

Spend More, Spend Less, or Stay the Course? Public Preferences for Transportation Investments in the United States

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ABSTRACT

Objectives: Understanding what people believe should receive greater, unchanged, or reduced transportation funding can inform policy, planning, and ballot measures. This study examines preferences for increasing or decreasing spending across multiple investment domains and identifies how mobility circumstances, latent orientations, and experienced transportation deficiencies shape preferred funding level changes.

Methods: Data are drawn from 8,567 adults who responded to Wave 2 of the Transportation Heartbeat of America survey. The survey captures preferences to substantially decrease, slightly decrease, maintain, slightly increase, or substantially increase funding for seven transportation priorities including safety infrastructure and technologies, safety management and enforcement, congestion relief, new roads and bridges, road repairs and maintenance, public transportation, and active-mobility infrastructure. A Generalized Heterogeneous Data Model jointly estimates these outcomes with four correlated latent constructs: Sustainable Travel Preference, Congestion Burden, Auto-Oriented Lifestyle, and Safety Sensitivity.

Findings: Respondents generally favored maintaining or increasing funding across a portfolio of priorities. Road repairs and maintenance received the strongest support for increased funding, with 75.6% favoring an increase; reductions were supported by no more than 10.4% of the sample in any domain. Safety Sensitivity was associated with a greater propensity to support higher funding across all seven domains. Sustainable Travel Preference increased support for higher public transportation and active-mobility funding, whereas Auto-Oriented Lifestyle reduced it. Congestion Burden was associated primarily with higher congestion-relief funding, but not new-road spending. Socioeconomic and travel characteristics produced selective, domain-specific heterogeneity. Experienced transportation deficiencies corresponded to higher funding support in the domains positioned to address them.

Novelty: The study provides a nationwide analysis of transportation funding preferences, integrating multiple priority outcomes, latent mobility orientations, and lived transportation experiences within one behavioral framework.

Practical Applications: The findings can help agencies assemble investment portfolios that reflect public sentiment while balancing technical needs, fiscal constraints, and long-term societal goals.

1. INTRODUCTION AND MOTIVATION

What do people care about when they think about transportation investment priorities? This question deserves careful consideration as decision-makers weigh funding priorities in the years ahead. Transportation policy should reflect both broad societal goals and the priorities of people who rely on the system to access goods, services, and opportunities. Investments may advance safety, accessibility, reliability, resilience, economic vitality, system preservation, and quality of life (U.S. Congress 2023). Understanding what people value, the problems they experience, and the improvements they believe would enhance their lives can therefore inform public decision-making.

Public sentiment should not be the sole determinant of transportation policy. Decision-makers must also consider technical evidence, fiscal constraints, and long-term system needs. Nevertheless, public priorities remain important because transportation investments rely largely on public revenues and are advanced by institutions that depend on sustained public confidence. Programs that respond to recognizable needs may be more likely to achieve legitimacy and political durability (Hannay and Wachs 2007; Huber and Wicki 2021). This issue is especially timely as the United States considers the next generation of federal transportation legislation following the Infrastructure Investment and Jobs Act (House T&I Committee 2026).

Establishing transportation funding priorities is challenging because transportation systems serve many functions simultaneously. Federal, state, and local agencies must distribute limited resources among safety improvements, congestion relief, new roads and bridges, repair and maintenance, public transportation, and walking and bicycling infrastructure. Each domain addresses a different aspect of system performance while drawing from scarce public resources. The policy challenge is therefore not simply whether transportation warrants investment, but how the public believes the investment portfolio should be composed.

Public preferences may not conform to a simple roadway-versus-transit divide. The same person may support highway maintenance, traffic safety, public transportation, and walking and bicycling facilities because each addresses a different need or public benefit, while assigning different levels of importance to each investment (Agrawal and Nixon 2023, 2025). Funding priorities may therefore be better understood as multidimensional judgments than as choices among mutually exclusive alternatives (Beck et al. 2026).

Previous research suggests that support for transportation funding is closely connected to what an investment is expected to accomplish. Support for local transportation sales taxes varies with project proximity and expenditure-package composition (Hannay and Wachs 2007), while national evidence indicates greater support when revenues are dedicated to widely valued purposes, particularly maintenance and safety (Agrawal and Nixon 2025). Expected effectiveness, personal cost, institutional trust, and the distribution of burdens also shape evaluations of transportation taxes and pricing (Kallbekken et al. 2013; Huber and Wicki 2021). Support may therefore depend not only on how much is spent, but also on how revenues are used and whether the investment addresses a recognizable need.

Personal mobility circumstances may contribute to these judgments, but a narrow self-interest explanation is unlikely to be sufficient. People may support investments that benefit the modes they use while also valuing broader community or system benefits. Support for public transportation spending, for example, may reflect perceived benefits such as congestion reduction and improved mobility options even among infrequent riders (Manville and Cummins 2015), and voters may consider regional consequences when immediate interests differ from expected public benefits (Palm and Handy 2018). Extensive automobile use also need not imply opposition to

transit or active-mobility investments; exposure to congestion may increase appreciation for improvements across modes (Cradock et al. 2018).

Broader mobility orientations also shape priorities. Automobile use may reflect practical necessity or a broader preference for vehicle ownership and low-density living (Steg 2005; Magassy et al. 2022). Favorable views of walking, bicycling, and public transportation may reflect a general sustainable travel preference rather than attachment to one mode (Anable 2005; Molin et al. 2016). Residential context, travel behavior, and attitudes may influence priorities through direct and indirect pathways (De Vos et al. 2021). Congestion burden may increase support for relief without identifying a specific preferred remedy (Börjesson et al. 2015), while safety sensitivity may shape support for physical improvements and safety enforcement (Fell 2019).

Everyday transportation experiences may create a more targeted basis for funding support. Poor road conditions, aggressive driving, missing walking or bicycling facilities, and unsafe transit access may each increase support for the corresponding corrective transportation investments. Thus, perceived infrastructure conditions may be more strongly associated with funding support than objective measures alone (Fogg et al. 2020), while dissatisfaction with transit service or coverage may signal inadequate investment (Calvo-Poyo et al. 2020). Attitudes may also evolve as people experience the consequences of past policies and investments (Schuitema et al. 2010). These considerations suggest that funding judgments are layered. Personal and household circumstances shape mobility options and constraints; broader orientations influence how conditions are interpreted across domains, and specific deficiencies may generate targeted support for corrective investments. Priorities may therefore reflect both immediate mobility needs and broader beliefs about community well-being and quality of life (Manville and Cummins 2015).

Despite a substantial body of research on transportation policy support, several gaps remain. Many studies examine a single funding instrument, mode, policy proposal, or geographic area. Fewer consider how individuals evaluate several major funding domains simultaneously, and separate analyses may overlook connections arising from shared mobility circumstances, orientations, and experiences. Individual and household attributes may also influence support directly and indirectly through latent orientations. A joint behavioral framework is therefore useful for examining multiple funding priorities (Moeinaddini et al. 2026).

This study addresses these gaps using data from 8,567 adults in Wave 2 of the Transportation Heartbeat of America survey. Respondents indicated whether funding should decrease, remain at current levels, or increase across seven domains: safety infrastructure and technologies, safety management and enforcement, congestion relief, new roads and bridges, road repairs and maintenance, public transportation, and active-mobility infrastructure. A Generalized Heterogeneous Data Model jointly represents these seven ordered outcomes and four correlated latent constructs: Sustainable Travel Preference, Congestion Burden, Auto-Oriented Lifestyle, and Safety Sensitivity. The framework captures direct and latent factor mediated associations while recognizing that the same individual may support multiple transportation investment priorities.

The analysis addresses three questions. How do Americans prioritize transportation funding across major investment domains? How are these priorities associated with mobility circumstances, residential context, and broader transportation orientations? Do experiences with specific transportation deficiencies correspond to greater support for investments that may address them? Examining these questions jointly provides a national portrait of public priorities and may help inform funding portfolios that advance societal goals while remaining attentive to the experiences and aspirations of the people that the transportation system serves.

