RESEARCH & DEVELOPMENT

Public Perceptions of Transportation Fees and Taxes in North Carolina 2020

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16. Abstract

Changing trends in the automobile market are challenging the long-term sustainability of revenue streams—and possibly how the public perceives them. In response, NCDOT commissioned a survey to better understand how the public perceives transportation taxes and fees in 2019 and followed up with an updated survey in 2020. Additionally, NCDOT created the NC FIRST Commission. This state level committee of subject matter experts was tasked with evaluating North Carolina's current and future transportation investment needs and advising the Secretary of Transportation on those needs was created. The NC FIRST Commission delivered their final report in January 2021.

Using the knowledge gained from the literature review, the research team designed and administered a 17-question survey to North Carolina residents. The survey responses were weighted by county population and response rate, gender, age, and education to adjust the sample for representativeness of North Carolina's population. Some questions on the survey were split into multiple ballots to examine how varying levels of information and context would affect responses. The results suggest several instances where providing background information does have an impact. For example, when more context is offered, respondents supported an increase in funding at a substantially higher rate than those who did not receive information. Support for a mileage-based usage fee dwindled as information on a specific fee amount was introduced and then increased.

Most respondents did not know the actual amount of the gas tax in North Carolina. However, most respondents think that the gas tax is fair despite not knowing the amount. Interesting differences between ballots in the survey question asking respondents to estimate the gas tax emerged, such as the fact that more confident respondents guessed incorrectly at a higher rate than those who were not confident or simply guessed. The findings suggest a relatively minor difference in responses between those that live in urban and rural areas. Finally, the results suggest statistical differences (but not many practical differences) in education, political affiliation, and age.

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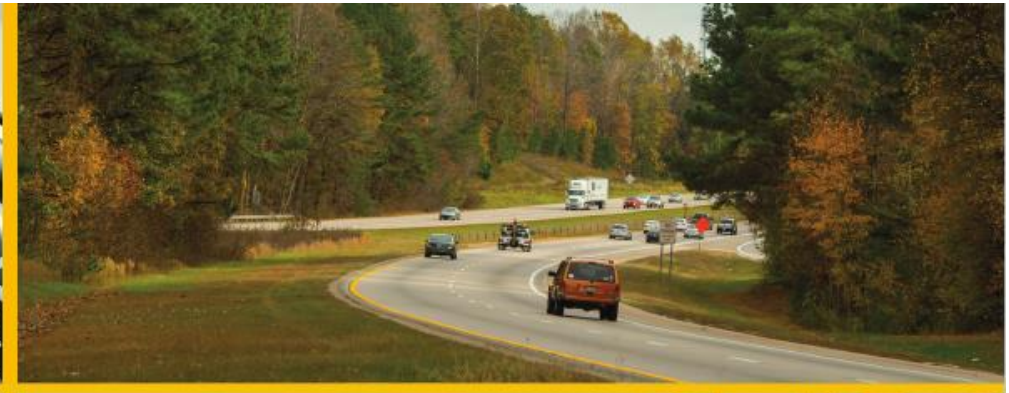

PUBLIC PERCEPTIONS OF TRANSPORTATION FEES AND TAXES IN NORTH CAROLINA 2020

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June 18, 2021

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Executive Summary

Changing trends in the automobile market are challenging the long-term sustainability of revenue streams—and possibly how the public perceives them. In response, NCDOT commissioned a survey to better understand how the public perceives transportation taxes and fees in 2019 and followed up with an updated survey in 2020. Additionally, NCDOT created the NC FIRST Commission. This state level committee of subject matter experts was tasked with evaluating North Carolina's current and future transportation investment needs and advising the Secretary of Transportation on those needs was created. The NC FIRST Commission delivered their final report in January 2021.

While findings from the literature review on the public perception of transportation funding varied, several key trends emerged. First, public support for increased transportation taxes and fees was greatest among those living in urban areas, those who were more knowledgeable about how transportation is funded, those who were self-identified Democrats, and those with higher levels of education. Other common factors considered included general demographic information, use of different transportation modes, importance of road conditions, and political and environmental ideologies among respondents.

Using the knowledge gained from the literature review, the research team designed and administered a 17-question survey to North Carolina residents. The survey responses were weighted by county population and response rate, gender, age, and education to adjust the sample for representativeness of North Carolina's population. Some questions on the survey were split into multiple ballots to examine how varying levels of information and context would affect responses. The results suggest several instances where providing background information does have an impact. For example, when more context is offered, respondents supported an increase in funding at a substantially higher rate than those who did not receive information.

Most respondents did not know the actual amount of the gas tax in North Carolina. However, most respondents think that the gas tax is fair despite not knowing the amount. Interesting differences between ballots in the survey question asking respondents to estimate the gas tax emerged, such as the fact that more confident respondents guessed incorrectly at a higher rate than those who were not confident or simply guessed. The findings suggest a relatively minor difference in responses between those that live in urban and rural areas. Finally, the results suggest statistical differences (but not many practical differences) in education, political affiliation, and age.

Introduction

Background

The North Carolina Department of Transportation (NCDOT) provides transportation services across North Carolina for a variety of functions and uses, including highway and roadway construction and maintenance, airports, railroads, transit, ferry system, and bicycle and pedestrian infrastructure. Currently, however, the state's funding sources that support these services are being strained due to long-term gas tax revenue sustainability and fuel source and economy innovations in the automobile market. The growing gap between needs and revenue continues to increase as tax revenues drop due to the increasing fuel efficiency of today's vehicles, leaving the motor fuel tax insufficient to cover the full transportation needs of the state. In addition, it is projected that the North Carolina population will increase more than 25% from 10.3 million residents to 12.8 million residents by 2035, creating additional demand and funding needs for the state's transportation infrastructure, and further overstretching the capability of the current funding mechanisms .[1] The growing gap between needs and revenue for transportation funding is not a problem specific to North Carolina. Since 2012, 35 states, including North Carolina, have taken some form of legislative action to increase transportation funding.

In response, NCDOT commissioned a survey to better understand how the public perceives transportation taxes and fees. Survey responses were weighted by gender, age, race, income, and education to ensure the sample is representative of North Carolina's overall population. In addition, some questions on the survey were split into multiple ballots to measure how introducing or withholding contextual information about transportation affects their preferences.

Several findings emerged regarding North Carolina residents' perceptions of transportation taxes and fees. Overall, North Carolinians support increasing transportation funding. The results suggest a preference for the gas and sales taxes; however, there appears to be some support for a mileage-based usage fee. Despite this, however, North Carolinians are split over whether road funding should come from general taxes or usage-based fees. There also seems to be very few major differences in preference and opinion between demographic groups. Despite popular belief, this study shows that rural and urban North Carolinians share many common opinions when it comes to transportation funding in the state. While the results here provide insight into the perceptions of transportation funding and financing, additional research is needed to be able to fully assess the perceptions of key groups in the future.

Scope and Objectives

The scope of this research is to improve NCDOT's understanding of North Carolina residents' perceptions related to current and future potential transportation funding mechanisms. The objectives of this research are to (1) develop a better understanding on the public's perception of transportation taxes and fees currently under consideration

by states around the country, (2) develop a clear understanding on the geography of transportation funding support, and (3) help provide NCDOT with a framework for understanding which transportation policy decisions the public may support. This report summarizes, in detail, the results attributed to this survey.

Report Organization

This technical report is organized into five sections, which contain the relevant findings from this research. The five sections that make up the report are organized as follows:

- **Section 1: Introduction** – This section provides an overall background of the research conducted, reviews the scope and objectives of this research, and summarizes the expected results.
- **Section 2: Literature Review** – This section provides an overall summary of the literature findings, including a review of previous transportation funding and finance polls conducted by other research organizations. This chapter also provides a brief review of other analysis models, a summary of key survey findings and gaps in the literature.
- **Section 3: Methodology** – This section provides an overview of the methodology used for developing and analyzing the survey.
- **Section 4: Summary of Findings** – This section provides a brief summary of the final results, including a tabulation for each question. Full results from the survey may be found in Appendix 1.
- **Section 5: Conclusion** – This section provides a summary of relevant findings for NCDOT and opportunities for future research.

About the Survey Research Team

This survey was administered by the NC State Institute for Transportation Research and Education (NC State ITRE.) ITRE is an institutional center located at NC State University and conducts surface and air transportation research, training, and technical support activities for municipal, state, federal, and international clients to address critical transportation issues. ITRE is committed to developing leadership in its study of transportation issues through fostering analytical thinking, integrating technology in education and research, serving as a catalyst for problem solving, and cultivating professionals and students dedicated to excellence in transportation.

Literature Review

Analysis of Survey Findings

In recent years, academic institutions, public sector agencies, and philanthropists have sponsored surveys to measure public opinion regarding transportation taxes and fees. Based on this review, the most common survey administration methods were (1) cellular and landline telephone surveys via the random digit dialing (RDD) method, (2) email invitation, and (3) online surveys. Some surveys used a combination of one or more of these methods. Surveys measuring public opinions for transportation funding were administered nationwide, statewide, or within a region of the U.S. Table 1 below summarizes the date, sample size, method, number of responses, and survey margin of error (i.e., error in polling that can result from the process of selecting a sample) for key surveys administered nationwide, across a state, and in local/regional geographies.

Table 1: **Public Opinion Surveys of Transportation Funding Options**

	Source	Sample		Survey Method	Number of Responses	Margin of Error (pct. Points)
National	Fridling 2018	U.S. adults		email invitation/ online survey	1,090	+/- 3
	Nixon and Agrawal 2018	U.S. adults		Random-digit dialing	1,201	+/- 2.8
	Krause et al 2013	adults in 21 largest U.S. cities		n/a	2,302	n/a
	Public Opinion Strategies 2011	registered voters		phone	1,001	+/- 3.1
State	Simek and Geiselbrecht 2014	Texas	Registered voters	Random-digit dialing; web; mail	5,000	n/a
	Zmud and Arce 2008	North Carolina	Registered voters	n/a	898	+/- 3
	Zmud and Arce 2008	Wisconsin	Wisconsin residents	n/a	500	+/- 3.5
	Zmud and Arce 2008	Indiana	Indiana residents	Random-digit dialing	501	+/- 4.4
	Zmud and Arce 2008	New Jersey	New Jersey residents	n/a	1,000	n/a
	Zmud and Arce 2008	Pennsylvania	Pennsylvania voters	n/a	1,160	+/- 3.3
	Dill and Weinstein 2007	California	California adults	Random-digit dialing	2,705	n/a
	Warburton 2006	Utah	Utah residents	n/a	415	+/- 5
	Podgkorski and Kockelman 2006	Texas	Registered Texas voters	Random-digit dialing	5,000	n/a
Local/Regional	Zmud and Arce 2008	San Antonio, TX; Registered voters in Alamo Regional Mobility Authority jurisdiction		n/a	500	n/a
	JMM 2006	San Diego voters		n/a	1,200	+/- 2.9
	Ginsberg 2005	Adults living in Washington, D.C., Maryland, and Virginia		n/a	1,204	n/a
	NuStats 2005	Adults residing in Austin area who are potential toll road users		Random-digit dialing	n/a	+/- 2
	Baldassare 2003	Orange County, CA residents		telephone	1,004	+/- 3

Effects of Transportation Funding Knowledge on Opinions

Regarding knowledge of transportation funding, several articles provide useful and historical insight. For example, Nixon et al (2018) found respondents support the increase of a fee or tax when they are given information on the use of the collected funds. Duncan (2017) found that billing drivers for distance traveled using a transparent, accurate, and easy-to-use method for measuring distance can increase support for a Mileage-Based User Fee (MBUF) system. Fisher and Wassmer (2016) found that when respondents were knowledgeable of the current tax rates and structures, support for proposed tax increases or additional tolling was higher. Table 2 below provides a summary of key findings regarding the public's knowledge of transportation funding methods.

