self−Reported Use of Transit for…									
	Journey to Work		Shopping		Errands and Appts.		Recreation		Social	
	Dir.	Sig.	Dir.	Sig.	Dir.	Sig.	Dir.	Sig.	Dir.	Sig.
Female									+	*
Race/Ethnicity										
(Base: Non−Hisp. White)										
NH Black										
NH Asian or Pacific										
NH Other										
Hispanic, any race									+	**
Education										
(Base: Less than Associates)										
Associates Degree										
Bachelors Degree							+	***		
Masters Degree or More	+	*					+	***		
Ratio of Cars to Adults in HH	–	***	–	***	–	***	–	***	–	*
Has Discounted Transit Pass	+	***								
Density in Home Tract (1,000s per sq. mi.)	+	*			+	***				
Location Type										
(Base: TOD Property)										
Within 0.25mi, not TOD property										
Between 0.25 and 0.50mi									+	**
Beyond 0.50mi, in same ZIPs										

Note: Stars indicate statistical significance: one star (*) represents statistical significance at the p<0.10 level, two stars (**) a p<0.05 level, and three stars (***) a p<0.01 level of significance.

The table shows that only car ownership levels (per adult in the household) is a consistent predictor of transit use in the Structural Equation Modeling framework. In each of the models, having more cars per adult in the household is associated with lower frequency of transit use. Other variables are statistically significant in particular models. As in the ordered logistic regression models above, women and Hispanics are more likely to use transit for social trips, controlling for other variables in the model. Those with higher levels of education are more likely to use transit for recreational trips and the journey to work. Discounted transit passes are associated with more transit use for the journey to work. Living at a higher residential density (in the home ZIP code) is associated with more transit use for the journey to work and for errands and appointments. Finally, location type with respect to the primary transit node is only significant in the model of social trips, with a positive effect for those living between 0.25 and 0.50 miles from the transit node. Traditional goodness-of-fit statistics, such as a pseudo-R-squared, are not produced for structural equation models.

Table 25 shows the results for a series of subequations for the use of non-motorized modes. These models have few significant predictor variables. Female respondents are somewhat less likely to walk, cycle, or use scooters (or similar) for shopping and errand trips, controlling for other variables in the model. Non-Hispanic Asians are more likely to use transit for social trips. Car ownership level (cars per adult in the household) has a statistically significant and negative effect on using non-motorized travel modes for shopping and errands/appointments.

Table 25 - Structural Equation Model Subequation for Ordered Logistic Regression Model Results for the Frequency of Use of Non-motorized Modes, 2023-24, Selected New Jersey ZIP Codes Near Transit Nodes, by Trip Purpose

	Self-Reported Use of Nonmotorized for…							
	Shopping		Errands and Appts.		Recreation		Social	
	Dir.	Sig.	Dir.	Sig.	Dir.	Sig.	Dir.	Sig.
Female	-	***	-	**				
Race/Ethnicity								
(Base: Non-Hisp. White)								
NH Black								
NH Asian or Pacific							+	**
NH Other								
Hispanic, any race								
Education								
(Base: Less than Associates)								
Associates Degree								
Bachelors Degree								
Masters Degree or More								
Ratio of Cars to Adults in HH	-	***	-	**				
Has Discounted Transit Pass								
Density in Home Tract (1,000s per sq. mi.)								
Location Type								
(Base: TOD Property)								
Within 0.25mi, not TOD property								
Between 0.25 and 0.50mi								
Beyond 0.50mi, in same ZIPs								

Note: Stars indicate statistical significance: one star (*) represents statistical significance at the p<0.10 level, two stars (**) a p<0.05 level, and three stars (***) a p<0.01 level of significance.

Difference-in-Difference Models

This section presents the results of a series of difference-in-difference models of the change in use of transit, walking, and cycling before and after a residential relocation. It also presents the results of a model of the reported change in shopping locally before and after a residential relocation. Table 26 shows the results of these models.

Table 26 - Difference-in-Difference Models of Change in Use of Modes and Change in Local Shopping Frequency as a Function of Changes in Residential Location, 2023-24, Residents Currently in Selected New Jersey ZIP Codes Near Transit Nodes, by Trip Purpose

	Self-Reported Change in…							
	Transit Use		Walking		Cycling		Shopping Locally	
	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
Change in Residential Density at Home (1,000 people per sq. mi.)	0.08	***	0.03	***	0.01		0.03	**
Location Type								
(Base: TOD Property)								
Within 0.25mi, not TOD property	-1.11	**	-0.06		-0.31		-0.44	
Between 0.25 and 0.50mi	-2.09	**	1.02		-0.11		-0.25	
Beyond 0.50mi, in same ZIPs	-1.28	*	-0.37		-0.29		0.04	
Cutpoint 1	-2.32		-1.57		-0.76		-1.79	
Cutpoint 2	-0.22		0.27		2.04		0.58	
N	79		78		79		78	
Pseudo R-squared	0.19		0.08		<0.01		0.05	

Note: Stars indicate statistical significance: one star (*) represents statistical significance at the p<0.10 level, two stars (**) a p<0.05 level, and three stars (***) a p<0.01 level of significance.

These models contain only variables that change between residential relocation. Here, we focus on two variables only: residential density in the home ZIP code (from the US Census for the most proximate year of the move and the American Community Survey 2019-23 five-year sample for the current year). As in the previous models, density is measured as thousands of persons per square mile, and so a value of 1.0 for this variable would mean that the respondent moved from one ZIP code to another ZIP code with 1,000 more residents per square mile. We also include our "location type" variable, which measures the respondent's current location with respect to the primary transit node in the study area. We excluded 3 cases where respondents reported moving from a ZIP code within the study area, so that we can interpret this location type variable as a move from anywhere outside of the study area in the United States to a specific location type within the study area. Because a considerable portion of our respondents did not report their previous ZIP code, our sample size is smaller in these models than in the previous models.

The outcome variables in these models are self-reported changes in the use of particular modes as well as in the frequency of shopping locally. For each of these, the respondent could select from three options: they use the mode (or shop locally) less in their new location compared to the old location, about the same, or more. We employ an ordered logistic regression functional form, as above, to account for this ordered response set.