The remainder of this paper is organized as follows. Section 2 describes the survey, analytical sample, funding outcomes, and attitudinal indicators. Section 3 presents the modeling framework. Section 4 discusses the model estimation results. Section 5 summarizes the principal findings, policy implications, study limitations, and directions for future research.

2. DATA DESCRIPTION

This section describes the survey, the analysis sample, and the exogenous, endogenous, and attitudinal variables used in the study. The survey design and sample characteristics are presented first, followed by the transportation funding outcomes and attitudinal indicators.

2.1. Survey Overview and Sample Characteristics

Data for this study are drawn from Wave 2 of the Transportation Heartbeat of America survey, a national survey administered between February and March 2026. The survey was conducted using an online panel assembled by a commercial survey firm and was open to adults aged 18 years or older residing in the United States. The survey collected information on transportation attitudes and preferences, current travel behavior, transportation investment priorities, experiences with unsafe or inadequate transportation conditions, and respondent and household characteristics. Several attention checks and quality control questions were included to identify inattentive or inconsistent responses.

A quota-based sampling approach was used to obtain substantial representation across demographic and geographic groups. Quotas were specified by gender, age, race, educational attainment, household income, urban or rural residence, and Census division. The resulting sample is not intended to constitute a probability-based nationally representative sample, but it captures considerable variation across population groups and geographic contexts. After applying data-quality and completeness criteria, the final sample included 8,567 respondents.

Built-environment characteristics were appended to each survey record based on the respondent's residential ZIP code. These measures were obtained from the U.S. Environmental Protection Agency Smart Location Database and included attributes related to land-use mix, intersection and pedestrian-network density, and access to transit and destinations (Chapman et al. 2021). The combined survey data and spatial data provide information on the personal, household, mobility, and residential circumstances that may be associated with transportation funding priorities.

Table 1 presents the principal socioeconomic and demographic characteristics of the sample and corresponding American Community Survey (ACS) benchmarks. The sample aligns reasonably well with national distributions for several core characteristics. Females account for 52.9% of respondents, compared with 51.0% in the ACS, and Hispanic respondents account for 19.3%, compared with 18.1%. The sample shares for White and Asian or Pacific Islander respondents are also close to national benchmarks, although Black respondents are somewhat overrepresented. Approximately 75.6% of the sample resides in an urban or suburban area, compared with 80.0% nationally.

Several differences are also evident. Adults aged 65 years or older constitute 27.4% of the sample, while adults younger than 35 years are underrepresented. Consistent with this age profile, 50.4% of respondents are classified as non-workers, a category that includes retirees, students, homemakers, and volunteers. The sample also includes somewhat larger shares of respondents with graduate degrees and smaller shares with a high school education or less.

TABLE 1 Socio-Economic and Demographic Characteristics of the Sample

Individual Characteristics (N=8,567)			Household Characteristics (N=8,567)		
Variable	Sample (%)	ACS (%)	Variable	Sample (%)	ACS (%)
Gender			Annual household income		
Female	52.9	51.0	Less than \$25,000	18.9	14.4
Male	47.1	49.0	\$25,000 to \$49,999	20.3	16.2
Age category			\$50,000 to \$99,999	26.5	28.2
18 to 24 years	11.4	11.7	\$100,000 to \$149,999	19.7	17.8
25 to 34 years	10.6	17.3	\$150,000 to \$199,999	9.5	9.7
35 to 44 years	21.0	17.2	\$200,000 or more	5.0	13.7
45 to 54 years	16.1	15.3	Household size		
55 to 64 years	13.6	15.6	One	21.2	28.9
65 years or older	27.4	22.9	Two	34.1	34.2
Employment status			Three or more	44.7	37.0
Full-time worker	40.3	44.4	Housing unit type		
Part-time worker	9.4	21.9	Stand-alone home	68.0	62.2
Non-worker	50.4	33.7	Attached home/apartment	26.8	32.7
Educational attainment			Other	5.3	5.2
High school or less	32.2	37.4	Homeownership status		
Some college or technical school	32.5	28.5	Own	61.2	65.3
Bachelor's degree(s)	17.3	21.0	Rent	33.8	34.7
Graduate degree(s)	18.1	13.1	Other	5.0	0.0
Race			Vehicle ownership		
Asian or Pacific Islander	6.7	6.7	Zero	10.7	8.5
Black	16.0	11.8	One	44.0	33.2
White	63.3	62.1	Two	33.0	36.3
Other	14.0	19.4	Three or more	12.2	22.0
Ethnicity			Location*		
Hispanic	19.3	18.1	Urban	75.6	80.0
Non-Hispanic	80.7	81.9	Rural	24.4	20.0

Note: (*) The location values reported in the ACS column are drawn from the 2020 Decennial Census (Table P2)

Household income spans the full range of categories, although individuals living in households earning less than \$50,000 are overrepresented and those earning \$200,000 or more are underrepresented. Sample households in which respondents reside also tend to be larger than the national average. About 44.7% include three or more members, while 21.2% are single-person households. Housing tenure and structure are generally similar to national patterns, with 68.0% residing in stand-alone homes and 61.2% owning their residence. Vehicle ownership is somewhat lower than national benchmarks. Approximately 10.7% of respondents report living in households with no vehicle, 44.0% live in one vehicle households, and 12.2% live in households with three or more vehicles. In addition, 36.9% of individuals reside in households that are vehicle-deficient, meaning that the number of household vehicles is smaller than the number of licensed drivers. This variation is particularly relevant because access to vehicles and alternative transportation options may shape views about the relative importance of roadway, public transportation, and active-mobility investments. Overall, although the sample differs from national benchmarks on selected characteristics, it contains substantial socioeconomic, mobility, and geographic variation for examining heterogeneity in transportation funding priorities.

2.2. Transportation Funding Priority Outcomes

The primary endogenous variables were derived from a survey question asking respondents how transportation funding in the United States should be prioritized across a range of investment categories. For each category, respondents indicated whether funding should be substantially decreased, slightly decreased, maintained at current levels, slightly increased, or substantially increased. To discourage respondents from supporting increases indiscriminately, the question noted that increasing funding across many areas without corresponding reductions could result in higher taxes or transportation fees.

The survey elicited responses for 12 transportation funding categories. The analysis focuses on investments associated with the everyday surface transportation system. Accordingly, intercity rail, air transportation infrastructure, and ports and waterways were excluded from this research effort. The remaining nine categories were consolidated into seven outcomes. Repairs and maintenance of highways and bridges was combined with repairs and maintenance of local roads, while pedestrian and bicycle infrastructure were combined into a single active mobility category. For each combined outcome, the maximum of the two component ratings was used. This approach preserves the respondent's strongest expressed preference within the broader investment domain rather than diluting it through averaging.

The resulting outcomes capture funding priorities for: (1) safety infrastructure and technologies, (2) safety management and enforcement, (3) congestion relief, (4) construction of new roads and bridges, (5) road repairs and maintenance, (6) public transportation, and (7) active-mobility infrastructure. All 8,567 respondents provided valid responses for the seven outcomes. Each variable retains its original five-level ordinal form and is modeled accordingly.

Figure 1 presents the distribution of funding preferences. Across all seven domains, respondents were substantially more likely to favor increased rather than decreased funding. The share supporting a slight or substantial increase ranges from 46.4% for public transportation to 75.6% for road repairs and maintenance. Conversely, the share favoring any reduction ranges from 3.1% for repairs and maintenance to 10.4% for public transportation. Thus, even in the domain receiving the least support for expansion, respondents favoring increased funding outnumber those favoring reductions by more than four to one.