Table 2: Relevant Findings from Surveys on Knowledge of Transportation Funding Methods

Source	Relevant Findings
Fridling 2018	Americans are willing to pay tolls when given travel time alternatives information
Nixon and Agrawal 2018	When given information on what taxes will likely be used to fund, public support increased
Duncan 2017	Transparent, accurate, easy-to-use methods can increase support for MBUF fee system
Kruse et al 2013	Recommended randomized informational and educational trials be conducted to determine whether consumers who become better informed about plug-in electric vehicle (PEV) technology become more inclined to consider a PEV.
Fichner and Riggleman 2007	Few members of a Minnesota study group knew their state's gas tax rate of 38.4 cents per gallon. Minnesota respondents thought the annual tax paid ranged from a low of $50 per vehicle per year to a high of $10,000 per vehicle per year. The actual tax paid for that year in Minnesota for those residents was between $600 to $700 per year.

Other literature examined ways in which a lack of knowledge can affect support. For example, Fichner and Riggleman (2007) found that few members of a study group knew their state's gas tax rate of 38.4 cents per gallon in Minnesota. Respondent answers ranged from a low of 9 cents per gallon to $1.00 per gallon (Fichtner and Riggleman 2007). Furthermore, responses on the annual tax paid ranged from a low of $50 per vehicle per year to a high of $10,000 per vehicle per year. The actual tax paid for that year was estimated to be in the range of $600 to $700 per year per driver. Other work, such as Krause et al (2013), recommended randomized informational and educational trials be conducted to determine whether consumers who become better informed about plug-in electric hybrid (PEV) technology will become more inclined to consider these types of vehicles.

Based on the literature, there are also several differences in perception between urban and rural areas. For example, Baker Goodin and Munnich (2011) found evidence suggesting differences in perceptions of residents living in rural areas. For example, respondents in urban areas were far more likely to agree that changes in transportation

funding were needed when given more information about the long-term limitations of the funding structure. Respondents living in rural areas, by contrast, were not as likely to change their minds. Furthermore, Podgkorski and Kockelman (2006) found that residents in urban areas were far more concerned with toll projects, whereas people in more rural areas were far more concerned about privacy regarding toll tags and equity. Table 3 below provides a summary of the literature on the perception differences of transportation taxes and fees between urban and rural areas.

Table 3: Rural and Urban on Perception Differences

Source	Relevant Findings
Goodin, Baker and Munnich Jr 2011	• Residents in rural areas perceive the transportation funding crisis as "not real" • Majority of Texans correctly identified fuel tax, registration fees, tolls, and driver license fees as sources of revenue to fund transportation but were less successful at identifying methods that were not directly related to transportation. • Support for broad transportation funding options (e.g., increase transportation investment to reduce traffic congestion) was high. When more concrete transportation funding policy options were proposed (e.g., increase the state motor fuels tax), support decreased.
Podgkorski and Kockelman 2006	• Residents in urban areas were far more concerned with toll projects than those in rural areas • Residents in rural areas were far more concerned over privacy regarding toll tags; residents in these areas were also far more concerned with what respondents perceived as toll "fairness" (i.e., paying a fair share based on toll road use.)

Analysis of Models

Across most of the surveyed literature, the common research question, and resulting binary dependent variable, is whether or not respondents are willing to pay for increased investments in transportation infrastructure. For example, Yusuf (2018) studied the Hampton Roads region, an urban area in Southeastern Virginia, by examining two related research questions: (a) To what extent residents support tolls, an increase in the tax on fuel, or both? (b) What roles do political and ideological beliefs have in determining residents' support for increasing the tax on fuel consumption, introduction of tolls, or both? Yusuf et al. (2018) Both of these questions were used to create a binary dependent variable. Additionally, Nixon and Agrawal (2018) measured support for nine different dependent variables, also using a logit methodology coupled with an odds ratio analysis to examine whether Americans will support increases in gasoline taxes, with different phasing-in scenarios to measure support for increased investments. Like Yusuf (2018), the dependent variables of yes/no are framed in terms of willingness to pay for slight increases in the gas tax. For example, one such choice is whether respondents will support a 10-cent increase in the gasoline tax (Nixon and Agrawal 2018).

Other model types were used in the literature reviewed, such as ordered probit models and multinomial logistic regression. For example, Podgorski and Kockelman (2006) used

ordered probit, binomial logit, and multinomial logit models, finding that residents in Texas broadly supported road improvements. Several dependent variables were included to gauge respondents' opinions on a variety of topics. The consensus of approximately 2,000 Texans, with over 70% support, was to attend to already built roads, maintaining existing roads as toll-free, using revenues by region where those taxes originated, and increasing tolls on trucks. However, there were some opinions that varied by region, as urban Austin residents were more likely to support additional transportation funding other than those residents of the Lower Regions.

The variables that were most generally consistent in a sample of the surveyed literature included age, gender, party affiliation, environmental ideology, opinion of government, race, opinion of government's role in transportation investment, use of public transit, and transportation use in congested areas. The sampled literature proposed a variety of questions, and data for indicators were not necessarily measured or collected in the same way, but examining the body of literature, these indicators are useful in predicting measures of support for proposed policy measures.

For example, party affiliation, when included in the example models, is consistently statistically significant, as self-identified Democrats were more likely to support road financing than Republicans regardless of whether the funding was presented as a gas tax or a MBUF. Perhaps, counterintuitively, miles driven by respondents did not have statistically significant effects on revenue raising proposals. This is somewhat noteworthy, because in terms of a gas tax, those who would pay more of the tax would be those drivers who consume more gasoline and drive relatively more miles. Higher educational attainment, generally measured as whether respondents had attained an undergraduate degree, indicates support for revenue raising measures. Other consistent findings include: individuals with higher levels of income are more likely to support increased road financing; those who believed the government should have a role in transportation funding were more likely to support increased road financing; and generally, older individuals were less likely to support increased road financing efforts.

Table 4 below summarizes key findings from the literature review. An independent variable was considered significant if the study regression resulted in a corresponding estimated parameter with a p-value of less than .05. A plus sign (+) means the study found a positive relationship between the independent variable and support for road funding, a negative sign (-) implies the opposite relationship. Common independent variables used in the models across the literature included general demographic information, such as age, educational attainment, income range, race/ethnicity, political affiliation, and environmental ideologies. Many of the papers evaluated also included factors considering the respondents use of congested roads, other modes of transit, and opinion regarding government. Given the diversity of years, geography, and econometric methods used in the surveyed literature, each variable was not shown to be statistically significant in all publications.

Table 4: Comparison of Independent Variables Used

	Dependent Variable	Support for Tolls	Support for Increased Fuel Tax	Support for Increased Fuel Tax	Support for Variable VMT (By Vehicle Type)	Support for VMT	Willingness to pay for road improvements	Willingness to pay Toll to be free of delays	Support for Increased Fuel Tax
Independent Variable	Age (Older)	(-)	(+)	*	(-)	*	*	*	(+)
	Education (Higher Levels of Education = 1)	(+)	(+)	(+)	*	*	(+)		(+)
	Employment (Employed = 1)	*	*			*		*	
	Gender (Male = 1)	*	*	(+)	(-)	*	*	*	(+)
	Income (Higher Income)			(+)	*		(+)	(+)	(+)
	Miles Driven (More miles driven)			*	*	*	*		(+)
	Opinion of Government Investment in Transportation Funding (Favorable Opinion = 1)		*	(+)	(+)				(+)
	Party Affiliation (Democrat = 1)	(-)	(+)	(+)	(+)	(+)	(+)		(+)
	General Level of Support	28%	29%	36%	19%	21%	38%	24%	40%
	Location of Study (Author, Year)	Virginia (Yusuf, 2018)		National (Nixon/ Agrawal, 2018)		National (Duncan, 2017)	California and Michigan (Fisher/ Wassmer, 2016)	Virginia (Yusuf, 2014)	California (Weinstein/ Dill, 2007)

* *Indicates the variable was included in the model but was found to be insignificant*

(+) *Indicates the variable was **positively** correlated with the dependent variable*

(-) *Indicates the variable was **negatively** correlated with the dependent variable*

Sampling Methods

As it is a relatively new medium, there is not yet a substantial amount of guidance and performance measurements about online probability-based web panels. The most significant issue with web panel surveys is the potential for self-selection bias. However, they are also more cost effective and can be deployed and collected more quickly than a traditional mail based or RDD survey (Bethlehem 2010). Callegaro et al. (2014) found that nonprobability online panels have higher differences from population benchmarks than probability based online panels; furthermore, post-stratification weighting in nonprobability samples were of little help in correcting these population discrepancies. Hsu et al. (2017) found that incentives offered to respondents result in improved participation and lower errors in surveys.

Summary of Literature Findings

This analysis focused on examining the current state of knowledge regarding the public's perception of transportation taxes and fees. First, a brief overview of the different survey design and methods used were presented. Next, this report summarized current findings regarding the current state of knowledge of public opinions related to transportation funding. Finally, this synthesis presented a summary of the models used.

While the findings from each survey varied somewhat, several key trends emerged. First, public support for increased transportation taxes and fees was highest among those living in urban areas, those who were more knowledgeable about how transportation is funded, those that were self-identified Democrats, and those with higher levels of education. By contrast, support for transportation taxes and fees is lower for those living in rural places, among those with lower levels of education, and self-identified Republicans. Furthermore, most of the survey results were analyzed using discrete, or qualitative, choice models. Across the surveyed literature, common dependent variables include a willingness to pay from users for infrastructure and road improvements, as well as support for an increased tax or toll. Common factors considered included general demographic information, use of different transportation modes, importance of road conditions, and political and environmental ideologies among respondents.

The efficacy of web-based probability and nonprobability is unclear. While probability based web panels are more likely to be demographically reflective of the benchmark population, nonprobability based online surveying can be effective in capturing a larger sample and wider demography that can later be weighted to match up with the desired population. Both methods are significantly more efficient and cost-effective than a RDD or mail-based survey that intends to capture the same number of respondents.

Overall, the findings from this literature review suggest support for transportation taxes and fees varies based on demographic, political, and geographical factors. These factors appear to be especially relevant for states such as North Carolina with varying regional and local identities and opinions.

Methodology

Survey Purpose and Development

This survey is the second version of North Carolina's public perceptions survey (the first was completed in 2019); its purpose was and still is to assess the North Carolina general public's perception of transportation taxes and fees. Previous surveys have sought to assess the public's understanding of transportation taxes and fees; however, no other study in North Carolina had conducted a comprehensive review of residents statewide prior to the deployment of the first version of this survey. As this is the second iteration of the survey, updates were made to methodology, the contents of the survey itself, and analysis of results.