Moving to a location with a greater residential density is associated with respondents reporting that they use transit more, walk more, and shop locally more often than in their previous location. We find no effect on cycling frequency. The effect of increased density is strongest for transit use frequency (+0.08 coefficient) and lower (+0.03) for both walking and local shopping frequency. Location type is statistically significant only for transit use frequency; those moving to TOD properties (that advertise the building as

being related to the primary transit node in some fashion) use transit considerably more than do those who move to all other location types (reflected in their negative coefficients relative to the base case of moving to a TOD property).

Synthesis of Results

This section synthesizes the results of the models presented above. Broadly speaking, we find little consistency in the independent effects of sociodemographic variables in our models. Higher-income respondents are somewhat more likely to use transit for work and social purposes, but less likely for shopping and recreational purposes. The effects of race/ethnicity are weak and vary by model. The effects of location type (with respect to the primary transit node) are similarly weak, rarely statistically significant, and vary across models. The predictor variables that consistently predict more transit use and use of non-motorized modes are those that influence the cost and convenience of mode usage: those with fewer cars per adult at home are consistently more likely to use transit. Having a discounted transit pass has a large and significant positive effect on transit for the journey to work. And paid parking at home is associated with more transit and non-motorized transportation use for most trip purposes.

The difference-in-difference models suggest that those who move to live in denser, more transit-friendly locations are consistently more likely to use transit, walk, and shop locally than are those who make other moves. The effect of changes in residential density on transit use are considerably stronger than are the effects associated with walking and shopping locally.

Implications for Policy

Our data analysis suggests that New Jersey's transit-richest locations likely increase transit use, walking, and local shopping, particularly when they attract residents from less-dense locations. The analysis further suggests avenues for increasing the benefits of transit-oriented development. Those with fewer cars (which is statistically associated with lower incomes in our structural equation models) are consistently associated with traveling more by transit and non-motorized modes. Similarly, those who pay for parking in their home location are consistently more likely to use transit. Efforts to increase the share of residential units in transit-oriented developments that are affordable to lower-earning households would likely reap considerable mode shift benefits. Similarly, efforts to decouple parking provision from monthly rent payments (that is: parking paid separately) would likely encourage lower car ownership rates in these developments, and greater use of transit and non-motorized modes.

OVERALL CONCLUSIONS

Focus Group Findings

Focus group discussions revealed a diverse range of motivations and challenges associated with living in transit-oriented developments (TODs). Participants valued the convenience of transit access for commuting and socializing, often choosing TOD locations to reduce commute times and reliance on cars. While they acknowledged that TODs foster a sense of community and provide accessibility to amenities, frustrations with transit reliability and security concerns persist.

Participants exhibited a nuanced approach to selecting the appropriate mode for their travel, trip-by-trip. Many preferred driving or using delivery services for groceries due to the challenges of carrying heavy loads on public transit, although they favored walking to local businesses when possible. Their dining and shopping choices depended on walkability, security, and convenience, with concerns about new developments impacting small businesses. The COVID-19 pandemic reshaped transit use, leading to increased remote work options that diminished the need for daily transit while reinforcing the appeal of TODs for occasional commuting.

Overall, participants shared a nuanced perspective on public transportation as both a practical necessity and a reflection of community identity. The insights gathered highlight the importance of addressing transit challenges while celebrating the varied experiences that shape perceptions of transit's role in modern life. Recommendations for enhancing transit infrastructure and services can help better meet the evolving needs of communities in transit-rich areas.

Descriptive Findings

Residents in transit-oriented development (TOD) buildings or within a quarter mile of transit are somewhat more likely to use transit for various purposes compared to those living further away. Our descriptive analysis of the data does not broadly support the notion that residents of TOD developments (those that advertise their properties as being somehow tied to the primary transit node) use transit or non-motorized modes more than their neighbors who reside in other areas of the community. In fact, residents of TOD buildings tend to have slightly more cars per adult in the household and have higher incomes than their closest neighbors not in a TOD building. They are the least likely to live car-free; only 3 percent did, compared to 12 percent for all other location types. However, all transit-proximate residents, regardless of whether they live in a TOD building, do use transit more, in general, than their further-out neighbors.

The cost and convenience of driving appear to matter greatly for the use of transit. Paid parking at home is strongly associated with more frequent transit use for commuting, while free and guaranteed parking it is associated with less transit use. Those with paid parking, in particular, have fewer cars per adult in the household. Households with fewer vehicles per adult are consistently more likely to use transit and active modes such as walking or biking.

The research also used a retrospective design that asked respondents about their most recent move to their current location near a transit node. Respondents who moved specifically for better transit access or affordability are more likely to use transit and

active modes for commuting and other trips. In contrast, those who moved for reasons unrelated to transit (e.g., upsizing or lifestyle changes) generally report lower transit usage. Moving to areas perceived as more transit- or walking-friendly is associated with increased transit and active mode usage, suggesting that local environmental factors play a role in transportation choices.

Quantitative Findings

Overall, there is limited consistency in the influence of sociodemographic variables on transit use. Higher-income respondents tend to use transit more frequently for work and social activities but less for shopping and recreational trips. The effects of race and ethnicity are generally weak and vary across models, as do the effects of location type in relation to the primary transit node, which are rarely statistically significant across the models.

The most consistent predictors of increased transit and non-motorized mode use are factors affecting the cost and convenience of these modes. Households with fewer cars per adult are consistently more likely to use transit. A discounted transit pass has a strong positive effect on transit use specifically for commuting, while paying for parking at home is associated with more frequent transit and non-motorized mode use for most types of trips.

To summarize these models: the biggest predictors of transit use and walking and cycling are related to the cost and convenience of the modes, including the primary competition for transit, walking, cycling, and using other non-motorized modes: the private automobile. This fits with a commonly used economic model of travel mode choice, in which the costs associated with the modes (monetary costs, time costs, as well as the subjective costs associated inconvenience, lack of reliability, feelings of insecurity and danger, etc.) are found to be the biggest explanatory factors in mode choice. One discrepancy between our models and the larger literature is that our location-based variables (density and location type in regard to the primary transit node) are not significant; location-based measures (for example, measures of the built environment) tend to have a statistically significant, albeit typically small, effect on mode choice. We suspect that the lack of a strong finding in our research may have a twofold explanation: our sample size is smaller than that of many studies, and all of our respondents were located in relatively similar locations (at least in a ZIP code with a busy transit node), while most studies examine a broader set of location types.