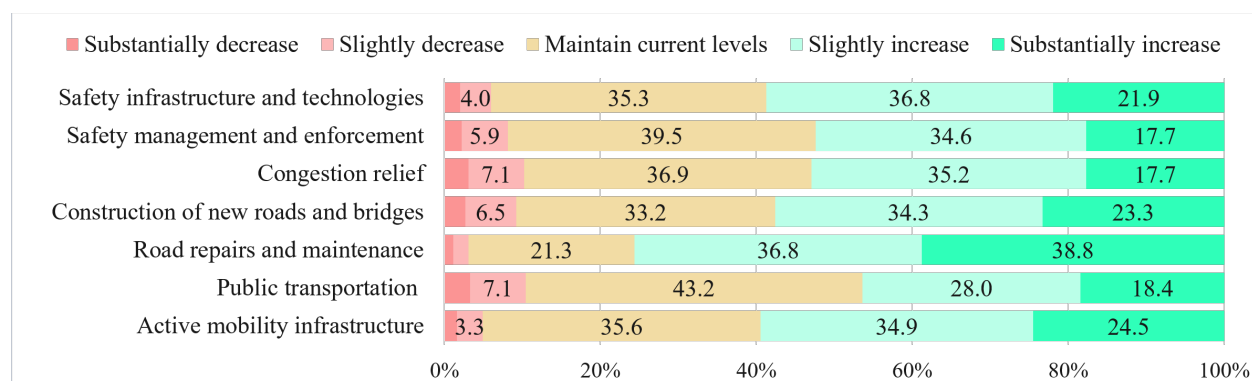


Figure 1 Distribution of Main Outcome Variables (N = 8,567)

Road repairs and maintenance emerge as the clearest funding priority. More than three-quarters of respondents favor an increase, including 38.8% who support a substantial increase. This pattern indicates particularly strong public concern for preserving and restoring existing infrastructure. Active mobility infrastructure receives the next highest level of support for

increased funding at 59.4%, followed closely by safety infrastructure and technologies at 58.7% and construction of new roads and bridges at 57.6%. A slight majority also favors additional funding for congestion relief and safety management and enforcement, at 52.9% and 52.3%, respectively. Public transportation exhibits the most mixed distribution. Although respondents favoring increased funding constitute the largest combined group at 46.4%, it is found that 43.2% prefer maintaining current funding levels and 10.4% favor a reduction. Public transportation therefore appears to be the most contested of the seven investment domains, although support for increasing funding still considerably exceeds support for decreasing it.

2.3. Attitudinal Indicators and Latent Constructs

The model incorporates attitudinal indicators intended to capture broad mobility orientations that may shape transportation funding priorities beyond socioeconomic characteristics, travel behavior, and residential context. The indicators were drawn from survey questions addressing travel and lifestyle preferences, transportation spending, enforcement, and safety. Responses were recorded on a five-point Likert scale ranging from “Strongly disagree” to “Strongly agree.” Candidate constructs were identified through exploratory factor analysis and refined through confirmatory factor analysis, with the final specification guided by statistical significance, behavioral coherence, relevance to the funding outcomes, and interpretability.

Four latent constructs emerged from this process: Sustainable Travel Preference, Congestion Burden, Auto-Oriented Lifestyle, and Safety Sensitivity. Their component indicators and response distributions are presented in Figure 2. The figure reveals substantial variation across the measures. Some attitudes, such as the importance of automobile ownership and willingness to adjust travel schedules to avoid congestion, receive broad agreement. Others, particularly the attractiveness of public transportation as a personal travel option, are more divided. This variation suggests that respondents with similar observed mobility circumstances may nevertheless hold different views about transportation needs and investment priorities.

Sustainable Travel Preference captures a general inclination toward less-polluting and active forms of travel rather than attachment to a single mode. Its indicators reflect a desire to use walking, bicycling, and public transportation as much as possible. About 39% agree that they use less-polluting transportation whenever possible, while 46% report making as many trips as possible by walking or bicycling. Views of public transportation are less favorable; 34% agree that they like the idea of transit as a personal travel option, whereas 46% disagree. The construct therefore represents a broader orientation toward travel alternatives that may be associated with support for public transportation and active mobility infrastructure.

Congestion Burden reflects the extent to which traffic congestion is experienced as a meaningful problem in daily travel. Nearly 67% report adjusting their schedules to avoid congestion, while about 40% agree that congestion is a major problem during their daily travel; a nearly equal share disagrees with the latter statement. The construct is expected to be most closely associated with support for congestion relief, although it may also relate to roadway expansion, operations, maintenance, or alternative travel options. Recognizing congestion as a problem does not necessarily indicate support for any one remedy (Börjesson et al., 2015).

Auto-Oriented Lifestyle captures a broader orientation toward automobile ownership, automobile-based mobility, and lower-density residential preferences. Approximately 71% agree that owning a car is important, and nearly 78% report being satisfied with their current transportation options. Views concerning residential location are more mixed, with 48% preferring a spacious home even when it is farther from destinations or public transportation. Automobile

orientation may reflect both practical dependence and broader lifestyle or residential preferences (Steg 2005; Magassy et al. 2022). The construct may therefore explain variation in roadway-oriented funding support that cannot be captured fully by vehicle ownership or driving status alone.

Safety Sensitivity represents the extent to which respondents place crash reduction and safety at the center of transportation policy. About 67% support greater use of cameras to identify unsafe driving, 59.3% agree that lower speed limits are worthwhile when they improve safety, and about 55% believe transportation investments should prioritize crash reduction over expansion of roads or public transportation. The construct thus captures a willingness to accept some inconvenience or restriction in exchange for broader safety benefits (Fell 2019). It is expected to be especially relevant to prioritization of funding for safety infrastructure and technologies, as well as safety management and enforcement. Overall, the four constructs provide behaviorally meaningful representations of the orientations through which respondents may evaluate transportation needs and funding priorities.

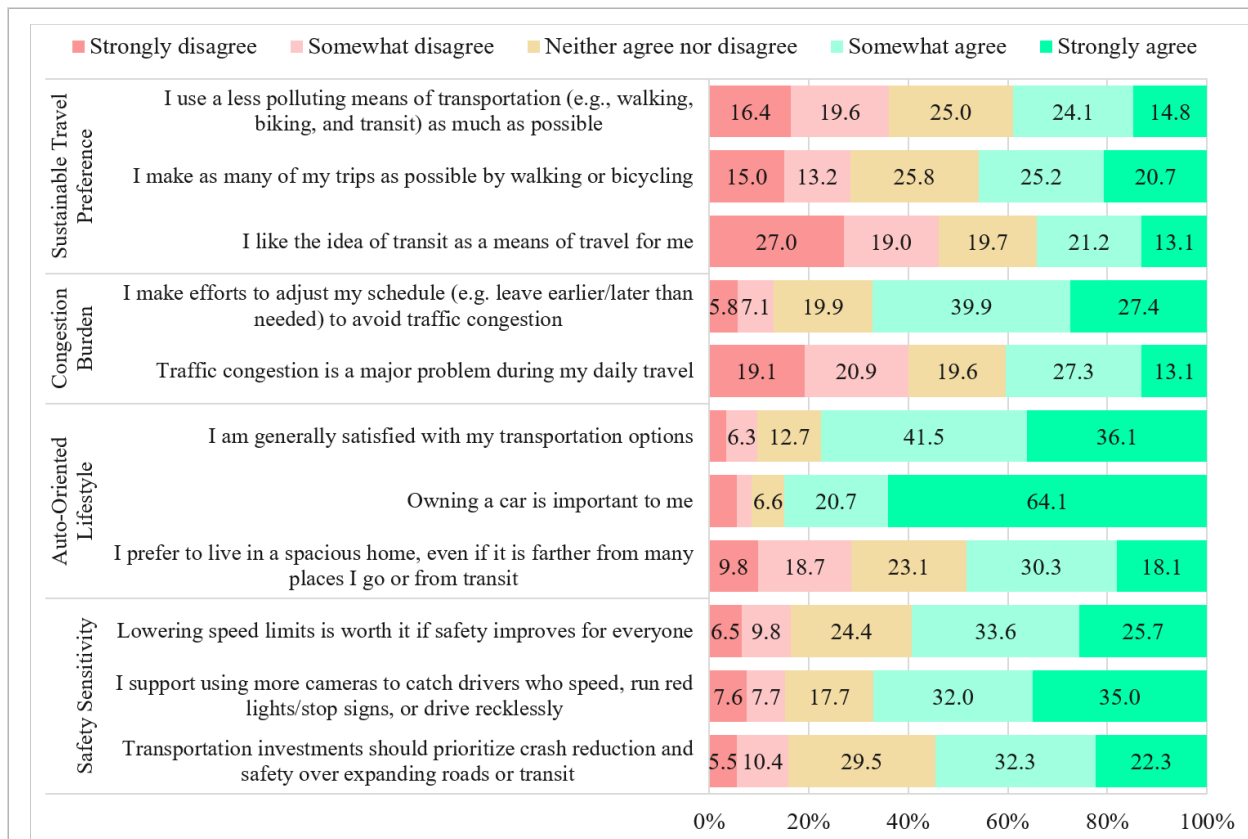


Figure 2. Latent Constructs and Attitudinal Indicators (N = 8,567)

3. MODELING FRAMEWORK

A generalized heterogeneous data model (GHDM) is used to examine how transportation funding priorities are formed across the seven investment categories considered in this study. The framework is appropriate because respondents evaluated several investment options, and these judgments may be connected through common mobility circumstances and broader transportation orientations. For example, concern about safety may shape support for both safety infrastructure and enforcement, while congestion burden may influence support for roadway improvements, public transportation, or multiple strategies simultaneously. Estimating the funding priorities

funding priorities outcomes jointly therefore provides a more complete representation than treating each response as an isolated judgment.