Design and Administration

The survey was designed to measure preferences for road-funding sources and observe responses to questions on transportation funding knowledge that could have influenced respondent preferences. In designing and executing the survey, the research team sought to find out how North Carolinians perceive transportation services in the state, as well as what road funding measures they might support.

Given the research questions that were of interest of the research team, as well as select variables of interest identified through literature review, questions were created, updated, and refined for this iteration of the survey. The questions on the survey were refined by the research team to minimize response bias and respondents' confusion, and the answer choices in the survey were structured in a way that would allow the research team to convert the answers into variables that could be used for analysis. Multiple versions of the survey and questions therein were distributed with varying levels of information and context.

This survey was administered online by Ipsos, a market research and consulting firm. Ipsos conducted the survey on KnowledgePanel, which is a probability-based web panel designed to be representative of the United States. KnowledgePanel is the first and largest online research panel that is representative of the entire U.S. population. Respondents are randomly recruited through probability-based sampling, and households are provided with access to the Internet and hardware if needed. Panel members are recruited via address-based sampling methods. Rather than random-digit dialing, members are alerted of surveys via email; this allows surveys to be fielded quickly and economically. More in-depth information on Ipsos KnowledgePanel methodology is located in Appendix 4.

Weighting

Results provided by Ipsos included recommended weights. The provided weights adjusted race, income, education, gender, and age according to the estimated population observed in the 2018 U.S. Census. Additional information on weighting factors and impacts of weighted adjustments can be found in Appendix 3.

Summary of Findings

This research aimed to assess the general public's perception of transportation taxes and fees in North Carolina. The survey responses were weighted by race, gender, age, and income to ensure the sample was representative of North Carolina's population.

A few key trends emerged from the following questions:

- Overall, North Carolinians support increasing transportation funding. The results suggest a preference for the gas and sales tax; however, there also appears to be some support for a fee based on the amount of miles travelled. The varying levels of information provided and proposed fee amount on different versions of the survey significantly affected respondents' support for a fee based on the amount of miles driven.
- North Carolinians appear split over whether road funding should come from general taxes or usage-based fees. In addition, they appear only moderately aware of how much they contribute via taxes on gas purchases. While most respondents report that they would prefer a usage-based fee, in reality, there was significant support for general taxes such as an increase in the general state sales tax.
- The majority of respondents thought that the gas tax was fair or inexpensive, even though most respondents were unable to correctly estimate what the gas tax is.
- Differences in responses were most attributed to gender, age, highest level of education attained, and political affiliation; however, there appear to be minor practical differences in opinion between these demographic groups.
- Despite popular belief, this study shows that rural and urban North Carolinians share many common opinions when it comes to transportation funding in the state.

The following figures and tables summarize survey results by question. Responses are weighted to be more representative of all North Carolinians.

Question 1

"To start, how important are transportation issues to you?"

- *Very important*
- *Somewhat important*
- *Not too important*
- *Not at all important*

The first question of the survey asked respondents how important transportation issues were to them. This question was asked to provide context on how much respondents may know about transportation issues. Over 70% of respondents said that transportation issues were somewhat important or very important to them.

Q1			
		Frequency	Valid Percent
Valid	Not at all important	80	7.6
	Not too important	217	20.7
	Somewhat important	407	38.8
	Very important	345	32.9
	Total	1049	100
Missing	System	1	
Total		1049	100

Question 2

SPLIT 1: "What comes closest to your view regarding government spending on roads in North Carolina? North Carolina needs to:"

SPLIT 2: "Transportation experts generally agree that funding in North Carolina has failed to keep up with growing demands. What comes closest to your view regarding government spending on roads in North Carolina? North Carolina needs to:"

- *Increase spending*
- *Keep spending current amount*
- *Decrease spending*

The second question asks respondents about their views on transportation spending in North Carolina. Split 1 had no context while Split 2 provided context to respondents. In Split 2, where information was provided to respondents, support for increasing spending increased significantly by nearly 15 points.

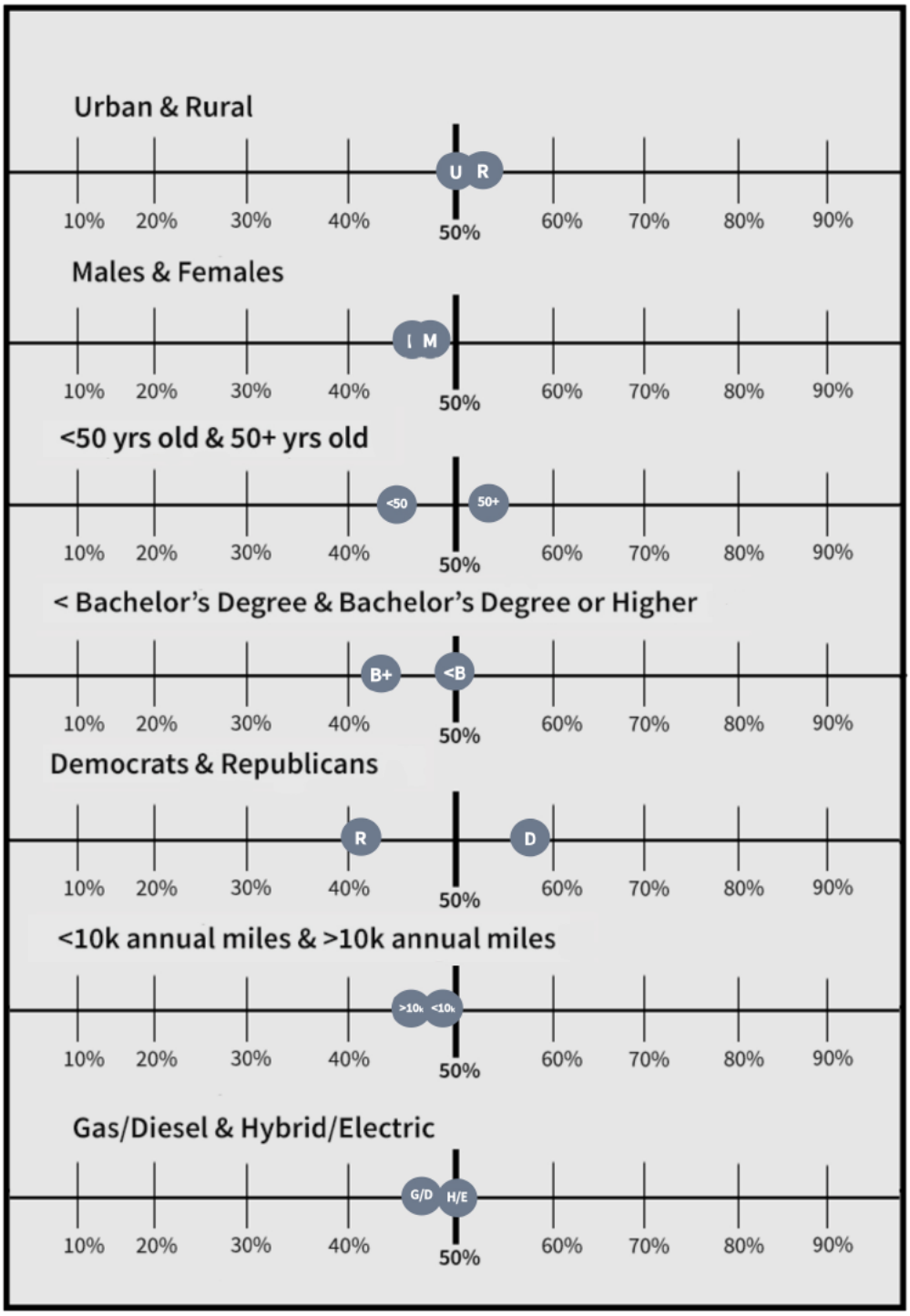
Q2 Split 1

		Frequency	Valid Percent
Valid	Increase spending	221	41.8
	Keep spending current amount	276	52.2
	Decrease spending	32	6.1
	Total	529	100
Missing	System	520	
Total		1049	100

Q2 Split 2

		Frequency	Valid Percent
Valid	Increase spending	286	55
	Keep spending current amount	208	40
	Decrease spending	26	5
	Total	520	100
Missing	System	530	
Total		1049	100

Support funding increase, difference by group



Question 2A

"You said North Carolina needs to [increase spending/decrease spending/keep spending its current amount]. Do you feel that way strongly, or not strongly?"

- *Strongly*
- *Not strongly*

This question was a follow up to Question 2, asking respondents how strongly they felt about their response. Respondents who opposed spending answered that they felt strongly about their decision at a higher rate than those who supported an increase in spending or thought spending should stay the same.

Q2C			
		Frequency	Valid Percent
Valid	Strongly	615	58.7
	Not strongly	433	41.3
	Total	1049	100
Missing	System	1	
Total		1049	100

Question 3

"If the state of North Carolina increased its spending on transportation, where do you think new spending is most needed?"

- *Maintaining and building highways*
- *Expanding multi-modal service (buses, trains, bicycles, and pedestrians)*
- *Improving the safety of the traveling public*
- *Modernizing transportation technologies (wireless connectivity, charging stations, make the state's motor fleet run on electric power)*

Question 3 asked respondents to prioritize where they think funding is most needed. The most popular response was maintaining and building highways, however, nearly a quarter of all respondents thought that expanding multi-modal services should be a priority. Younger respondents supported options outside of highways at a higher rate.

Q3			
		Frequency	Valid Percent
Valid	Expanding multi-modal service	263	24.9
	Improving the safety of the traveling public	177	16.8
	Maintaining and building highways	529	50.1
	Modernizing transportation technologies	87	8.2
	Total	1056	100
Total		1056	100

Question 3A

"Should 100% of any new revenue go to [maintaining and building highways/ expanding multi-modal service (buses, trains, bicycles, and pedestrians)/improving the safety of the traveling public/modernizing transportation technologies (wireless connectivity, charging stations, electrify fleet)], or should some of it also go to at least one other area?"

- *100% of new revenue should go to [CHOICE]*
- *Some new revenue should go to at least one other area*

Question 3A is a follow up question to Question 3 asking respondents if all new revenue should go to their selected choice or if it should go to at least one other area. The majority of respondents thought that some revenue could also go to at least one other area.

Q3A			
		Frequency	Valid Percent
Valid	Refused	3	0.6
	100% of new revenue should go to [choice]	125	28.4
	Some new revenue should also go to at least one other area	313	71
	Total	441	100
Missing	System	608	
Total		1049	100

Question 3B

"Although you didn't pick [IF Q3a=1, randomly display one of the following: expanding multi-modal service (buses, trains, bicycles, and pedestrians) OR improving the safety of the traveling public OR modernizing transportation technologies (wireless connectivity, charging stations, electrify fleet)][IF Q3a=2, randomly show one of the following: maintaining and building highways OR improving the safety of the traveling public OR modernizing transportation technologies (wireless connectivity, charging stations, electrify fleet)][IF Q3a=3, randomly show one of the following: maintaining and building highways OR expanding multi-modal service (buses, trains, bicycles, and pedestrians) OR modernizing transportation technologies (wireless connectivity, charging stations, electrify fleet)][IF Q3a=4, randomly show one of the following: maintaining and building highways OR expanding multi-modal service (buses, trains, bicycles, and pedestrians) OR improving the safety of the traveling public] for your last answer, would you support or oppose the state spending any new transportation revenues on it?"