We note that the difference-in-difference models further suggest that those who relocate to denser, transit-friendly areas are more likely to increase transit use, walking, and local shopping than those making other types of moves. The impact of increased residential density on transit use is notably stronger than its effects on walking and local shopping.

Future Research Agenda

This study highlights important trends and facts related to TOD in New Jersey, but it also raises additional important questions. Here, we outline a possible program for future research.

First, this study had a relatively low sample size, which prevented the research team from analyzing travel behaviors at specific stop- or station-area locations. It is likely, however, that the context of the area matters to travel decisions. Factors that could be investigated with a larger sample include differences between bus- and rail-based TOD locations, differences related to proximity to New York City, and differences related to the local housing market and housing prices. A larger sample would also provide a more robust basis for regression analysis; it is likely that some predictor variables are reported in our models as non-significant largely due to the small sample size and low levels of variation within the variables (for instance, residential density).

A larger sample size—and greater variation in measured variables—could be achieved by: (a) engaging prospective participants at multiple events (such as farmers' markets, street fairs, and other community events), (b) social media recruitment, (c) partnering with a commercial survey firm, and (d) expanding the number of sampling areas to include a greater variation in location type. Indeed, another possible future research approach could be to expand the sampling frame considerably, to include part or all of the state of New Jersey, irrespective of location in or near a TOD site.

Future work could also explore how work location, and a respondent's frequency of commuting to a work location, might explain some of our findings. We suspect, for instance, that those who commute to high-density locations with costly and time-consuming driving conditions (for instance, Manhattan or Center City Philadelphia), might be considerably less likely to drive (to work, or perhaps in general) than would their neighbors who are similar in most regards, but who do not work in a location where driving to work is costly, unreliable, or time-burdening. We further suspect that these differences would attenuate when those who commute to New York or Philadelphia adopt flexible work arrangements that might help them avoid some of the costs of driving to work.

Finally, for some research questions, so-called "big data" (large datasets, often initially collected for purposes other than the primary research question) may help. For instance, cellular telephones produce high-quality traces of people's movements throughout the day, and these data are purchasable from a number of vendors. Home location and mode can be inferred from these data sources; the phone owner's home location is frequently assumed to be where the phone "rests" at night for long periods of time, and mode can be inferred from a combination of travel route and speed. For some basic research questions, this can suffice. A researcher could compare those who live closest to a transit hub to those who live further away, tracking the frequency and destination travel to by transit, for instance, or explore the likely origins of those frequenting particular transit-served locations. More nuanced questions—anything that cannot be inferred by GPS traces, such as characteristics of the household, parking availability at home and work, income, car ownership levels, and so forth, will continue to require purpose-collected survey data or qualitative approaches, such as focus groups.

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APPENDICES

- Online survey
- Focus group guide
- Focus group recruitment survey

Appendix 1. Online Survey

Consent

Thank you for taking our survey. To continue in English, please click on the arrow below.

Para realizar esta encuesta en español, haga clic aqui

INFORMED CONSENT:

I am asking you to participate in a research study titled "TRANSIT USAGE IMPACTS OF NJ TRANSIT-ORIENTED DEVELOPMENTS (TODS)." The following describes this study, which is being led by Michael J Smart at the Bloustein School of Planning and Public Policy at Rutgers University.

What the study is about

The purpose of this study is to understand how people living in different neighborhoods in the same towns around New Jersey use—or don't use—public transportation. The study will also examine the impacts of the COVID-19 pandemic on the use of public transportation and shopping behavior.

What we will ask you to do

Qualtrics Survey Software https://rutgers.yul1.qualtrics.com/Q/EditSection/Blocks/Ajax/GetSurve...

We will ask you about you about your daily travel, including all modes of travel, and how this has changed over time, focusing on any time you have moved (changed your home address) from one home or apartment to another. If you are unwilling or unable to provide any of this information, we ask that you stop the survey now. The survey takes less than 10 minutes to complete.

Risks and Benefits

We anticipate that your participation in this survey presents no greater risk than everyday use of the Internet.

Compensation for participation

If you choose, you will be entered into a lottery for a gift card worth $100. All participants in the survey will have an equal chance to win this prize, regardless of their answers or non-answers.

Privacy/Confidentiality/Data Security

We will remove any identifying information from our dataset and keep that in a separate encrypted location, and only members of the research team will have access to that data which will be password protected.

De-identified data from this study may be shared with the research community at large to advance science. We will remove or code any personal information that could identify you before files are shared with other researchers to ensure that, by current scientific standards and known methods, no one will be able to identify you from the information we share. Despite these measures, we cannot guarantee the anonymity of your personal data.

If you have questions

The main researcher conducting this study is Michael Smart, a professor at Rutgers

University. If you have any questions, contact him now. You may also contact him with questions at a later date if questions arise. Professor Smart may be contacted via email at mike.smart@rutgers.edu and by phone at (848) 932-2751.

If you have questions about your rights as a research subject, you can contact the IRB Director at: Rutgers Arts and Sciences IRB (732) 235-2866 or the Rutgers Human Subjects Protection Program at (973) 972-1149 or email them at humansubjects@ored.rutgers.edu. Please keep this consent form if you would like a copy of it for your files.

Statement of Consent:
I have read the above information, and have received answers to any questions I asked. I consent to take part in the study.

- ○ I agree
- ○ I decline

Home location questions

We will begin with some questions about your **current home**

In what year did you move to your current home?

If you don't know or can't recall: approximately how long ago was it that you moved to your current home?

- ○ 0-3 years ago
- ○ 4-6 years ago
- ○ 7-9 years ago
- ○ more than 10 years ago

To your best estimate, which option describes your current monthly fixed housing costs?

Include your rent/mortgage, property taxes, and associated HOA fees, and exclude variable costs like utilities (gas, electricity, parking, etc.)

- ○ $0 - $500
- ○ $501 - $1000
- ○ $1001 - $1500
- ○ $1501 - $2000
- ○ $2001 - $2500
- ○ $2501 - $3000
- ○ More than $3000

Current Home Questions

How many bedrooms are in your home?

- 1
- 2
- 3
- 4 or more

How many bathrooms are in your home?

- 1
- 1.5
- 2
- 2.5
- 3 or more

How would you describe your parking availability at home?