Figure 3 presents a conceptual overview of the model. The seven endogenous outcomes shown on the right correspond to seven funding priorities. Each outcome retains its five-level ordered form, ranging from substantially decreasing funding to substantially increasing funding. The observed response is viewed as reflecting an underlying propensity to support greater funding, with estimated thresholds mapping that propensity to the five response categories.

The explanatory variables shown on the left side of Figure 3 include individual and household characteristics, travel and mobility attributes, residential and built-environment conditions, and experiences with transportation system deficiencies. These variables may influence funding priorities through two pathways. First, they may be directly associated with one or more funding outcomes. Second, they may operate indirectly through the four stochastic latent constructs shown in the center of the figure: Sustainable Travel Preference, Congestion Burden, Auto-Oriented Lifestyle, and Safety Sensitivity.

The latent constructs are inferred from the attitudinal indicators described previously. The GHDM jointly estimates structural equations linking observed characteristics to the constructs, measurement equations connecting the constructs to their indicators, and ordered-response equations relating the constructs and observed characteristics to the seven funding outcomes. This integrated approach accounts for uncertainty in the measurement of the latent orientations rather than separately treating calculated factor scores as error-free explanatory variables.

Distinguishing direct and indirect pathways is important for interpretation. Respondents with similar socioeconomic and travel characteristics may express different funding priorities because they hold different underlying mobility orientations. An observed characteristic may also influence an outcome through multiple pathways that reinforce or offset one another. Urban residence, for example, may be directly associated with support for public transportation while also shaping a broader preference for walking, bicycling, and transit. The model permits these relationships to be considered together.

The four latent constructs are allowed to be correlated, recognizing that mobility orientations may coexist and interact. A stronger preference for walking, bicycling, and public transportation may be associated with weaker automobile orientation or greater safety sensitivity. Similarly, congestion burden may be related to several orientations depending on how individuals experience and interpret transportation conditions. These correlations, together with common observed determinants, allow the model to engender shared unobserved effects simultaneously influencing the seven funding priorities.

Overall, the framework enables transportation funding priorities to be examined as a connected portfolio of judgments. It helps identify the factors associated with different investment priorities, the latent constructs that shape support across priorities, and whether lived transportation deficiencies correspond to greater support for investments positioned to address those deficiencies.

The complete mathematical formulation is omitted in the interest of brevity. The formulation is notation-intensive and is not essential to the objectives of this paper, which is to apply the methodology to understand how observed circumstances, latent mobility orientations, and transportation experiences jointly shape funding priorities when considered together rather than in isolation. Readers interested in the full methodological details are referred to Bhat (2015).

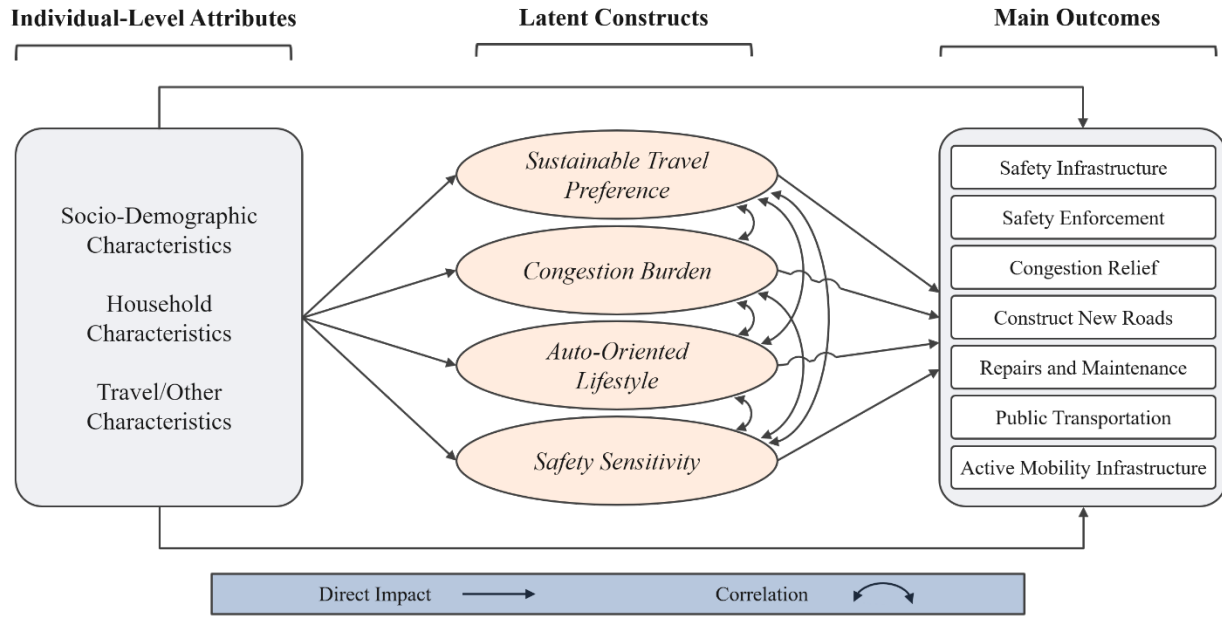


Figure 3. Model Framework

4. MODEL ESTIMATION RESULTS

This section presents the model estimation results in detail. The discussion begins with the latent construct component, which relates individual, household, mobility, and residential characteristics to the four underlying orientations – Sustainable Travel Preference, Congestion Burden, Auto-Oriented Lifestyle, and Safety Sensitivity – and reports the corresponding factor loadings for the attitudinal indicators. The discussion then turns to the seven transportation funding outcomes, focusing on the direct effects of observed characteristics, the influence of the latent constructs, and the ways in which these pathways jointly shape support across the investment portfolio.

4.1. Latent Construct Model Component

Table 2 presents the structural and measurement equation components of the four latent constructs. In the bottom half of Table 2, all attitudinal indicators load positively and significantly on their intended constructs. The results support the behavioral relevance of Sustainable Travel Preference, Congestion Burden, Auto-Oriented Lifestyle, and Safety Sensitivity as distinct orientations relevant to shaping transportation funding priorities.

Male respondents exhibit higher Sustainable Travel Preference, whereas female respondents exhibit lower Auto-Oriented Lifestyle. Adults aged 65 years or older show lower Sustainable Travel Preference and Congestion Burden, possibly reflecting less routine commuting and lower perceived feasibility of alternative modes. Black respondents exhibit higher Sustainable Travel Preference, perhaps reflecting the greater role of public transportation in supporting mobility among Black households (Bunten et al. 2024), while Hispanic respondents exhibit higher Sustainable Travel Preference and Congestion Burden. Respondents with a bachelor's degree or higher show stronger Sustainable Travel Preference, Congestion Burden, and Safety Sensitivity; workers also exhibit higher Sustainable Travel Preference and Congestion Burden. Current drivers, by contrast, show substantially lower Sustainable Travel Preference, consistent with their auto-oriented mobility patterns.