- *Support*
- *Oppose*

Question 3B is another follow up to Question 3. This question asks respondents if they would support or oppose funding going to any of the services that they did **not** select in Question 3. Support was fairly high amongst all modes presented, but lowest for modernizing transportation technologies at only 65% support.

Q3Ba. Although you didn't pick expanding multi-modal service (buses, trains, bicycles, and pedestrians) for your last answer, would you support or oppose the state spending any new transportation revenues on it?			
		Frequency	Valid Percent
Valid	Support	87	73.8
	Oppose	31	26.2
	Total	118	100
Missing	System	932	
Total		1049	100

Q3Bb. Although you didn't pick improving safety of the traveling public for your last answer, would you support or oppose the state spending any new transportation revenues on it?			
		Frequency	Valid Percent
Valid	Support	136	83.8
	Oppose	26	16.2
	Total	163	100
Missing	System	887	
Total		1049	100

Q3Bc. Although you didn't pick modernizing transportation technologies (wireless connectivity, charging stations, electrify fleet) for your last answer, would you support or oppose the state spending any new transportation revenues on it?			
		Frequency	Valid Percent
Valid	Support	93	65.3
	Oppose	49	34.7
	Total	142	100
Missing	System	907	
Total		1049	100

Question 3B-2

“And would you [IF Q3B2=1: support][IF Q3B2=2: oppose] this strongly, or not strongly?”

- *Strongly*
- *Not strongly*

Question 3B-2 is a follow up to Question B, asking respondents if they support or oppose funding for the given category strongly or not strongly. Those who remarked that they would oppose funding felt more strongly than those who would support funding.

Q3B-2			
		Frequency	Valid Percent
Valid	Strongly	307	57.2
	Not strongly	230	42.8
	Total	537	100
Missing	System	513	
Total		1049	100

Question 4

SPLIT 1: "When you buy gasoline, you pay both state and federal taxes. What do you think is the amount of state tax, per gallon of gas, that just North Carolina charges? Our results depend on your honest estimate, so please do not search for the answer."

- *0 to 24 cents per gallon*
- *25 to 44 cents per gallon*
- *45 to 64 cents per gallon*
- *65 to 89 cents per gallon*
- *90 cents per gallon or more*

SPLIT 2: "Q4B1 [N; prompt]
When you buy gasoline, you pay both state and federal taxes. What do you think is the amount of state tax, per gallon of gas, that just North Carolina charges? Our results depend on your honest estimate, so please do not search for the answer."

- *[NUMERIC TEXTBOX, RANGE 0-999] cents*

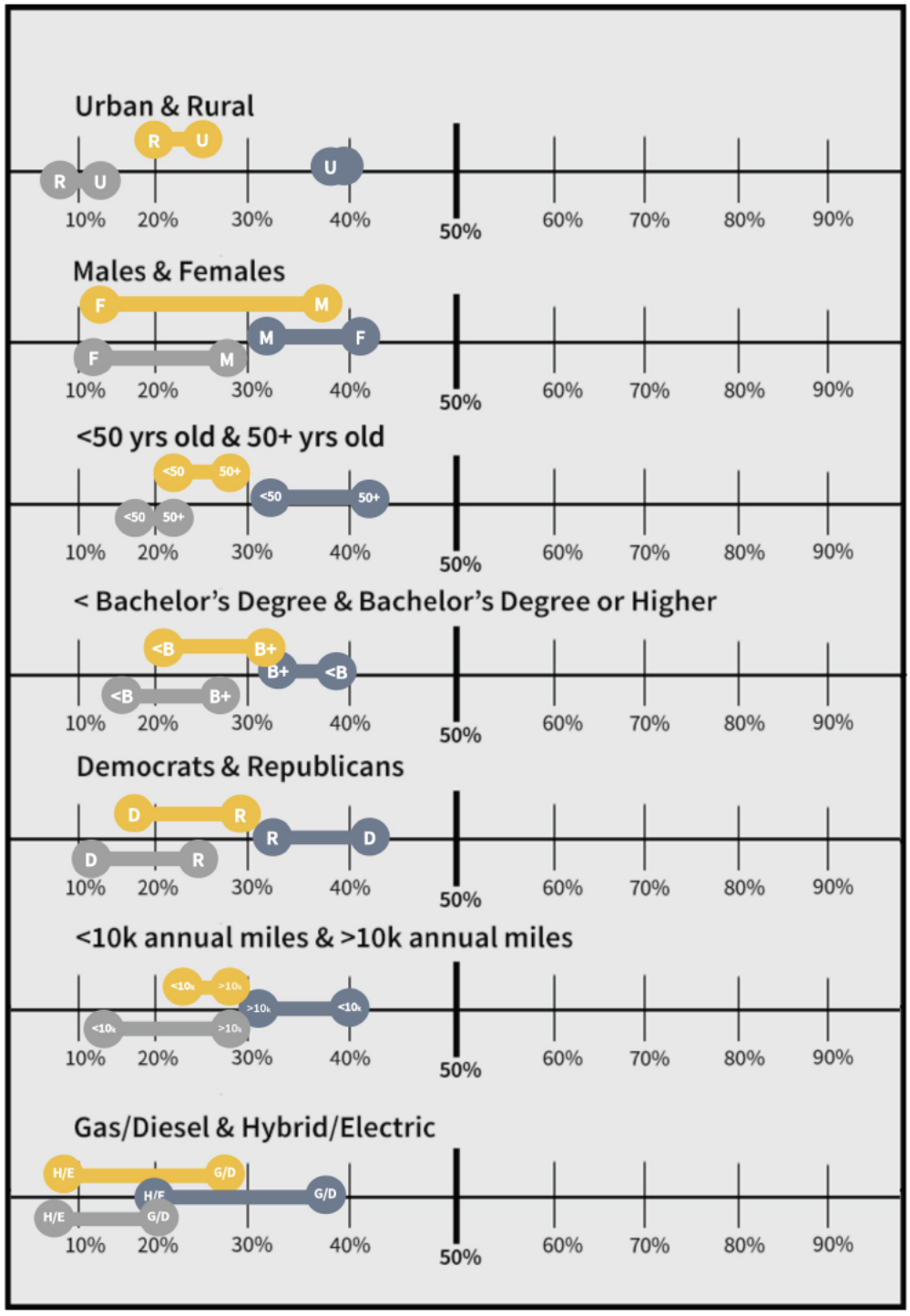
SPLIT 3: "When you buy gasoline, you pay both state and federal taxes. What do you think is the amount of state tax, per gallon of gas, that just North Carolina charges? Our results depend on your honest estimate, so please do not search for the answer."

- *[NUMERIC TEXTBOX, RANGE 0-9] dollars and [NUMERIC TEXTBOX, RANGE 0-99] cents*

Question 4 asked respondents to estimate the gas tax in North Carolina. It was split into 3 different ballots: the first was multiple choice, the second was open answer with a textbox for cents only, and the third was open answer with a textbox for both dollars and cents. Respondents who received the multiple-choice ballot guessed correctly at a higher rate than those who received open answer ballots. Split 2 recipients underestimated the gas tax, while Split 3 recipients overestimated the gas tax.

Q4A Split 1			
		Frequency	Valid Percent
Valid	0 to 24 cents per gallon	156	31.9
	25 to 44 cents per gallon	184	37.6
	45 to 64 cents per gallon	99	20.3
	65 to 89 cents per gallon	34	7
	90 cents per gallon or more	16	3.2
	Total	489	100
Missing	System	561	
Total		1049	100
Q4 Split 2			
		Frequency	Valid Percent
Valid	0 to 24 cents per gallon	121	48.9
	25 to 44 cents per gallon	61	24.5
	45 to 64 cents per gallon	38	15.4
	65 to 89 cents per gallon	22	9
	90 cents per gallon or more	5	2.2
	Total	248	100
Missing	System	801	
Total		1049	100
Q4 Split 3			
		Frequency	Valid Percent
Valid	0 to 24 cents per gallon	45	18.1
	25 to 44 cents per gallon	47	18.9
	45 to 64 cents per gallon	32	13
	65 to 89 cents per gallon	31	12.4
	90 cents per gallon or more	93	37.6
	Total	247	100
Missing	System	803	
Total		1049	100

Percentage of group who responded accurately, difference by group



Blue bubbles are for Ballot A, yellow bubbles are for Ballot B, and grey bubbles are for Ballot C.

Question 5

"You estimated the state gas tax in North Carolina is in the range of [IF Q4A=1: 0 to 24][IF Q4A=2: 25 to 44][IF Q4A=3: 45 to 64][IF Q4A=4: 65 to 89][IF Q4A=5: 90 or more] cents per gallon of gas. How confident are you about your estimate?"

- *Confident*
- *Not very confident*
- *I guessed*

Question 5A asked respondents to Question 4 how confident they were about their response. Respondents who reported being confidents actually guessed incorrectly at a higher rate than those who were not very confident or guessed.

Q5			
		Frequency	Valid Percent
Valid	Confident	135	15.9
	Not very confident	248	29.1
	I guessed	467	54.9
	Total	850	100
Missing	System	200	
Total		1049	100

Question 6

SPLIT 1: "The average North Carolina vehicle owner who travels 12,000 miles in one year would pay approximately $200 per year in state gas tax. Choose which statement you agree with most:"

- *$200 per year is inexpensive for driving for 12,000 miles on roads in NC*
- *$200 per year is a fair price for driving for 12,000 miles on roads in NC.*
- *$200 per year is expensive for driving for 12,000 miles on roads in NC.*

SPLIT 2: "The average North Carolina vehicle owner who travels 12,000 miles in one year would pay approximately $15 per month in state gas tax. Choose which statement you agree with most:"

- *$15 per month is inexpensive for driving for 12,000 miles on roads in NC.*
- *$15 per month is a fair price for driving for 12,000 miles on roads in NC.*
- *$15 per month is expensive for driving for 12,000 miles on roads in NC.*

Question 6 asked respondents to rate the stated gas tax as expensive, inexpensive, or fair. Most respondents found the gas tax to be fair. Respondents who received Split 2, the monthly fee, found the gas tax to be fair or inexpensive more so than those who received Split 1, the annual fee.

Q6 Split 1			
		Frequency	Valid Percent
Valid	Refused	6	1.1
	$200 per year is inexpensive for driving for 12,000 miles on roads in NC.	61	11.4
	$200 per year is a fair price for driving for 12,000 miles on roads in NC.	301	56.2
	$200 per year is expensive for driving for 12,000 miles on roads in NC.	168	31.4
	Total	536	100.0
Missing	System	520	
Total		1056	
Q6 Split 2			
		Frequency	Valid Percent
Valid	Refused	1	0.2
	$15 per month is inexpensive for driving for 12,000 miles on roads in NC.	91	17.5
	$15 per month is a fair price for driving for 12,000 miles on roads in NC.	328	63.0
	$15 per month is expensive for driving for 12,000 miles on roads in NC.	101	19.3
	Total	520	100.0
Missing	System	536	
Total		1056	

Question 7

SPLIT 1: "Which kind of revenue sources should North Carolina rely on most for building and maintaining roads?"