- Free parking in a personal driveway
- Free, and guaranteed parking on-site
- Free, but not guaranteed parking on-site
- Free, and abundant on-street parking
- Free, but scarce on-street parking
- Metered on-street parking
- Paid on-site parking (daily, monthly, or yearly rate)
- Paid off-site parking (daily, monthly, or yearly rate)
- Other

You said that parking is not free at your current residence. To your best estimate, how much does parking at home cost per year?

Current home transportation questions - basics

These questions concern your **current home**

Do you own or rent your current home?

- Own
- Rent
- I live with family or in someone else's home

What type of housing do you live in?

- Detached Single Family
- Condo or Co-Op unit
- Townhouse
- Duplex or Row House
- Other

What type of housing do you live in?

- Detached single family home
- Apartment/condo/townhome in a 1-5 unit building
- Apartment/condo/townhome in a 6-10 unit building
- Apartment/condo/townhome in a 10+ unit building
- Other

These questions concern your **current home**

How would you describe the ease and pleasure of walking in your neighborhood to run errands? e.g., shopping, banking, medical, etc.

- Very good
- Adequate
- Not adequate
- Very poor

How would you describe the ease and pleasure of walking in your neighborhood for exercise or recreation?

- Very good
- Adequate
- Not adequate
- Very poor

These questions concern your **current home**

Are you familiar with the public transit (bus, train, light rail) stations/stops near your home?

- Yes
- No

Do you feel that public transit is accessible to you for trips that start or end at home?

- Yes, very available
- Yes, somewhat available
- No
- Not sure

Do you feel like you would be able to meet your daily needs using only public transit, biking, and walking -- without owning a car?

- Yes, easily
- Yes, with some difficulty
- No
- Not sure

Household facts and weekly trips

This section concern your **current home**

How many cars or personal vehicles are reliably available to you and members of your household to use?

- 0
- 1
- 2
- 3 or more

How many bicycles (or other alternative transportation devices like electric scooters) are reliably available for you and your household members to use?

- 0
- 1
- 2
- 3 or more

Do you have access to discounted transit passes through work?

- Yes
- No
- Not applicable/I don't work
- I don't know

This section concerns your **current home**

During an average week, how many times do you leave your home to purchase basic household needs? e.g., go to the grocery store, pharmacy, etc.

- 0
- 1
- 2
- 3
- 4 or more

During an average week, how many times do you leave your home for recreation? e.g., restaurant, bar, gym, sports and concerts, etc.

- 0
- 1
- 2
- 3
- 4 or more

During an average week, how many times do you leave your home for other shopping trips? e.g., clothes, furniture, etc.

- 0
- 1
- 2
- 3
- 4 or more

During an average week, how many times do you leave your home for social activities? e.g., visiting friends or family, attend religious services, social club events, etc.

- 0
- 1
- 2
- 3
- 4 or more

Travel behavior

This section concerns your **current home**

How many days per week do you usually travel to work?

- 1 time per week
- 2 times per week
- 3 times per week
- 4 times per week
- 5 or more times per week
- I do not travel to work
- I do not work
- I am retired

How often do you use **transit** when *traveling to work*?

- I work from home always
- Never
- Sometimes, but less than once per week
- 1 time per week
- 2 times per week
- 3 times per week
- 4 times per week
- 5 times or more per week
- I do not work

During an average week, how many times do you use **transit** when leaving your home for *shopping trips*?

- Never
- Sometimes, but less than once per week
- 1 times per week
- 2 times per week
- 3 times per week
- 4 times per week
- 5 times or more per week

During an average week, how many times do you use **transit** when leaving the home for *personal trips*? e.g., appointments, errands, etc.

- Never
- Sometimes, but less than once per week
- 1 times per week
- 2 times per week
- 3 times per week
- 4 times per week
- 5 times or more per week

During an average week, how many times do you use **transit** when leaving your home for *social/recreational trips*? e.g., visiting friends, going to the park, etc.

- Never
- Sometimes, but less than once per week
- 1 times per week
- 2 times per week
- 3 times per week
- 4 times per week
- 5 times or more per week

During an average week, how many times do you use **transit** when *traveling with a child or older relative/neighbor*?

- Never
- Sometimes, but less than once per week
- 1 times per week
- 2 times per week
- 3 times per week
- 4 times per week
- 5 times or more per week

These questions concern your **current home**

During an average week, how many times do you **walk** or travel by **bike/scooter** for *shopping trips*?

- Never
- Sometimes, but less than once per week
- 1 times per week
- 2 times per week
- 3 times per week
- 4 times per week
- 5 times or more per week

During an average week, how many times do you **walk** or travel by **bike/scooter** for social/recreational trips? e.g. visiting friends, going to the park, etc.

- Never
- Sometimes, but less than once per week
- 1 times per week
- 2 times per week
- 3 times per week
- 4 times per week
- 5 times or more per week

During an average week, how many times do you **walk** or travel by **bike/scooter** for *personal trips*? e.g. appointments, errands, etc.

- Never
- Sometimes, but less than once per week
- 1 times per week
- 2 times per week
- 3 times per week
- 4 times per week
- 5 times or more per week

During an average week, how many times do you **walk** or travel by **bike/scooter** during a typical week for *trips with a child or elderly relative/neighbor*?

- ○ Never
- ○ Sometimes, but less than once per week
- ○ 1 times per week
- ○ 2 times per week
- ○ 3 times per week
- ○ 4 times per week
- ○ 5 times or more per week

Previous home

These questions concern your **previous residence**

Think back to the most recent place you lived in before you moved into your current home or apartment. If you can recall, what was the zip code for that place?

- ○ [ ] Enter zip
- ○ Don't know or don't recall

You said you can't recall or don't know the ZIP code of your previous residence. What is the best description you can provide? (Example: Newark, NJ)

[ ]

Thinking of your previous home or apartment, which best describes your fixed monthly housing costs (rent/mortgage, associated HOA fees, etc.), excluding variable costs like utilities (gas, electricity, parking, etc.)?

- ○ $0 - $500
- ○ $501 - $1000
- ○ $1001 - $1500
- ○ $1501 - $2000
- ○ $2001 - $2500
- ○ $2501 - $3000
- ○ More than $3000

When you moved from your previous residence to your current home, what was the reason for this move?