TABLE 2 Determinants of Latent Variables and Loadings on Indicators (N = 8,567)

Explanatory Variables (base category)		Structural Equations Model Component							
		Sustainable Travel Prefer		Congestion Burden		Auto-Oriented Lifestyle		Safety Sensitivity	
		Coef	t-stat	Coef	t-stat	Coef	t-stat	Coef	t-stat
Individual characteristics									
Gender (*)	Male	0.26	9.90	—		—		—	
	Female	—		—		-0.21	-5.73	—	
Age (*)	25 to 34 years	—		—		0.11	1.92	—	
	65 years or older	-0.38	-10.13	-0.53	-9.23	—		—	
Race (not Black)	Black	0.14	4.03	—		—		—	
Ethnicity (not Hispanic)	Hispanic	0.18	5.21	0.15	2.95	—		—	
Education (less than Bachelor's)	Bachelor's or higher	0.35	11.16	0.14	2.97	—		0.24	10.93
Employment (non-worker)	Worker	0.36	11.41	0.20	4.42	—		—	
Currently drives (no)	Yes	-0.72	-19.05	—		—		—	
Driving disability (no)	Yes	0.25	8.00	0.23	4.92	-0.43	-10.29	0.08	4.42
Household attributes									
Household income (<\$100,000)	\$100,000 or more	—		0.13	2.79	0.35	7.90	—	
Household size (<3)	Three or more	—		0.14	2.67	—		—	
Vehicle ownership (<3)	Three or more	—		—		—		-0.24	-12.29
Vehicle availability (sufficient)	Deficient	0.28	10.73	—		—		—	
Child presence (no)	Yes	0.18	5.27	0.16	2.72	0.36	8.27	0.30	13.25
Housing unit (not stand-alone)	Stand-alone home	-0.26	-9.10	—		0.27	6.15	—	
Homeownership (not own)	Own	—		—		0.51	11.32	—	
Location (not urban)	Urban	0.48	15.67	0.24	5.45	—		0.30	15.35
Correlations between latent constructs									
Sustainable Travel Preference (STP)		1.00	—	0.14	2.04	-0.27	-4.80	0.17	6.08
Congestion Burden (CB)				1.00	—	0.08	2.66	-0.06	-2.40
Auto-Oriented Lifestyle (AOL)						1.00	—	0.11	2.78
Attitudinal Indicators[^]		Loadings of Latent Variables on Indicators (Measurement Equations Model Component)							
I use a less polluting means of transportation (e.g., walking, biking, and transit) as much as possible		0.71	31.78	—		—		—	
I make as many of my trips as possible by walking or bicycling		0.73	30.64	—		—		—	
I like the idea of transit as a means of travel for me		0.71	38.42	—		—		—	
I make efforts to adjust my schedule (e.g. leave earlier/later than needed) to avoid traffic congestion		—		0.48	26.32	—		—	
Traffic congestion is a major issue in my daily travel		—		0.70	14.49	—		—	
I am generally satisfied with transportation options		—		—		0.39	20.71	—	
Owning a car is important to me		—		—		0.70	24.21	—	
I prefer to live in a spacious home, even if it is farther from many places I go or from transit		—		—		0.48	26.35	—	
I support using more cameras to catch drivers who speed, run red lights/stop signs, or drive recklessly		—		—		—		0.51	25.06
Transportation investments should prioritize crash reduction and safety over expanding roads or transit		—		—		—		0.62	23.20
Lowering speed limits is worth it if safety improves for everyone		—		—		—		0.62	21.81

Note: Coef = coefficient; “—” = not applicable; (*) Base category is not identical across the model equations and corresponds to all omitted categories. (^) Some attitudinal statements have been slightly re-worded for presentation purposes while preserving their intended meaning.

Respondents reporting a driving disability exhibit higher Sustainable Travel Preference, Congestion Burden, and Safety Sensitivity, but markedly lower Auto-Oriented Lifestyle. When driving is constrained, alternative travel options and safe, reliable transportation may become more important for maintaining mobility. The higher Congestion Burden also suggests that congestion can affect the reliability and comfort experienced by individuals with mobility limitations.

Household and residential characteristics show similar patterns. Higher-income respondents exhibit greater Congestion Burden and Auto-Oriented Lifestyle; larger households show higher Congestion Burden. Vehicle-deficient households exhibit stronger Sustainable Travel Preference, consistent with the greater importance of public transportation, walking, and bicycling when household vehicles are insufficient. Households owning three or more vehicles exhibit lower Safety Sensitivity. Respondents with children show higher values on all four constructs, indicating that their mobility may simultaneously involve automobile reliance, interest in alternative modes, congestion sensitivity, and safety concern.

Residential context is closely linked to mobility orientation. Respondents in stand-alone homes exhibit lower Sustainable Travel Preference and higher Auto-Oriented Lifestyle; homeowners also show stronger Auto-Oriented Lifestyle. These patterns align with prior research linking automobile use, residential preference, and lifestyle orientation (Steg 2005; Magassy et al. 2022). Urban residents exhibit higher Sustainable Travel Preference, Congestion Burden, and Safety Sensitivity, likely reflecting greater access to non-automobile modes, more congestion exposure, and closer interaction among travelers using different modes.

The latent constructs are related but distinct. Sustainable Travel Preference correlates positively with Congestion Burden and Safety Sensitivity, and negatively with Auto-Oriented Lifestyle. Congestion Burden correlates positively with Auto-Oriented Lifestyle and negatively with Safety Sensitivity, while Auto-Oriented Lifestyle correlates positively with Safety Sensitivity. These relationships show that mobility orientations do not lie on a simple roadway-versus-alternatives continuum. Individuals may simultaneously hold automobile-oriented, safety-conscious, congestion-sensitive, and multimodal preferences, supporting analysis of funding priorities as a portfolio rather than isolated choices.

4.2. Estimation Results for the Main Outcome Model

Table 3 presents model estimation results for the seven transportation funding outcomes. Positive coefficients indicate a greater latent propensity to select a higher funding category, whereas negative coefficients indicate a greater propensity to maintain or reduce current funding.

4.2.1. Exogenous Variable Effects

The results reveal considerable heterogeneity across population groups, but most differences are concentrated in selected domains rather than all seven outcomes. Age is a major source of variation. Respondents aged 65 years or older are more inclined to support higher spending in six domains, except active mobility. Adults aged 18 to 34 are less inclined to increase spending on new roads and bridges, while those aged 18 to 24 are more inclined to fund active mobility infrastructure. This pattern is consistent with evidence that younger adults use multimodal and alternative travel options more often (Lee et al. 2020). Respondents aged 55 to 64 are more inclined to support higher spending on new roads and road maintenance.

Females show lower propensities than males to support higher spending across the five safety- and roadway-oriented domains, but no significant gender differences emerge for public transportation or active mobility. These results indicate greater reluctance among women to

expand spending in these domains, but do not necessarily mean that they consider the underlying needs less important. Women and men may value these needs similarly while differing on whether current funding is sufficient. The pattern may reflect differences in travel behavior, household responsibilities, safety perceptions, and attitudes toward public expenditure.

Respondents with a high-school education or less show lower propensities to support increased spending across all seven domains, whereas the positive association for those with a bachelor's degree or higher is limited to safety infrastructure and technologies. Income effects are more selective. Respondents in households earning less than \$25,000 are less inclined to support higher spending across several safety, congestion, maintenance, and active mobility domains; those in the lowest income category also show a lower propensity to increase public transportation funding. Higher-income households show greater propensities to support selected safety and congestion investments. These patterns may reflect differing assessments of the affordability or necessity of additional public spending (Kallbekken et al. 2013; Huber and Wicki 2021), particularly because survey respondents were reminded that increases could result in higher taxes or fees.

Race and ethnicity effects are concentrated in fewer outcomes. Black respondents exhibit a lower propensity to support increased congestion relief spending. Hispanic respondents show lower propensities for congestion relief, new roads and bridges, and road repairs and maintenance. These findings should be interpreted as differences in preferred funding direction within specific domains rather than any generalized opposition to transportation investment. Such differences may be considered in relation to variation in mobility resources, alternative mode use, residential context, and exposure to transportation conditions across population groups (Molloy et al. 2024). Students, by contrast, show a greater propensity to support increased public transportation funding, consistent with the role of transit in serving populations with limited vehicle access and travel concentrated around educational institutions (Ripplinger et al. 2008).