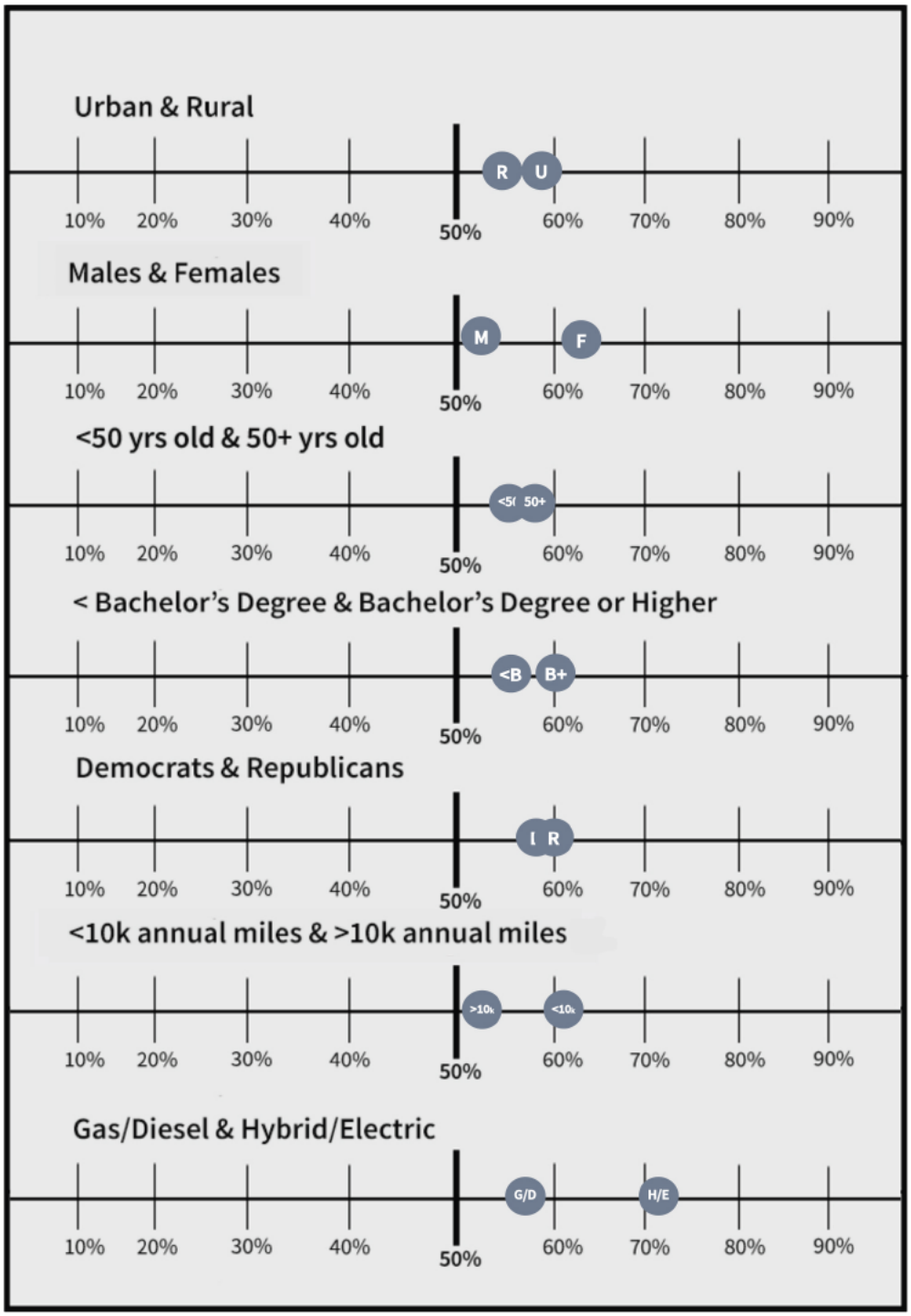
SPLIT 2: "Which kind of revenue sources should North Carolina rely on most for building and maintaining roads? Some people say revenue sources should be directly related to road use because drivers who use the roads more often create a greater share of their costs. Others say revenue sources should be supported by the general public because everyone benefits from good roads."

- *Sources of revenue directly related to the use of the road (such as a tax on gasoline purchases, fees paid to use toll roads, or based on the total number of miles driven in one year)*
- *Sources of revenue supported by the general public (such as general sales taxes, property tax, or vehicle property tax)*

Question 7 was split into two ballots; respondents who received Split 1 did not receive any contextual information while respondents who received Split 2 received additional information regarding outside opinions. Support for usage-based funding was more popular, and support was about 5 points higher than in 2019.

Q7			
		Frequency	Valid Percent
Valid	Revenue directly related to the use of the road	479	57.4
	Revenue supported by the general public	355	42.6
	Total	834	100
Missing	System	216	
Total		1049	100

Percentage who preferred usage-based, difference by group



Question 8

"If state leaders decided they needed to raise new revenue to repair the state's road network, which of the following options would you prefer North Carolina rely on?"

SPLIT 1:

- *A new fee on miles driven*
- *An increase in the tax on gasoline purchases*
- *An increase in the general state sales tax*

SPLIT 2:

- *A new half of 1 cent fee per mile driven*
- *An increase of 9 cents per gallon in the tax on gasoline purchases*
- *An increase of half of 1 cent per dollar in the general state sales tax*

SPLIT 3:

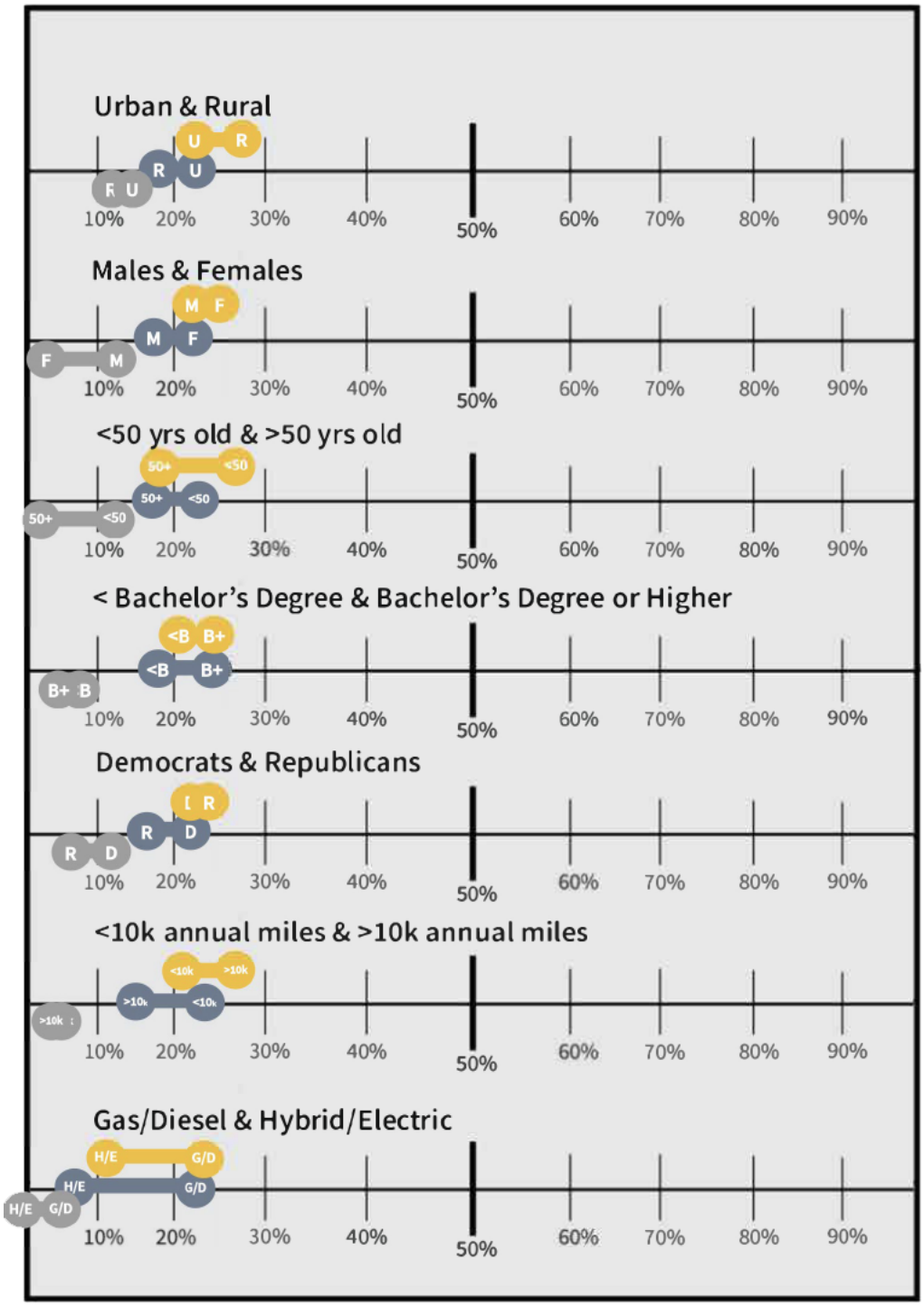
- *A new 1 cent fee per mile driven*
- *An increase of 18 cents per gallon in the tax on gasoline purchases*
- *An increase of 1 cent per dollar in the general state sales tax*

Question 8 was split into 3 different ballots with varying response options. Split 1 presented non-specific options regarding raising new revenue with no specific fees mentioned. Split 2 provided a specific amount for the revenue options. Split 3 also provided specific amounts which were higher than the amounts in Split 2. Support for a mileage-based usage fee was continually the least popular option, but support decreased sharply in Split 3.

Q8 Split 1			
		Frequency	Valid Percent
Valid	An increase in the tax on gasoline purchases	123	44.3
	An increase in the general state sales tax	97	35.1
	A new fee on miles driven	57	20.6
	Total	276	100
Missing	System	773	
Total		1049	100
Q8 Split 2			
		Frequency	Valid Percent

Valid	An increase of 9 cents per gallon in the tax on gasoline purchases	79	27.6
	A new half of 1 cent fee for each mile driven	66	22.9
	An increase of half of 1 cent per dollar in the general state sales tax	143	49.5
	Total	288	100
Missing	System	761	
Total		1049	100
Q8 Split 3			
		Frequency	Valid Percent
Valid	An increase of 18 cents per gallon in the tax on gasoline purchases	59	27.6
	A new 1 cent fee for each mile driven	15	7
	An increase of 1 cent per dollar in the general state sales tax	140	65.3
	Total	215	100
Missing	System	835	
Total		1049	100

Percentage who preferred MBUF, difference by group



Question 9A

SPLIT 1: “For the previous question, you chose a new fee on miles driven. Is there a particular reason why?”

SPLIT 2: “For the previous question, you did not choose a new fee on miles driven. Is there a particular reason why not?”

Question 9A acts as a follow up to Question 8, asking respondents either why they chose a new fee on miles driven or why they did not choose a new fee on miles driven. The question is open-ended, and respondents filled out a text box with their reasoning. Some samples of what respondents said include:

"There has to be a way to charge electric and high mileage vehicles."

"People driving through our state or visiting are not paying their fair share."

"People with lower income should not be taxed for driving."

"Everyone uses the roads to a certain degree. Some businesses focus on driving (taxis, moving companies, companies that primarily deliver their product to their clients than their clients coming to them, etc.) and would be impacted more than people who benefit from improved infrastructure but don't drive as much."

"I commute over 100 miles a day for work, and I don't want to be taxed for living far from my job."

"If a vehicle is fuel inefficient, [the gas tax] is more motivation to seek a more environmentally friendly vehicle."