Select all that apply

- [ ] Could afford old home or apartment, but wanted something less expensive
- [ ] Could no longer afford old home or apartment
- [ ] Wanted a shorter commute time
- [ ] New job/school location
- [ ] Wanted better access to public transportation
- [ ] Moved out to establish my own household
- [ ] Wanted more walkable or bikeable neighborhood
- [ ] Moved in with a new roommate or spouse
- [ ] No longer able or allowed to live in prior housing (divorce, separation, or dispute; house demolition; eviction; no longer qualified for housing or dorm)
- [ ] Wanted a better house/neighborhood/school district
- [ ] Wanted to upsize
- [ ] Wanted to downsize
- [ ] Other

These questions concern your **previous home**

Did you own or rent your **previous home**?

- ○ Own
- ○ Rent
- ○ I lived with family or in someone else's home

What type of housing did you live in?

- ○ Detached Single family home
- ○ Condo or Co-op unit
- ○ Townhouse
- ○ Duplex or row-house
- ○ Other

What type of housing did you live in?

- ○ Detached Single family home
- ○ Apartment/townhome/condo in a 1-5 unit building
- ○ Apartment/townhome/condo in a 6-10 unit building
- ○ Apartment/townhome/condo in a 10+ unit building
- ○ Other

These questions concern your **previous home**

How would you describe the ease and pleasure of walking in your **previous neighborhood** to *run errands*? e.g. shopping, banking, medical etc.

- ○ Very good
- ○ Adequate
- ○ Not adequate
- ○ Very poor

Were you familiar with the public transit (bus, train, light rail) stations/stops near your **previous home**?

- ○ Yes
- ○ No

Did you feel that public transit was accessible to you for trips that started or ended at your **previous home**?

- ○ Yes, very available
- ○ Yes, somewhat available
- ○ No
- ○ Not sure

These questions concern your **previous home**

In your **previous home**, did you feel like you would be able to meet your daily needs using only public transit and walking without owning a car?

- ○ Yes, easily
- ○ Yes, with some difficulty
- ○ No
- ○ Not sure

How would you describe your parking availability at your **previous residence**?

- Free parking in a personal driveway
- Free, and guaranteed parking on-site
- Free, but not guaranteed parking on-site
- Free, and abundant on-street parking
- Free, but scarce on-street parking
- Metered on-street parking
- Paid on-site parking (daily, monthly, or yearly rate)
- Paid off-site parking (daily, monthly, or yearly rate)
- Other

You said that parking at your **previous residence** is not free. To your best estimate, how much does parking at your **previous home** cost per year?

Comparing your **current home** to your **previous home**

Do you find that in your current home you:

	More	About the same	Less
Shop locally/nearby	○	○	○
Walk	○	○	○
Ride public transit	○	○	○
Bike	○	○	○

Demography

In what year were you born?

How would you describe your gender identity?

- Male or Man
- Female or Woman
- Non-binary or Gender Fluid
- Prefer to self-describe
- Prefer not to answer

Which of the following best represents how you think of yourself?

- ○ Straight
- ○ Gay, Lesbian, Bisexual, or Queer
- ○ _____ Something else
- ○ Prefer not to say

How would you describe your race?

Select all that apply

- ☐ White
- ☐ Black or African-American
- ☐ Asian or Asian-American
- ☐ American Indian or Alaska Native
- ☐ Native Hawaiian or Pacific Islander
- ☐ Multi-racial
- ☐ _____ Other
- ☐ Prefer not to answer

Are you of Hispanic, Latino, or Spanish origin?

Select all that apply

- ☐ No, I am not
- ☐ Yes, Mexican, Mexican-American, or Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, another Hispanic, Latino, or Spanish origin
- ☐ Prefer not to answer

Including yourself, how many adults (at least 18 years old) currently live in your household at least 50% of the time?

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5 or more

How many minors (17 years or younger) live in your household at least 50% of the time?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5 or more

What is your current employment status? (select all that apply)

- ☐ Full-time employed (more than 30 hours per week)
- ☐ Part-time employed (less than 30 hours per week)
- ☐ Not working, and looking for work
- ☐ Not working, and not looking for work
- ☐ Unable to work (disability or unauthorized)
- ☐ Homemaker
- ☐ Student
- ☐ Retired

What is the highest degree or level of school that you have completed?

(if you are currently enrolled in school, please select the highest degree you have received so far)

- ○ Less than high school or equivalent
- ○ High school or equivalent (GED, etc.)
- ○ Associate's (2-year) college degree (e.g. AA, AS, etc)
- ○ Bachelor's (4-year) college degree (e.g. BS, BA, etc.)
- ○ Master's degree (MA, MS, MBA, etc.)
- ○ Professional higher degree (e.g. JDD, MD, DDS, etc.)
- ○ Doctoral degree (e.g. PhD, EdD, etc.)

What was your **combined annual household income** for 2022?

Please include income from all sources (wages, salary, property income, investment income, etc.)

- ○ less than $25,000
- ○ $25,000 - $34,999
- ○ $35,000 - $49,999
- ○ $50,000 - $74,999
- ○ $75,000 - $99,999
- ○ $100,000 - $149,999
- ○ $150,000 - $199,999
- ○ $200,000 - $249,999
- ○ $250,000 or more

Wrap up

Qualtrics Survey Software https://rutgers.yul1.qualtrics.com/Q/EditSection/Blocks/Ajax/GetSurve...

If you would like to be entered into the drawing for one of three $100 gift cards, please provide the following contact information. You will only be contacted if you win.

Name

Mailing Address

Phone Number

Email address

If you are willing to participate in a PAID follow-up interview or focus group, please enter your email below

Appendix 2. Focus Group Guide

Discussion Guide

TRANSIT USAGE IMPACTS OF NJ TRANSIT-ORIENTED DEVELOPMENTS (TODs)
FOCUS GROUP – MAY 9, 2024, 12:00pm – 1:30pm (VIRTUAL)

AGENDA

1. Welcome and Introduction	*Moderator with Participants*
2. Discussion Overview	*Moderator*
3. Discussion: Questions and Answers	*Moderator with Participants*
4. Wrap Up	*Moderator*

(90 minutes max)

WELCOME AND INTRODUCTION – STEPHANIE

First, let me begin by saying thank you. We appreciate your participation in this discussion. My name is Stephanie DiPetrillo. Andrea Lubin and I work with the Alan M. Voorhees Transportation Center at Rutgers University. We will be facilitating this discussion. *Also on the call is Ricardo Vera, who will be taking notes.*

The Voorhees Transportation Center is conducting a study funded by the New Jersey Department of Transportation. The purpose of this study is to assess the "Transit Usage Impacts of Transit-Oriented Development (or TOD) in New Jersey" and to create a means for measuring these impacts. We are trying to understand how people living in different neighborhoods in the same towns around New Jersey use—or don't use—public transportation. One important part of our study is that we wish to examine the impacts of the COVID-19 pandemic on the use of public transportation and the shopping and other behaviors of people living near transit.