Household circumstances also shape preferred funding changes. Vehicle-deficient households are less inclined to support higher spending on congestion relief and road maintenance. Together with their stronger Sustainable Travel Preference in the latent construct model, this pattern suggests a different desired composition of transportation spending rather than a general reluctance to invest. Respondents with children show lower baseline propensities to increase spending on new roads and active mobility, but interaction effects reveal that family circumstances do not translate into a uniform spending preference. Child presence partly offsets female respondents' lower propensity to support increased spending on new roads. Weekly automobile-passenger use is associated with stronger transit funding support among men and graduate-degree holders, while men in zero-vehicle households exhibit greater support for increased active mobility spending. These patterns underscore that household responsibilities and mobility resources can produce overlapping and sometimes counteracting funding preferences (Palm and Handy 2018).

Several interactions further qualify the age effects. Among respondents aged 65 years or older, high income offsets their greater propensity to support increased safety-enforcement spending. Weekly drive-alone use attenuates their support for higher spending on new roads and public transportation, whereas residence in an area with many zero-vehicle households strengthens their support for increased transit funding. The positive active mobility support among respondents aged 18 to 24 does not extend to urban contexts, presumably because such contexts are already well equipped with activity mobility infrastructure (Rodriguez Ocana et al. 2025). Such results reinforce the need to interpret the influence of population characteristics in context, rather than assigning any group a single transportation-spending orientation.

Regional and built environment characteristics also exhibit selective relationships. Respondents in the Northeast and Midwest are less inclined to support higher congestion relief spending, while Midwestern respondents are also less inclined to increase safety enforcement funding. Small town residents show a greater propensity to increase road maintenance spending. Living near a transit stop is associated with stronger support for higher public transportation spending, whereas respondents located farther from transit exhibit a lower propensity to increase safety management and enforcement spending. These patterns are consistent with the notion that proximity to multimodal transportation options can shape perceptions of whether additional investment is warranted (Hannay and Wachs 2007).

Existing development patterns influence the propensity for increased spending levels in nuanced ways. Respondents in the least walkable areas are more inclined to support increased spending on new roads and bridges (presumably because of the dependence on the automobile), while those in areas with weak pedestrian networks are likewise less inclined to increase active mobility funding. Residents of areas with low automobile access to jobs also show a lower propensity to increase congestion relief spending. These results are consistent with research showing that residential context, travel behavior, and transportation attitudes are connected through interrelated pathways (De Vos et al. 2021). The results suggest that existing environments may reinforce established mobility expectations and desires rather than automatically create demand for corrective investment.

4.2.2. Transportation Experience and Travel Characteristics Effects

Travel characteristics are associated with preferred spending changes in targeted and sometimes cross-modal ways. Weekly drive-alone users exhibit a greater propensity to support increased spending on new roads and bridges, consistent with their direct reliance on roadway capacity. Weekly ridehailing users are more inclined to increase congestion relief spending, while ridehailing drivers show greater support for higher spending on safety management and enforcement and road repairs and maintenance. These associations are consistent with the extensive roadway exposure of ridehailing drivers and the implications of congestion, unsafe driving, and poor roadway conditions for operating conditions and travel time (Mao et al. 2021).

Weekly public transportation users exhibit greater propensities to support increased spending on both safety management and enforcement and new roads and bridges. This finding indicates that support for transit and roadway investment need not be mutually exclusive, particularly because many transit services depend on safe and reliable roadway operations. Urban transit users also show a greater propensity to support increased spending on safety infrastructure and technologies. These results are consistent with prior evidence that travelers may support investments outside the modes they personally use when they recognize broader system benefits (Manville and Cummins 2015; Cradock et al. 2018).

Teleworkers are more inclined to support higher spending on active mobility infrastructure, consistent with evidence that working from home can shift activity participation toward neighborhood-scale destinations and noncommute travel (Chakrabarti 2018). Respondents with commutes shorter than five miles show a lower propensity to increase congestion-relief spending, consistent with lower exposure to congestion. Familiarity with or ownership of an electric bicycle, in contrast, is associated with a greater propensity to support increased congestion relief funding. Interest in an alternative travel mode may therefore coexist with concern about congestion rather than imply indifference to roadway conditions.

Transportation experiences in the previous month provide particularly clear evidence that lived conditions are associated with funding changes. Respondents who experienced unsafe road conditions, unsafe work zones, or near-misses with automobiles are more inclined to support increased spending on both safety infrastructure and road repairs and maintenance. Encounters with speeding or aggressive driving are associated with greater propensities to increase spending on safety infrastructure, safety enforcement, and public transportation. These patterns are consistent with evidence that perceived and experienced transportation conditions strongly shape judgments about whether additional funding is warranted (Fogg et al. 2020; Schuitema et al. 2010).

Walking and bicycling deficiencies display similarly targeted relationships. Missing sidewalks or bicycle lanes, absent crosswalks or signals, blocked bicycle lanes, and poor signage are associated with greater support for increased active mobility spending. Poor walking and bicycling surfaces are associated with greater propensity to increase road repair and maintenance. Unsafe transit waiting conditions exhibit the strongest experience-based association with public transportation funding, while concern about police interactions while driving is also associated with greater support for transit spending. Overall, these results suggest that people often connect the deficiencies they encounter with the investments positioned to address them. User-experience information may therefore complement engineering assessments by identifying transportation problems that are especially visible and consequential to travelers (Calvo-Poyo et al. 2020).

4.2.3. Latent Construct Effects

Safety Sensitivity emerges as the broadest latent orientation shaping preferred funding changes. It is positively and strongly associated with the propensity to support higher spending across all seven domains, including safety programs, roadway investments, public transportation, and active mobility. Because the underlying indicators emphasize crash reduction, lower speeds, and enforcement, the results suggest that safety serves as a system-wide lens through which otherwise distinct transportation investments may be viewed as complementary. This pattern is consistent with evidence that perceived safety benefits increase acceptance of transportation interventions and that broad evaluative orientations can organize support across several policy domains (Eriksson et al. 2008; Fell 2019; Agrawal and Nixon 2023, 2025).

The remaining constructs are more selective and primarily shape the desired spending composition. Sustainable Travel Preference is associated with greater support for public transportation and, more modestly, active mobility funding, consistent with evidence that favorable views of transit, walking, and bicycling form a broader attitudinal orientation that may or may not correlate with observed mode use (Anable 2005; Molin et al. 2016). Auto-Oriented Lifestyle exhibits the opposite pattern, reducing support for public transportation and active mobility, but is not associated with a generalized propensity to increase roadway spending. Automobile orientation therefore appears to affect willingness to expand non-automobile investments (more than to increase roadway spending), consistent with the broader lifestyle and residential dimensions identified by Steg (2005) and Magassy et al. (2022).

Congestion Burden exhibits a modest positive association with the propensity to increase congestion-relief spending, but is not directly associated with higher spending on new roads. Recognizing congestion as a problem therefore does not necessarily determine the remedy a respondent prefers, consistent with Börjesson et al. (2015). The result reinforces the distinction between support for addressing a transportation condition and support for any particular intervention.