Question 9B

SPLIT 1: "For the previous question, you chose a new fee on miles driven. Is there a particular reason why? Select as many of the following reasons that apply. If your reason is not listed, you can enter it after clicking on the "other" answer option."
SPLIT 2: "For the previous question, you did not choose a new fee on miles driven. Is there a particular reason why not? Select as many of the following reasons that apply. If your reason is not listed, you can enter it after clicking on the "other" answer option."

- *Privacy concerns about personal information*
- *Everyone pays fair share*
- *Amount paid by rural and urban drivers is fair*
- *Logistics/Process for how funds are collected*
- *Mileage by out-of-state visitors and by residents travelling out-of-state are taxed fairly*
- *Other (specify)*

Question 9B is an alternate split to Question 9A and provides multiple choice options for respondents. The question is split between those who did choose and those who did not choose a new fee on miles driven. For the purpose of analysis, all responses mentioning fairness were analyzed together as one variable.

Q9B Split 1		
	Frequency	Valid Percent
Privacy concerns about personal information	14	9.8
Everyone pays fair share	66	45.9
Amount paid by rural and urban drivers is fair	9	5.9
Logistics/Process for how funds are collected	15	10.4
Mileage by out-of-state visitors and by residents travelling out-of-state are taxed fairly	21	14.3
Other (specify)	20	13.7
Total	143	100
Q9B Split 2		
	Frequency	Valid Percent
Privacy concerns about personal information	115	17.8
Everyone pays fair share	177	27.3
Amount paid by rural and urban drivers is fair	59	9.1
Logistics/Process for how funds are collected	135	20.8
Mileage by out-of-state visitors and by residents travelling out-of-state are taxed fairly	113	17.5
Other (specify)	49	7.5
Total	649	100

Question 10

SPLIT 1: "Hybrid vehicles are typically more fuel efficient than gasoline-powered vehicles. For this reason, drivers of a hybrid vehicle pay lower taxes for their use of the roadway because they travel further per each gallon of gas purchased. Choose which statement you agree with most."

- *I support hybrid vehicle drivers paying less to use the roads.*
- *I oppose hybrid vehicle drivers paying less to use the roads.*

SPLIT 2: "Hybrid vehicles are typically more fuel efficient than gasoline-powered vehicles. For this reason, drivers of a hybrid vehicle pay lower taxes for their use of the roadway because they travel further per each gallon of gas purchased. Drivers of electric vehicles do not pay any gas tax – however, they do pay $130 each year for their use of the roads. Choose which statement you agree with most."

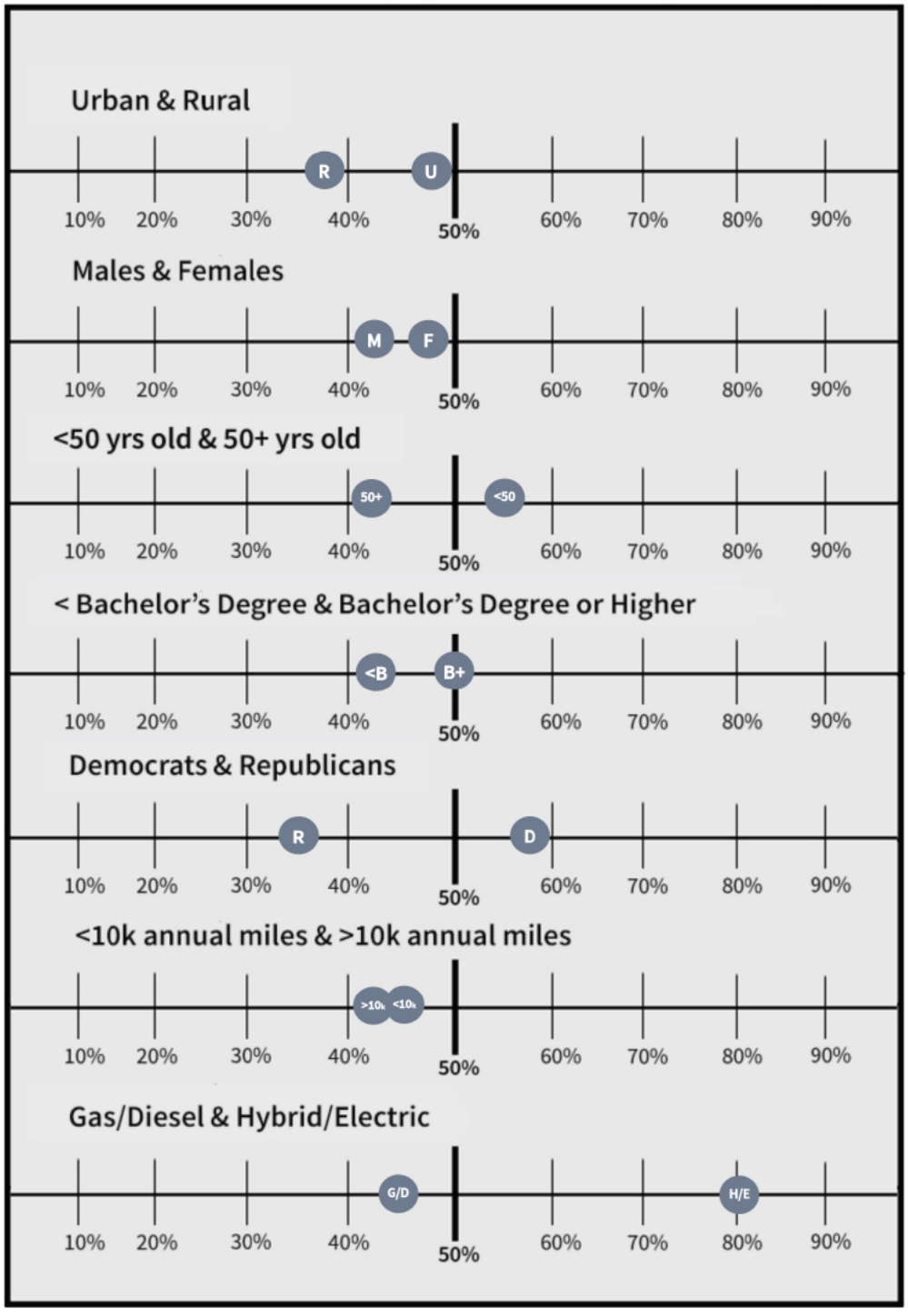
- *I support hybrid and electric vehicle drivers paying less to use the roads.*
- *I oppose hybrid and electric vehicle drivers paying less to use the roads.*

Question 10 is split into two ballots: the first containing little background information and only asking about hybrid vehicles, the second containing more background information and asking about both hybrid and electric vehicles. Support was split and decreased slightly in the second ballot with information about electric vehicles.

Q10 Split 1			
		Frequency	Valid Percent
Valid	I support hybrid vehicle drivers paying less to use the roads	207	48.3
	I oppose hybrid vehicle drivers paying less to use the roads	221	51.7
	Total	428	100
Missing	System	622	
Total	1049	100	

Q10 Split 2			
		Frequency	Valid Percent
Valid	I support hybrid and electric vehicle drivers paying less to use the roads	175	46
	I oppose hybrid and electric vehicle drivers paying less to use the roads	205	54
	Total	379	100
Missing	System	670	
Total	1049	100	

Percentage who supported hybrid & electric vehicles paying less to use the road, difference by group



Question 11

"Would you support or oppose the state adding a vehicle weight fee to account for the extra damage heavy vehicles cause, excluding vehicles for personal use?"

- *I support adding a vehicle weight fee*
- *I oppose adding a vehicle weight fee*

Question 11 asks respondents whether the support or oppose adding a vehicle weight fee. The majority of respondents would support adding this fee.

Q11			
		Frequency	Valid Percent
Valid	I support adding a vehicle weight fee	646	62.4
	I oppose adding a vehicle weight fee	389	37.6
	Total	1035	100
Missing	System	14	
Total		1049	100

Question 12

"Would you support or oppose increasing taxes on your residential electricity usage if the new revenue was devoted to meeting the state's transportation needs?"

- *Support*
- *Oppose*

Question 12 asked respondents whether they support or oppose an increase on residential electricity taxes. Few respondents would support this fee.

Q12			
		Frequency	Valid Percent
Valid	Support	145	13.9
	Oppose	895	86.1
	Total	1040	100
Missing	System	10	
Total		1049	100

Question 12B

"And would you [support/oppose] this strongly, or not strongly?"

- *Strongly*
- *Not strongly*

Question 12B is a follow-up to Question 12, asking respondents if they oppose or support increasing taxes on residential electricity usage strongly or not strongly.

Q12B			
		Frequency	Valid Percent
Valid	Strongly	631	77.7
	Not strongly	181	22.3
	Total	812	100
Missing	System	237	
Total		1049	100

Question 13

"All agencies must prioritize objectives. Which one of these two objectives should the North Carolina Department of Transportation (NCDOT) prioritize??"
SPLIT 1:

- *Reducing traffic congestion*
- *Maintaining and expanding our streets, roads, and highways*

SPLIT 2:

- *Maintaining and expanding our streets, roads, and highways*
- *Expanding public transportation*

SPLIT 3:

- *Reducing traffic congestion*
- *Expanding public transportation*

Question 13 was split into 3 ballots, each of which asked respondents to answer which objective should be prioritized. Respondents consistently ranked maintaining and expanding streets, roads, and highways as a higher priority; in Split 3, reducing traffic congestion was rated as the higher priority over expanding public transportation.

Q13 Split 1			
		Frequency	Valid Percent
Valid	Maintaining and expanding our streets, roads, and highways	234	68.8
	Reducing traffic congestion	106	31.2
	Total	341	100
Missing	System	709	
Total		1049	100
Q13 Split 2			
		Frequency	Valid Percent
Valid	Maintaining and expanding our streets, roads, and highways	276	76.3
	Expanding public transportation	86	23.7
	Total	361	100
Missing	System	688	
Total		1049	100

Q13 Split 3			
		Frequency	Valid Percent
Valid	Expanding public transportation	123	37.1
	Reducing traffic congestion	209	62.9
	Total	332	100
Missing	System	717	
Total		1049	100

Question 14

"Please indicate your level of agreement with the following statement for transportation and mobility services in North Carolina: "I am satisfied with the services provided.""

- *Strongly agree*
- *Agree*
- *Neutral*
- *Disagree*
- *Strongly disagree*
- *Does not apply*

Respondents were asked about their level of satisfaction with transportation and mobility services in North Carolina. An aggregate of 73.2% of respondents reported that they were satisfied with the services provided in North Carolina.

Q14			
		Frequency	Valid Percent
Valid	Strongly agree	51	4.8
	Agree	264	25.2
	Neutral	452	43.2
	Disagree	189	18.1
	Strongly disagree	56	5.4
	Does not apply	34	3.3
	Total	1046	100
Missing	System	10	
Total		1056	100

Question 15

"Which fuel category best describes the vehicle you drive most frequently?"

- *Gas*
- *Diesel*
- *Hybrid*
- *Electric*
- *Other (specify) [TEXTBOX]*
- *I don't use a vehicle/not applicable*

Respondents were asked to describe the vehicle they drive most frequently. The vast majority of respondents reported that they drive a gas vehicle.