Just to tell you a little bit more about transit-oriented development (TOD). TOD is often defined as higher-density mixed-use development within walking distance of transit facilities. Throughout the country, folks have been working to encourage such development – believing that it will serve certain goals. And that by adopting transit-friendly planning practices, they can help (1) create environments that support and encourage transit use and (2) sustain good places for people to live, work, and play. Examples of transit-friendly planning include improving conditions for walking and biking (rolling), working to activate street fronts, support the installation of local art, etc.

In our work, we take into account a wide range of possible effects related to this kind of development and planning. Let me emphasize that for our conversation today we are interested in discussing your lives in transit-friendly places and not just transit service to these places, though they are obviously integral to one another.

We expect you to explore a wide variety of potential impacts of TOD. We would like to hear about your experiences as well as your opinions about these and any other impacts of development near transit.

One advantage of a group discussion is that you all can contribute. The key, however, is *respect*. Please be mindful of each other's experiences and opinions, but you are welcome to disagree or offer alternate viewpoints on any topic of conversation.

STEPHANIE WILL READ CONSENT

Read consent.

Thank you. We will now start the recording.

Ice breaker – ANDREA

This section is intended to loosen the anxiety of discussion among the group, and may be tailored to the specific characteristics of group participants. The following is a representative example of one particular method for beginning a focus group conversation.

Please introduce yourself briefly with your first name and a brief memory of a noteworthy experience you've had using public transportation anywhere in the world.

Depending on how apprehensive the group seems, the moderator may go first or last. If there is an assistant moderator (and it is highly recommended), the assistant moderator should begin and the moderator can then conclude.

We now have some idea about the types of public transportation folks have used. Next, we would like to talk about the setting for that transit. What was situated near the transit station or stop where you boarded or arrived by transit?

DISCUSSION OVERVIEW

We are here today to discuss your experiences with TOD and living in or near transit-friendly places.

Discussion: Questions and Answers

Home – STEPHANIE

1. *When did you move to your current home in [specific transit-served community]?*

Follow up if needed/can't remember: Was it less than 3 years ago, 4-6 years, 7-9 years, more than 10 years ago

2. *What kind of place did you move from? [town name, type of place such as suburb, etc.]*

3. *Why did you choose to move to [specific transit-served community]?*

Possible responses if needed: location, access to transit, housing quality, housing characteristics (more room, bigger yard), quality of schools, etc.

4. *What other factors affected this choice?*

Possible responses: establishing first home, household structure change (marriage, divorce, growing family, downsizing), employment, etc. If not mentioned, ask…

   a. Was transportation a major consideration in making the choice to live where you live? If so, how?
   b. Was proximity to shopping [local retail] a consideration when choosing to live where you live?

TRAVEL – STEPHANIE

Now we like to shift a bit and talk about how you go about your daily life.

5. *What do you do in a typical [week]day? Do you go to work [at a workplace], work from home, or other?*
6. *How do you travel? How much do you walk… bike… drive… take transit?*
   a. How did this change when you moved into your current home?
7. *What influences how you travel? Why do you walk… bike… drive… or take transit?*

Possible responses: monetary costs, time costs, reliability, environmental concerns, familial needs, disability, etc.

8. *What about factors such as the weather, the time of day (or lighting conditions), need to carry, etc.? How does that change the way you think about getting around?*
9. *How is what you do now in a typical day and how you travel now different than before the pandemic?*
10. *What keeps you from using transit for some of your travel needs? What would make using transit easier for you?*

SHOPPING – ANDREA

We mentioned that we are also interested in your shopping habits.

11. *How do you typically shop to meet your daily needs? Groceries, [drug store items & prescriptions], clothing, etc.*

Possible responses: Shop online, home delivery, shop in store, etc.

   a. How did this change when you moved into your current home?

12. *Do you frequent local restaurants and bars?*

   a. If you shop in-person or go to local restaurants or bars, how do you travel there?
   b. How did this change when you moved into your current home?

13. *How is how and where you shop now different than before the pandemic?*
14. *What keeps you from using transit (or walking or biking) for some of your shopping needs? What would make using transit (or walking or biking) easier for you?*

GENERAL – ANDREA

15. *Do you feel like you would be able to meet your daily needs using only public transit, biking, and walking -- without owning a car?*

Follow up:

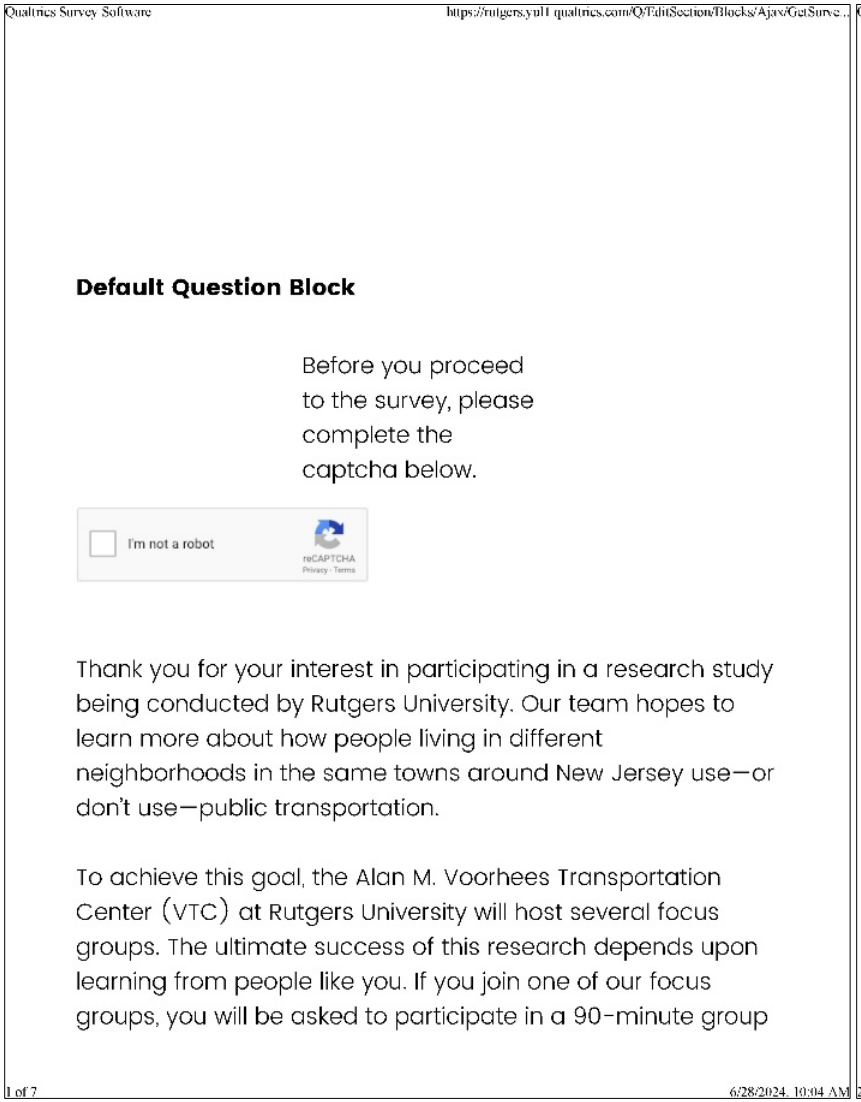
   a. Yes… why?
   b. No… why?