TABLE 3 Estimation Results for Main Outcome Variables (N = 8,567)

Explanatory Variables (base category)		Safety Infrastructure		Safety Enforcement		Congestion Relief		New Roads & Bridges		Repairs & Maintenance		Public Transit		Active Mobility	
		Coef	t-stat	Coef	t-stat	Coef	t-stat	Coef	t-stat	Coef	t-stat	Coef	t-stat	Coef	t-stat
Latent constructs															
Sustainable Travel Preference (STP)		—		—		—		—		—		0.19	5.44	0.07	1.94
Congestion Burden (CB)		—		—		0.09	1.66	—		—		—		—	
Auto-Oriented Lifestyle (AOL)		—		—		—		—		—		-0.09	-2.73	-0.14	-3.06
Safety Sensitivity (SS)		0.48	22.79	0.50	23.44	0.36	17.07	0.38	18.92	0.44	18.47	0.43	19.99	0.48	21.69
Interaction terms	STP × Child presence	—		0.10	2.34	—		—		—		—		—	
	STP × Suburban area	—		—		—		—		-0.06	-1.79	—		—	
	CB × Child presence	—		—		—		0.16	2.64	—		—		—	
	CB × Urban area	—		—		—		—		—		—		0.22	3.44
	AOL × Child presence	—		—		—		—		—		—		0.22	3.34
	AOL × Not urban area	-0.08	-2.20	—		—		—		—		—		—	
Individual characteristics															
Age (*)	18 to 24 years	—		—		—		-0.17	-3.86	—		—		0.15	2.67
	25 to 34 years	—		—		—		-0.12	-2.69	—		—		—	
	55 to 64 years	—		—		—		0.10	1.84	0.13	2.40	—		—	
	65 years or older	0.13	3.11	0.23	5.37	0.15	2.39	0.32	4.43	0.25	5.29	0.22	3.13	—	
Gender (male)	Female	-0.10	-2.91	-0.07	-2.26	-0.07	-2.30	-0.15	-3.89	-0.11	-3.17	—		—	
Education (*)	< High school	-0.18	-4.38	-0.12	-3.38	-0.11	-3.29	-0.13	-3.62	-0.17	-4.29	-0.19	-5.10	-0.12	-3.12
	≥ Bachelor's degree	0.13	2.70	—		—		—		—		—		—	
Race (all others)	Black	—		—		-0.10	-2.79	—		—		—		—	
Ethnicity (not Hispanic)	Hispanic	—		—		-0.08	-2.05	-0.08	-2.00	-0.10	-2.30	—		—	
Student (no)	Yes	—		—		—		—		—		0.18	2.38	—	
Household attributes															
Household income (*)	< \$10,000	—		—		—		—		—		-0.17	-3.01	—	
	< \$25,000	-0.20	-4.48	-0.12	-2.69	-0.17	-4.29	—		-0.13	-3.15	—		-0.10	-2.17
	≥ \$100,000	—		—		0.07	1.74	—		—		—		—	
	≥ \$150,000	0.12	2.47	0.12	2.35	—		—		—		—		—	
Vehicle deficiency (no)	Yes, vehicles < drivers	—		—		-0.10	-3.30	—		-0.09	-2.73	—		—	
Child presence (no)	One or more	—		—		—		-0.25	-3.71	—		—		-0.16	-2.51
Location (*)	Urban	—		—		—		—		—		—		-0.10	-1.70
	Small town	—		—		—		—		0.11	2.02	—		—	
Interaction terms (*)															
Age 65 or more × Hispanic		0.08	1.69	—		—		—		—		—		—	
Age 65 or more × Income \$150,000 or more		—		-0.24	-2.40	—		—		—		—		—	
Age 65 or more × Drives alone		—		—		—		-0.17	-2.35	—		-0.22	-3.24	—	
Age 65 or more × High zero-vehicle area		—		—		—		—		—		0.19	2.47	—	
Age 18 to 24 × Urban		—		—		—		—		—		—		-0.32	-3.23
Female × Child presence		—		—		—		0.12	2.07	—		—		—	
Male × Car passenger at least weekly		—		—		—		—		—		0.12	2.69	—	
Male × No-vehicle household		—		—		—		—		—		—		0.24	2.92

Graduate degree × Car passenger at least weekly		—		—		—		—		—		0.25	3.85	—	
Urban × Transit use at least weekly		0.17	3.09	—		—		—		—		—		—	
Travel characteristics															
Drive alone (<weekly)	At least weekly	—		—		—		0.16	4.48	—		—		—	
Transit use (<weekly)	At least weekly	—		0.18	3.90	—		0.13	3.13	—		—		—	
Ridehailing use (<weekly)	At least weekly	—		—		0.20	4.36	—		—		—		—	
Ridehailing driver (no)	Yes	—		0.20	2.94	—		—		0.19	2.92	—		—	
Teleworker (no)	Yes	—		—		—		—		—		—		0.09	2.21
Commute distance (≥5 mi)	Under 5 miles	—		—		-0.12	-2.49	—		—		—		—	
E-bike exposure (none)	Familiar or owner	—		—		0.13	2.95	—		—		—		—	
Built-environment attributes															
Census region (*)	Northeast	—		—		-0.12	-3.65	—		—		—		—	
	Midwest	—		-0.10	-2.74	-0.18	-5.19	—		—		—		—	
Transit stops within walking distance (*)	Near (0.16-0.26 mi)	—		—		—		—		—		0.09	2.17	—	
	Not in range (>0.75 mi)	—		-0.09	-2.92	—		—		—		—		—	
Job access by auto (≥12,000)	Low (<12,000 jobs)	—		—		-0.11	-3.40	—		—		—		—	
Walk index (5.76-20)	Least walkable (1-5.75)	—		—		—		0.08	1.99	—		—		—	
Pedestrian network (≥0.68)	Low (<0.68 per sq mi)	—		—		—		—		—		—		-0.14	-2.46
Transportation safety experiences in the last month (^)															
Unsafe road conditions (no)	Experienced	0.12	3.30	—		—		—		0.19	5.14	—		—	
Unsafe work zones (no)	Experienced	0.13	2.96	—		—		—		0.13	2.84	—		—	
Near-miss with a car (no)	Experienced	0.14	3.73	—		—		—		0.18	4.94	—		—	
Speeding/aggressive driving (no)	Experienced	0.13	3.68	0.21	6.39	—		—		—		0.10	3.03	—	
Poor signage/markings (no)	Experienced	—		—		—		—		—		—		0.15	2.92
Police-interaction concern (no)	Experienced	—		—		—		—		—		0.18	3.01	—	
Missing sidewalks/bike lanes (no)	Experienced	—		—		—		—		—		—		0.20	4.85
Poor walking/biking surfaces (no)	Experienced	—		—		—		—		0.18	4.78	—		—	
Missing crosswalks/signals (no)	Experienced	—		—		—		—		—		—		0.22	3.69
Blocked bike lanes (no)	Experienced	—		—		—		—		—		—		0.19	3.22
Unsafe wait at transit stop (no)	Experienced	—		—		—		—		—		0.42	4.92	—	
Thresholds and Correlations															
Thresholds	1 2	-2.13	-35.21	-2.12	-38.30	-1.96	-28.64	-1.99	-33.81	-2.37	-32.03	-1.98	-40.13	-2.29	-35.15
	2 3	-1.60	-29.78	-1.46	-32.86	-1.32	-20.45	-1.34	-25.44	-1.92	-31.55	-1.34	-31.98	-1.77	-32.43
	3 4	-0.10	-2.14	0.06	1.37	-0.01	-0.21	-0.10	-1.90	-0.64	-13.64	0.22	5.77	-0.16	-3.65
	4 5	1.06	22.44	1.21	27.19	1.08	16.39	0.90	17.30	0.47	11.13	1.17	28.74	0.96	23.16
Implied correlations between outcome variables	Safety Infrastructure	1.00		0.19		0.15		0.15		0.17		0.18		0.19	
	Safety Enforcement			1.00		0.16		0.16		0.18		0.18		0.19	
	Congestion Relief					1.00		0.12		0.13		0.13		0.14	
	New Roads & Bridges							1.00		0.14		0.14		0.15	
	Repairs & Maintenance									1.00		0.16		0.17	
	Public Transit											1.00		0.20	

Note: Coef = coefficient; “—” = not applicable. (*) Base category varies across the model equations and corresponds to all omitted categories.

The interaction effects show that these orientations translate into funding preferences differently across household and residential settings. Among households with children, Sustainable Travel Preference strengthens support for increased safety management and enforcement spending, while Congestion Burden increases support for higher spending on new roads and bridges. Among urban residents, greater Congestion Burden is associated with a stronger propensity to increase active mobility spending, suggesting that these residents view increased investments in non-automobile modes as a potential strategy to address congestion concerns. Sustainable Travel Preference is modestly associated with a lower propensity to increase road-maintenance spending among suburban respondents.