Q15			
		Frequency	Valid Percent
Valid	Gas	940	94.6
	Diesel	13	1.3
	Hybrid	29	2.9
	Electric	12	1.2
	Total	994	100
Missing	System	56	
Total		1049	100

Question 16

"For the vehicle you drive most frequently, about how many miles did you drive in the past 12 months?"

- Less than 1,000 miles
- 1,000 miles
- 2,000 miles
- 3,000 miles
- 4,000 miles
- 5,000 miles
- 6,000 miles
- 7,000 miles
- 8,000 miles
- 9,000 miles
- 10,000 miles
- 11,000 miles
- 12,000 miles
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- 37,000 miles
- 38,000 miles
- 39,000 miles
- 40,000 miles
- 41,000 miles
- 42,000 miles
- 43,000 miles
- 44,000 miles
- 45,000 miles
- 46,000 miles
- 47,000 miles
- 48,000 miles
- 49,000 miles
- 50,000 miles or more

Respondents were asked to estimate how many miles they drove in the past 12 months. The plurality of respondents drove in the 5,000 to 10,000 mile range; the majority of respondents drove 20,000 miles or less.

Q17			
		Frequency	Valid Percent
Valid	1000 to 4000 miles	207	22.5
	5000 to 10000 miles	416	45.1
	11000 to 20000 miles	250	27.1
	21000 to 30000 miles	41	4.5
	31000 miles or more	8	0.9
	Total	922	100
Missing	System	128	
Total		1049	100

Question 17

"How often do you use the following modes for transportation?"
ITEMS

- *Personal car (where you are the driver)*
- *Toll roads*
- *Public transit (e.g., bus, light rail, etc.)*
- *Ride-hailing services (e.g., Uber, Lyft)*
- *Vehicle rentals, including car-share programs like Zipcar and Car2go*
- *Bicycle*
- *Walk*
- *Shared bikes, e-scooters, or other micro-mobility devices*
- *Passenger train*

RESPONSES

- *Every day*
- *Most days*
- *Once or twice a week*
- *Less than weekly*
- *Never*

Question 17 asked respondents how frequently they used a variety of different modes of transportation. Of the nine items, respondents were randomly shown four options. Most respondents used a personal car eat least once a week.

Personal Car			
		Frequency	Valid Percent
Valid	Every day	230	50.7
	Most days	121	26.8
	Once or twice a week	62	13.7
	Less than weekly	24	5.2
	Never	16	3.6
	Total	454	100
Missing	System	595	
Total		1049	100
Toll Roads			
		Frequency	Valid Percent
Valid	Every day	6	1.4
	Most days	6	1.4

	Once or twice a week	5	1.2
	Less than weekly	114	26.2
	Never	304	69.8
	Total	435	100
Missing	System	614	
Total		1049	100
Public transit			
		Frequency	Valid Percent
Valid	Every day	3	0.7
	Most days	3	0.6
	Once or twice a week	11	2.4
	Less than weekly	56	11.8
	Never	401	84.5
	Total	475	100
Missing	System	574	
Total		1049	100
Ride-hailing services (e.g. Uber, Lyft)			
		Frequency	Valid Percent
Valid	Every day	2	0.4
	Most days	2	0.5
	Once or twice a week	7	1.5
	Less than weekly	113	24.1
	Never	346	73.5
	Total	471	100
Missing	System	578	
Total		1049	100
Vehicle rentals, including car-share programs like Zipcar and Car2go			
		Frequency	Valid Percent
Valid	Every day	0	0.1
	Most days	3	0.7
	Once or twice a week	4	0.9

	Less than weekly	47	11.3
	Never	362	87.1
	Total	416	100
Missing	System	634	
Total		1049	100
Bicycle			
		Frequency	Valid Percent
Valid	Every day	4	0.8
	Most days	6	1.3
	Once or twice a week	10	2.1
	Less than weekly	63	13
	Never	404	82.8
	Total	488	100
Missing	System	561	
Total		1049	100
Walk			
		Frequency	Valid Percent
Valid	Every day	68	13.7
	Most days	43	8.7
	Once or twice a week	78	15.6
	Less than weekly	109	22
	Never	199	40
	Total	497	100
Missing	System	553	
Total		1049	100
Shared bikes, e-scooters, or other micro-mobility devices			
		Frequency	Valid Percent
Valid	Most days	1	0.2
	Once or twice a week	5	1.1
	Less than weekly	32	7
	Never	425	91.7

	Total	463	100
Missing	System	586	
Total		1049	100
Passenger train			
		Frequency	Valid Percent
Valid	Every day	4	1
	Once or twice a week	5	1.1
	Less than weekly	26	5.8
	Never	414	92.1
	Total	450	100
Missing	System	600	
Total		1049	100

Conclusions

Survey Findings

Several findings emerged regarding North Carolina residents' perceptions of transportation taxes and fees. Overall, North Carolinians support increasing transportation funding. Whether that funding should come from general sources or usage-based fees is mixed; most respondents would prefer either an increase in the general state sales tax or the gas tax over a new, mileage-based usage fee. Although much attention has been directed towards privacy concerns for vehicle miles driven fees, the most cited reasoning for not choosing a MBUF was fairness rather than privacy concerns. There also seemed to be very few substantial differences in preference and opinion between demographic groups. Despite popular opinion, this study showed that rural and urban North Carolinians share many common opinions when it comes to transportation funding in the state.

The inclusion of context and information in various split ballot questions does seem to have an effect on how respondents answered. For example, when asked on their opinion on government spending on roads in North Carolina, respondents who received contextual information ("Transportation experts generally agree that funding in North Carolina has failed to keep up with growing demands") supported an increase in funding at a significantly higher rate than those who did not receive this information (55% versus 42%).

Findings Relevant for NCDOT

Several findings emerged that are relevant to NCDOT. Across all three ballots asking respondents to estimate the state gas tax, only 32.5% of respondents estimated an amount within the correct range. Between the three ballots, respondents who received Split 1 (multiple choice) estimated within the correct range at a higher rate than those who received Split 2 and Split 3, the two open-answer ballots. Respondents who received Split 2, which only allowed for the amount to be entered in cents, underestimated the gas tax; those who received Split 3, which allowed for both dollars and cents to be entered, vastly overestimated the gas tax. Despite most respondents not knowing the current gas tax, the majority of respondents think that the gas tax is fair or inexpensive.

Secondly, a majority of respondents either support increasing funding or keeping funding at current levels. While support for increasing funding is lower compared to the previous survey, it seems to have realigned into support for keeping funding at current levels rather than decreasing funding. Support for increasing funding was fairly uniform between demographic groups; the most notable difference in opinion is between Democrats and Republicans. Notably, support for an increase in funding is nearly identical between urban and rural respondents.

There is a significant preference for an increase in the sales tax and gas tax over a mileage-based usage fee. Between the three ballots, respondents increasingly supported

a new transportation portion in the general state sales tax as the proposed fee for each category was introduced or increased. Interestingly, this is contrary to another question on the survey where respondents were asked if they thought road funding should come from a usage-based fee or through general taxes; 57% of respondents indicated that they would prefer that road funding come from usage-based fees. This was a 5% increase in support from the 2019 survey. Respondents who said they would prefer a MBUF and those who would prefer an increase in the gas or sales tax both cited fairness as their reasoning for their selection, although it was more highly cited amongst those who chose MBUF. Although most respondents would support an increase in the gas tax or sales tax, there is some support for a usage-based fee.

Future Research Needs

During the course of research, it became clear that there are several specific topics and questions that are worth a more in-depth investigation, such as the effects of information on respondents, the difference between probability sampling and non-probability sampling, difference between multiple choice and open response answers, and more topics. Additional future research could be conducted to assess these topics. Additionally, as this was the second time this survey was conducted, there is the opportunity for it to be re-administered again in the future. Longitudinal studies can determine patterns over time, ensure focus and validity, and track long-term trends. For example, the Mineta Transportation Institute has conducted 10 surveys over the past 10 years assessing Americans' opinions about federal tax options to support transportation. As a result of this effort, researchers are able to assess funding perception trends over time. Future surveys could help provide an overall perspective on how attitudes toward transportation funding by North Carolinians have changed.

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Appendix

Appendix 1: Cross-Tabulation Tables

Question 1

"To start, how important are transportation issues to you?"

Q1		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Not at all important	80	7.6	96	5.2
	Not too important	217	20.7	231	12.4
	Somewhat important	407	38.8	757	40.7
	Very important	345	32.9	774	41.6
	Total	1049	100	1858	100
Missing	System	1		2	
Total		1049	100	1860	

Question 2

SPLIT 1: "What comes closest to your view regarding government spending on roads in North Carolina? North Carolina needs to:"

SPLIT 2: "Transportation experts generally agree that funding in North Carolina has failed to keep up with growing demands. What comes closest to your view regarding government spending on roads in North Carolina? North Carolina needs to:"

Q2 Split 1		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Increase spending	221	41.8	457	45.8
	Keep spending current amount	276	52.2	434	43.4
	Decrease spending	32	6.1	108	10.8
	Total	529	100	999	100
Missing	System	520		861	
Total	1049	100		1860	

Q2 Split 2		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent

Valid	Increase spending	286	55	509	59.1
	Keep spending current amount	208	40	272	31.5
	Decrease spending	26	5	81	9.3
	Total	520	100	861	100
Missing	System	530		999	
Total	1049	100		1860	

Question 2A

"You said North Carolina needs to [increase spending/decrease spending/keep spending its current amount]. Do you feel that way strongly, or not strongly?"

Q2A		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Strongly	615	58.7	652	65.3
	Not strongly	433	41.3	346	34.7
	Total	1049	100	999	100
Missing	System	1		861	
Total	1049	100		1860	

Question 3

"If the state of North Carolina increased its spending on transportation, where do you think new spending is most needed?"

Q3		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Expanding multi-modal service	263	24.9	388	21
	Improving the safety of the traveling public	177	16.8	177	24.1
	Maintaining and building highways	529	50.1	529	41.7
	Modernizing transportation technologies	87	8.2	87	13.3
	Total	1056	100	1181	100
Total		1056		1181	

Question 3A

"Should 100% of any new revenue go to [maintaining and building highways/ expanding multi-modal service (buses, trains, bicycles, and pedestrians)/improving the safety of the traveling public/modernizing transportation technologies (wireless connectivity,

charging stations, electrify fleet)], or should some of it also go to at least one other area?"

Q3A		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Refused	3	0.6	0	0
	100% of new revenue should go to [choice]	125	28.4	306	32.6
	Some new revenue should also go to at least one other area	313	71	633	67.4
	Total	441	100	939	100
Missing	System	608		921	
Total	1049	100		1860	

Question 3B

"Although you didn't pick [IF Q3a=1, randomly display one of the following: expanding multi-modal service (buses, trains, bicycles, and pedestrians) OR improving the safety of the traveling public OR modernizing transportation technologies (wireless connectivity, charging stations, electrify fleet)][IF Q3a=2, randomly show one of the following: maintaining and building highways OR improving the safety of the traveling public OR modernizing transportation technologies (wireless connectivity, charging stations, electrify fleet)][IF Q3a=3, randomly show one of the following: maintaining and building highways OR expanding multi-modal service (buses, trains, bicycles, and pedestrians) OR modernizing transportation technologies (wireless connectivity, charging stations, electrify fleet)][IF Q3a=4, randomly show one of the following: maintaining and building highways OR expanding multi-modal service (buses, trains, bicycles, and pedestrians) OR improving the safety of the traveling public] for your last answer, would you support or oppose the state spending any new transportation revenues on it?"