WRAP UP – STEPHANIE

Thank you for your participation in this group discussion.

If you have not already completed your dDocuSsign form, please do that now. This is necessary for Rutgers to purchase a gift card for you.

Appendix 3. Focus Group Recruitment Survey



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Default Question Block

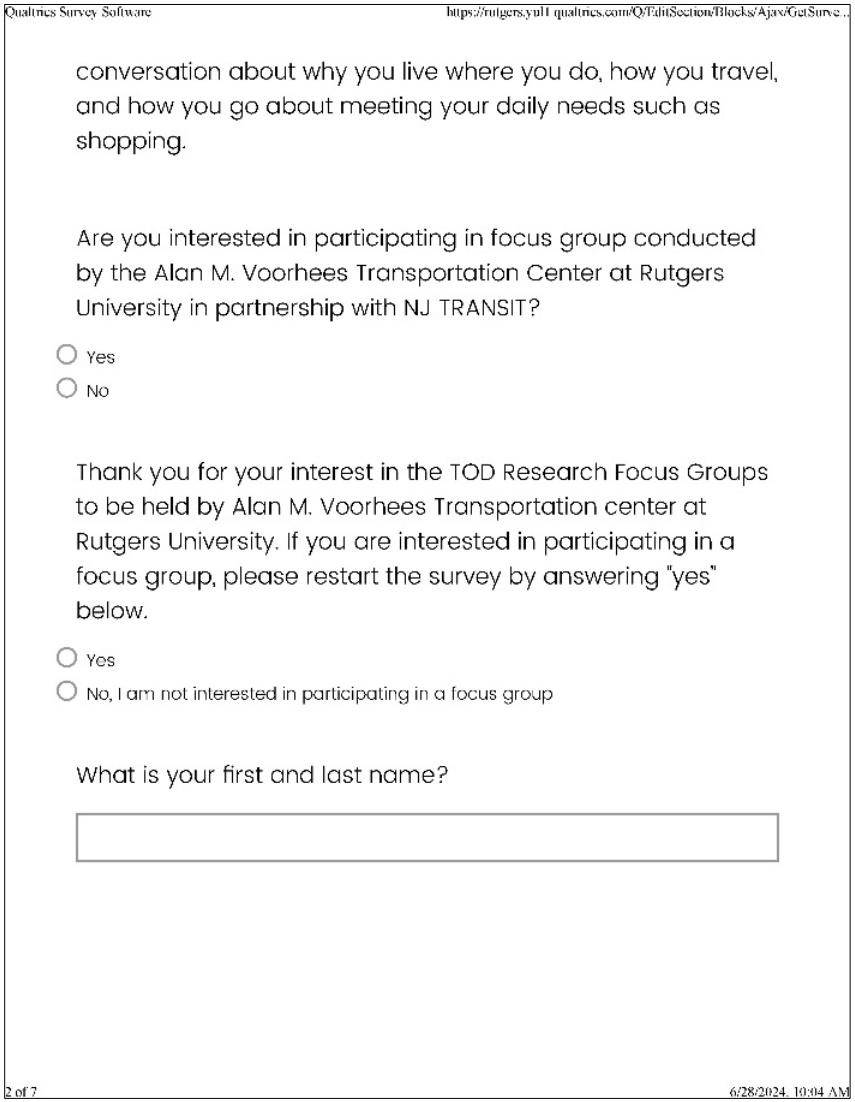
Before you proceed to the survey, please complete the captcha below.

I'm not a robot reCAPTCHA Privacy - Terms

Thank you for your interest in participating in a research study being conducted by Rutgers University. Our team hopes to learn more about how people living in different neighborhoods in the same towns around New Jersey use—or don't use—public transportation.

To achieve this goal, the Alan M. Voorhees Transportation Center (VTC) at Rutgers University will host several focus groups. The ultimate success of this research depends upon learning from people like you. If you join one of our focus groups, you will be asked to participate in a 90-minute group

1 of 7 6/28/2024, 10:04 AM



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conversation about why you live where you do, how you travel, and how you go about meeting your daily needs such as shopping.

Are you interested in participating in focus group conducted by the Alan M. Voorhees Transportation Center at Rutgers University in partnership with NJ TRANSIT?

- ○ Yes
- ○ No

Thank you for your interest in the TOD Research Focus Groups to be held by Alan M. Voorhees Transportation center at Rutgers University. If you are interested in participating in a focus group, please restart the survey by answering "yes" below.

- ○ Yes
- ○ No, I am not interested in participating in a focus group

What is your first and last name?

2 of 7 6/28/2024, 10:04 AM

Which of the following stations do you live near? Please select one.

- Bergenline Avenue Station on the Hudson Bergen Light Rail Line
- Bound Brook Station on the Raritan Valley Line
- Burlington City Station on the RiverLine Light Rail Line
- Hackensack Bus Terminal
- Pleasantville Bus Terminal
- Rahway Station on the Northeast Corridor and North Jersey Coast Lines
- I don't live near any of these transit facilities

How long have you lived in your current home? Please select one.