Auto-Oriented Lifestyle is generally associated with lower support for increased active-mobility spending, but the positive interaction with child presence offsets this relationship. Automobile-oriented households with children may therefore still support higher spending on walking and bicycling infrastructure as they may view such infrastructure critical to child transportation, recreation, and safety (Seraj et al. 2012). In non-urban areas, stronger Auto-Oriented Lifestyle is associated with a lower propensity to increase safety infrastructure spending. Overall, the latent construct results indicate that mobility orientations influence both the broad willingness to expand transportation spending and the domains toward which additional resources would be directed.

4.2.4. Implied Correlations and Goodness-of-Fit

The implied correlations among the seven funding outcomes are uniformly positive and modest, ranging from 0.12 to 0.20. The strongest association is between public transportation and active mobility funding, followed by several relationships linking the safety outcomes with road maintenance, public transportation, and active mobility. These correlations indicate a common tendency for respondents who favor higher funding in one domain to favor higher funding elsewhere, while their modest magnitudes confirm that the seven outcomes remain substantively distinct. Because outcome-level residual correlations are constrained to zero, these associations arise through the shared observed characteristics, latent constructs, and model pathways represented in the GHDM.

The fit measures in Table 4 strongly favor the joint GHDM over the independent specification. The GHDM yields a higher predictive log-likelihood at convergence, a larger adjusted likelihood ratio index (0.119 versus 0.024), and a considerably lower Bayesian information criterion (69,043.71 versus 76,095.27), despite estimating more parameters. These results demonstrate the value of modeling transportation funding preferences jointly rather than treating the seven outcomes as independent responses.

TABLE 4 Model Data Fit Measures (N = 8,567)

Measure	GHDM	Independent Model
Predictive log-likelihood at convergence	-68011.36	-75384.40
Predictive log-likelihood at constants	-77400.41	-77400.41
Number of parameters	228	157
Adjusted likelihood ratio index	0.119	0.0244
Bayesian information criterion	69043.71	76095.27
Non-nested likelihood ratio test	-121.50	

5. DISCUSSION AND CONCLUSIONS

Understanding public sentiment about transportation funding priorities is important for policy development, long-range planning, and ballot measures. Using data from 8,567 adults in Wave 2 of the Transportation Heartbeat of America (THA) survey, this study examined support for decreasing, maintaining, or increasing funding across seven domains: safety infrastructure and technologies, safety management and enforcement, congestion relief, construction of new roads and bridges, road repairs and maintenance, public transportation, and active mobility infrastructure. A Generalized Heterogeneous Data Model considered these priorities jointly and identified associations with mobility circumstances, broader orientations, and socioeconomic and demographic characteristics.

The findings reveal broad support for increased transportation investment. Road repairs and maintenance received the strongest endorsement, with 75.6% favoring an increase. Majorities also favored increases for active mobility infrastructure, safety infrastructure and technologies, construction of new roads and bridges, congestion relief, and safety management and enforcement. Public transportation was more divided, but support for increasing funding exceeded support for decreasing it; across all seven domains, no more than 10.4% favored a reduction in spending.

These findings suggest that people do not prioritize a single transportation need. The same person may support maintenance, safety, capacity improvements, public transportation, and active-mobility infrastructure because each serves a different function within an interconnected system. Funding priorities should therefore be viewed as a portfolio of related judgments, not a competition in which support for one domain implies opposition to another. System preservation provides the strongest consensus, but respondents value investments that improve system condition, performance, safety, and mobility options.

The latent constructs explain both the common foundation and composition of this portfolio. Safety Sensitivity was positively associated with support in all seven domains, suggesting that safety may unify otherwise distinct investments. Sustainable Travel Preference directed increased support toward public transportation and active mobility, whereas Auto-Oriented Lifestyle assigned lower priority to these alternatives without implying broad support for additional roadway funding. Congestion Burden was associated primarily with congestion relief and did not automatically translate into support for greater investment in constructing new roads. These results indicate that broader societal considerations may shape where people believe resources should be directed, while recognizing a transportation problem does not necessarily determine the preferred remedy.

Socioeconomic, demographic, household, and residential characteristics also explained variation in funding priorities. Younger adults were selective: those aged 18 to 34 placed less priority on construction of new roads and bridges, while those aged 18 to 24 showed stronger support for active-mobility infrastructure. Respondents aged 55 to 64 placed greater priority on roadway construction and preservation. Female respondents showed lower support than males across the five roadway-related domains but showed no systematic difference for public transportation or active mobility. Households with children showed lower baseline support for new roads and active mobility infrastructure; these relationships varied by gender and broader mobility orientations, reflecting competing family transportation demands. Vehicle-deficient households placed less priority on congestion relief and road maintenance; together with their stronger sustainable travel preference, this pattern suggests greater emphasis on expanding investment for alternatives to the automobile. Income effects were also selective. Households earning less than \$25,000 expressed weaker support across several domains, whereas higher-income households

showed greater support for selected safety and congestion relief investments. Overall, priorities reflect resource availability, mobility constraints, responsibilities, and available transportation options.

Experiences with transportation deficiencies produced some of the clearest targeted relationships. Unsafe roads, work zones, aggressive driving, and near-misses were associated with greater support for safety and maintenance investments. Missing sidewalks, crossings, bicycle facilities, and related infrastructure corresponded to stronger support for active mobility, while unsafe transit access and waiting conditions were associated with greater support for public transportation funding. Public priorities thus appear partly grounded in daily transportation conditions. Information about these experiences may complement engineering assessments by identifying deficiencies that are especially visible and consequential to users.

The policy challenge is to translate these heterogeneous preferences into a coherent investment program. The results support balanced portfolios centered on system preservation and safety while addressing congestion, capacity, public transportation, and active mobility infrastructure. Agencies may benefit by showing how complementary investments across modes advance accessibility, reliability, resilience, economic vitality, opportunity, and quality of life for all.

Public sentiment should inform policy but not determine it alone. Expressed priorities reflect current circumstances and available transportation options, whereas major investments shape mobility, development, economic activity, and community well-being for decades into the future. Decision-makers must balance current public preferences with technical evidence, fiscal constraints, broader societal goals, and the needs of future generations, while ensuring that groups with limited mobility options, transportation-related disabilities, or less visible needs are not overlooked.

Several study limitations merit recognition. The outcomes represent stated preferences and should not be interpreted as actual voting behavior or willingness to pay. Respondents did not allocate a fixed budget, evaluate a specific revenue mechanism, or make binding tradeoffs among the seven domains. Future research could incorporate constrained allocation exercises, specific funding proposals, and longitudinal observations of how priorities change over time.

Overall, the study shows that transportation funding priorities are broad, interconnected, and heterogeneous. People generally favor a portfolio that preserves existing assets, improves safety and system performance, and provides multiple mobility options, though they differ in the emphasis assigned to each component. The findings clarify what people view as consequential to mobility and quality of life and can inform forward-looking policy responsive to diverse needs without leaving any population group behind.

AI STATEMENT

Artificial intelligence tools – ChatGPT and Claude – were used to support the preparation of this manuscript, assisting with formatting content and refining language. All AI-assisted output was critically reviewed, revised, and validated by the authors. The study design, analysis, interpretation of results, and conclusions reflect the authors’ academic and professional judgment. AI tools improved efficiency and communication but did not substitute for engineering judgment, technical review, or responsibility for the final content. The authors are solely responsible for all content, including any errors or omissions.

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AUTHOR CONTRIBUTIONS

The authors confirm contribution to the paper as follows: study conception and design: F. Yu, M.G. Rodriguez Ocana, I. Batur, S. Polzin, R.M. Pendyala; data collection: F. Yu, M.G. Rodriguez Ocana, D. Robbennolt, C.R. Bhat, I. Batur, S. Polzin, R.M. Pendyala; analysis and interpretation of results: F. Yu, M.G. Rodriguez Ocana, D. Robbennolt, C.R. Bhat, I. Batur, R.M. Pendyala; draft manuscript preparation: F. Yu, M.G. Rodriguez Ocana, I. Batur, R.M. Pendyala. All authors reviewed the results and approved the final version of the manuscript.

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