- Less than 5 years
- 6 to 10 years
- More than 10 years

What is your age? Please select one.

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65 or over

How would you describe your gender?

- Male or Man
- Female or Women
- Non-Binary or Gender Fluid
- Prefer not to answer
- [ ] Prefer to self-describe

What was your combined annual household income in 2022?

- Less than $25,000
- $25,000 - $34,999
- $35,000 - $49,999
- $50,000 - $74,999
- $100,000 - $149,999
- $150,000 - $199,999
- $200,000 and above

Are you of Hispanic, Latino, or Spanish origin? Select all that apply.

- [ ] No, I am not.
- [ ] Yes, Mexican, Mexican-American, or Chicano
- [ ] Yes, Puerto Rican
- [ ] Yes, Cuban
- [ ] Yes, another Hispanic, Latino, or Spanish origin

How would you describe your race? Select all that apply.

- ☐ White
- ☐ Black or African American
- ☐ Asian or Asian-American
- ☐ American Indian or Alaska Native
- ☐ Native Hawaiian or Pacific Islander
- ☐ Other (please specify) _____

What is the highest degree or level of school that you have completed? (If you are currently enrolled in school, please select the highest degree you have received so far.)

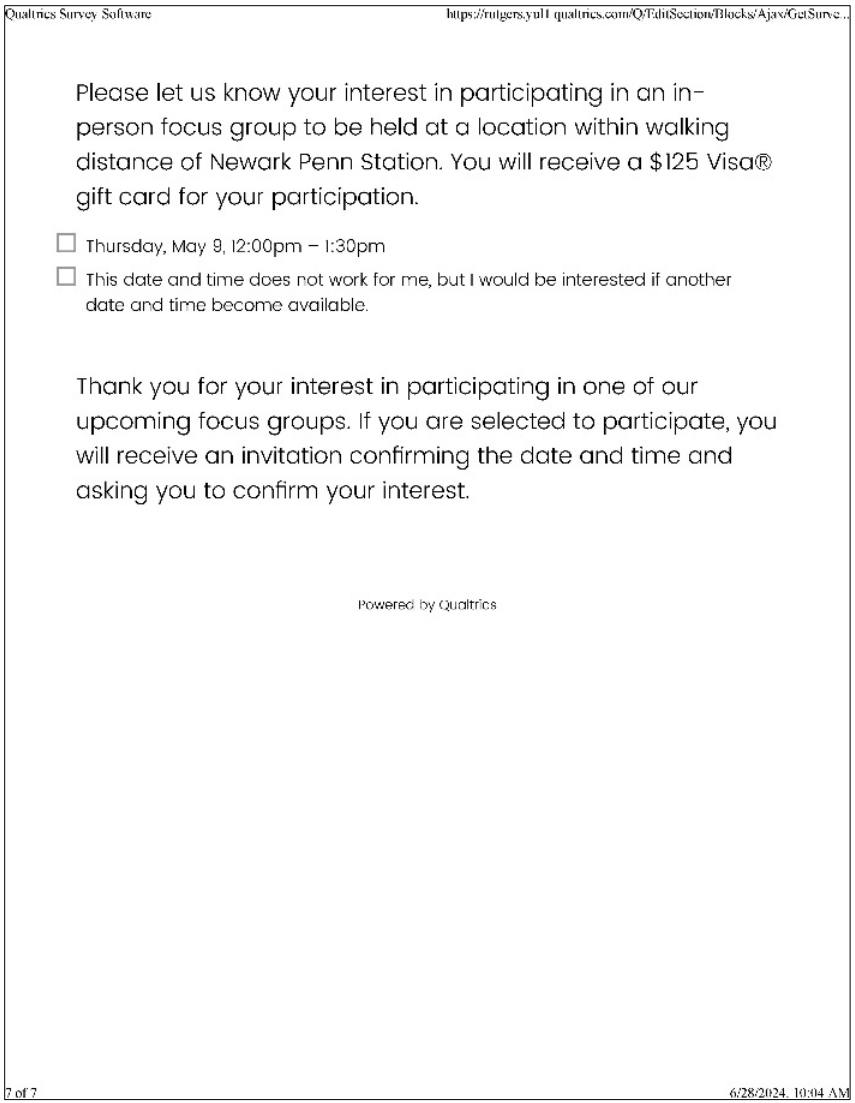
- ○ Less than high school or equivalent
- ○ High school or equivalent (GED, etc.)
- ○ Associate's (2-year) college degree (e.g. AA, AS)
- ○ Bachelor's (4-year) college degree (e.g. BS, BA)
- ○ Master's degree (e.g. MA, MS)
- ○ Professional higher degree (e.g. MD, JDD, DDS)
- ○ Doctoral degree (e.g. PhD, EdD)

What is your employment status? Select all that apply.

- ☐ Full-time employed (more than 30 hours per week)
- ☐ Part-time employed (less than 30 hours per week)
- ☐ Not working and looking for work
- ☐ Not working and not looking for work
- ☐ Unable to work (e.g. disability, unauthorized)
- ☐ Homemaker
- ☐ Student
- ☐ Retired

Please let us know your availability to participate in a 90-minute online focus group via Zoom. You will receive a $75 Visa® gift card for your participation. Select all that apply.

- ☐ Friday, April 12, 2024, 12pm – 1:30pm
- ☐ Wednesday, April 17, 6:00pm – 7:30pm
- ☐ Thursday, April 18, 6:00pm – 7:30pm
- ☐ Wednesday, April 25, 6:00pm – 7:30pm
- ☐ None of these dates or times work for me, but I would be interested if other dates and times become available.


Qualtrics Survey Software
https://rutgers.yul1.qualtrics.com/Q/EditSection/Blocks/Ajax/GetSurve...
Please let us know your interest in participating in an in-person focus group to be held at a location within walking distance of Newark Penn Station. You will receive a $125 Visa® gift card for your participation.
Thursday, May 9, 12:00pm – 1:30pm
This date and time does not work for me, but I would be interested if another date and time become available.
Thank you for your interest in participating in one of our upcoming focus groups. If you are selected to participate, you will receive an invitation confirming the date and time and asking you to confirm your interest.
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