Q3Ba. Although you didn't pick expanding multi-modal service (buses, trains, bicycles, and pedestrians) for your last answer, would you support or oppose the state spending any new transportation revenues on it?		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Support	87	73.8	125	83.8
	Oppose	31	26.2	24	16.2
	Total	118	100	149	100
Missing	System	932		1711	
Total	1049	100		1860	

Q3Bb. Although you didn't pick improving safety of the traveling public for your last answer, would you support or oppose the state spending any new transportation revenues on it?		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Support	136	83.8	202	83.6
	Oppose	26	16.2	39	16.4
	Total	163	100	241	100
Missing	System	887		1619	
Total	1049	100		1860	
Q3Bc. Although you didn't pick modernizing transportation technologies (wireless connectivity, charging stations, electrify fleet) for your last answer, would you support or oppose the state spending any new transportation revenues on it?		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Support	93	65.3	186	88
	Oppose	49	34.7	25	12
	Total	142	100	211	100
Missing	System	907		1649	
Total	1049	100		1860	

Question 3B-2

“And would you [IF Q3B2=1: support][IF Q3B2=2: oppose] this strongly, or not strongly?”

Q3B-2		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent

Valid	Strongly	307	57.2	560	65
	Not strongly	230	42.8	302	35
	Total	537	100	861	100
Missing	System	513		999	
Total	1049	100		1860	

Question 4

SPLIT 1: "When you buy gasoline, you pay both state and federal taxes. What do you think is the amount of state tax, per gallon of gas, that just North Carolina charges? Our results depend on your honest estimate, so please do not search for the answer."

- **0 to 24 cents per gallon**
- **25 to 44 cents per gallon**
- **45 to 64 cents per gallon**
- **65 to 89 cents per gallon**
- **90 cents per gallon or more**

SPLIT 2: "Q4B1 [N; prompt]
When you buy gasoline, you pay both state and federal taxes. What do you think is the amount of state tax, per gallon of gas, that just North Carolina charges? Our results depend on your honest estimate, so please do not search for the answer."

- **[NUMERIC TEXTBOX, RANGE 0-999] cents**

SPLIT 3: "When you buy gasoline, you pay both state and federal taxes. What do you think is the amount of state tax, per gallon of gas, that just North Carolina charges? Our results depend on your honest estimate, so please do not search for the answer."

- **[NUMERIC TEXTBOX, RANGE 0-9] dollars and [NUMERIC TEXTBOX, RANGE 0-99] cents**

Q4A Split 1		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	0 to 24 cents per gallon	156	31.9	297	31.6
	25 to 44 cents per gallon	184	37.6	380	40.5
	45 to 64 cents per gallon	99	20.3	174	18.5
	65 to 89 cents per gallon	34	7	48	5.1
	90 cents per gallon or more	16	3.2	40	4.3
	Total	489	100	939	100
Missing	System	561		921	
Total	1049	100		1860	

Q4 Split 2		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent

Valid	0 to 24 cents per gallon	121	48.9	295	55.4
	25 to 44 cents per gallon	61	24.5	117	22
	45 to 64 cents per gallon	38	15.4	57	10.8
	65 to 89 cents per gallon	22	9	19	3.7
	90 cents per gallon or more	5	2.2	43	8.2
	Total	248	100	532	100
Missing	System	801		1328	
Total	1049	100		1860	

Q4 Split 3		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	0 to 24 cents per gallon	45	18.1	44	13.3
	25 to 44 cents per gallon	47	18.9	50	15.2
	45 to 64 cents per gallon	32	13	44	13.4
	65 to 89 cents per gallon	31	12.4	45	13.8
	90 cents per gallon or more	93	37.6	146	44.3
	Total	247	100	329	100
Missing	System	803		1531	
Total	1049	100		1860	

Question 5

“You estimated the state gas tax in North Carolina is in the range of [IF Q4A=1: 0 to 24][IF Q4A=2: 25 to 44][IF Q4A=3: 45 to 64][IF Q4A=4: 65 to 89][IF Q4A=5: 90 or more] cents per gallon of gas. How confident are you about your estimate?”

Q5A		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Confident	135	15.9	423	23.7
	Not very confident	248	29.1	667	37.4
	I guessed	467	54.9	695	38.9
	Total	850	100	1785	100
Missing	System	200		74	
Total	1049	100		1860	

Question 6

SPLIT 1: "The average North Carolina vehicle owner who travels 12,000 miles in one year would pay approximately $200 per year in state gas tax. Choose which statement you agree with most:"

- **$200 per year is inexpensive for driving for 12,000 miles on roads in NC**
- **$200 per year is a fair price for driving for 12,000 miles on roads in NC.**
- **$200 per year is expensive for driving for 12,000 miles on roads in NC.**

SPLIT 2: "The average North Carolina vehicle owner who travels 12,000 miles in one year would pay approximately $15 per month in state gas tax. Choose which statement you agree with most:"

- **$15 per month is inexpensive for driving for 12,000 miles on roads in NC.**
- **$15 per month is a fair price for driving for 12,000 miles on roads in NC.**
- **$15 per month is expensive for driving for 12,000 miles on roads in NC.**

Q6 Split 1		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Refused	6	1.1	0	0
	$200 per year is inexpensive for driving for 12,000 miles on roads in NC.	61	11.4	120	12
	$200 per year is a fair price for driving for 12,000 miles on roads in NC.	301	56.2	558	56
	$200 per year is expensive for driving for 12,000 miles on roads in NC.	168	31.4	318	31.9
	Total	536	100	996	100
Missing	System	520		864	
Total		1056		1860	

Q6 Split 2		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Refused	1	0.2	0	0
	$15 per month is inexpensive for driving for 12,000 miles on roads in NC.	91	17.5	139	16.2
	$15 per month is a fair price for driving for 12,000 miles on roads in NC.	328	63	486	56.7
	$15 per month is expensive for driving for 12,000 miles on roads in NC.	101	19.3	232	27.1
	Total	520	100	857	100
Missing	System	536		1003	
Total		1056		1860	

Question 7

SPLIT 1: "Which kind of revenue sources should North Carolina rely on most for building and maintaining roads?"

SPLIT 2: "Which kind of revenue sources should North Carolina rely on most for building and maintaining roads? Some people say revenue sources should be directly related to road use because drivers who use the roads more often create a greater share of their costs. Others say revenue sources should be supported by the general public because everyone benefits from good roads."

Q7		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Revenue directly related to the use of the road	479	57.4	1061	59.7
	Revenue supported by the general public	355	42.6	716	40.3
	Total	834	100	1777	100
Missing	System	216		83	
Total	1049	100		1860	

Question 8

"If state leaders decided they needed to raise new revenue to repair the state's road network, which of the following options would you prefer North Carolina rely on?"

Q8 Split 1		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	An increase in the tax on gasoline purchases	123	44.3	238	39.4
	An increase in the general state sales tax	97	35.1	209	34.5
	A new fee on miles driven	57	20.6	158	26.1
	Total	276	100	605	100
Missing	System	773		1255	
Total	1049	100		1860	

Q8 Split 2		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	An increase of 9 cents per gallon in the tax on gasoline purchases	79	27.6	146	25.4

	A new half of 1 cent fee for each mile driven	66	22.9	159	27.6
	An increase of half of 1 cent per dollar in the general state sales tax	143	49.5	271	47
	Total	288	100	576	100
Missing	System	761		1284	
Total	1049	100		1860	

Q8 Split 3		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	An increase of 18 cents per gallon in the tax on gasoline purchases	59	27.6	134	22.3
	A new 1 cent fee for each mile driven	15	7	126	21
	An increase of 1 cent per dollar in the general state sales tax	140	65.3	342	56.7
	Total	215	100	602	100
Missing	System	835		1258	
Total	1049	100		1860	

Question 9A

SPLIT 1: "For the previous question, you chose a new fee on miles driven. Is there a particular reason why?"

SPLIT 2: "For the previous question, you did not choose a new fee on miles driven. Is there a particular reason why not?"

Q9B Split 1		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Privacy concerns about personal information	14	9.8	29	9.6
	Everyone pays fair share	66	45.9	111	37
	Amount paid by rural and urban drivers is fair	9	5.9	43	14.2
	Logistics/Process for how funds are collected	15	10.4	36	12.1
	Mileage by out-of-state visitors and by residents travelling out-of-state are taxed fairly	21	14.3	73	24.1
	Other (specify)	20	13.7	9	3

	Total	143	100	301	100
Total		143		143	

Q9B Split 2		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Privacy concerns about personal information	115	17.8	155	16.4
	Everyone pays fair share	177	27.3	270	28.6
	Amount paid by rural and urban drivers is fair	59	9.1	128	13.5
	Logistics/Process for how funds are collected	135	20.8	185	19.5
	Mileage by out-of-state visitors and by residents travelling out-of-state are taxed fairly	113	17.5	155	16.4
	Other (specify)	49	7.5	52	5.5
	Total	649	100	945	100
Total		649		945	

Question 10

SPLIT 1: "Hybrid vehicles are typically more fuel efficient than gasoline-powered vehicles. For this reason, drivers of a hybrid vehicle pay lower taxes for their use of the roadway because they travel further per each gallon of gas purchased. Choose which statement you agree with most."

- **I support hybrid vehicle drivers paying less to use the roads.**
- **I oppose hybrid vehicle drivers paying less to use the roads.**

SPLIT 2: "Hybrid vehicles are typically more fuel efficient than gasoline-powered vehicles. For this reason, drivers of a hybrid vehicle pay lower taxes for their use of the roadway because they travel further per each gallon of gas purchased. Drivers of electric vehicles do not pay any gas tax – however, they do pay $130 each year for their use of the roads. Choose which statement you agree with most."

- **I support hybrid and electric vehicle drivers paying less to use the roads.**
- **I oppose hybrid and electric vehicle drivers paying less to use the roads.**

Q10 Split 1		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	I support hybrid vehicle drivers paying less to use the roads	207	48.3	493	56.4

	I oppose hybrid vehicle drivers paying less to use the roads	221	51.7	381	43.6
	Total	428	100	875	100
Missing	System	622		985	
Total	1049	100		1860	

Q10 Split 2		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	I support hybrid and electric vehicle drivers paying less to use the roads	175	46	451	56.5
	I oppose hybrid and electric vehicle drivers paying less to use the roads	205	54	348	43.5
	Total	379	100	799	100
Missing	System	670		1061	
Total	1049	100		1860	

Question 11

"Would you support or oppose the state adding a vehicle weight fee to account for the extra damage heavy vehicles cause, excluding vehicles for personal use?"

Q11		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	I support adding a vehicle weight fee	646	62.4	994	57.5
	I oppose adding a vehicle weight fee	389	37.6	736	42.5
	Total	1035	100	1730	100
Missing	System	14		130	
Total	1049	100		1860	

Question 12

"Would you support or oppose increasing taxes on your residential electricity usage if the new revenue was devoted to meeting the state's transportation needs?"

Q12		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Support	145	13.9	445	25.7
	Oppose	895	86.1	1283	74.3

	Total	1040	100	1728	100
Missing	System	10		132	
Total	1049	100		1860	

Question 12B

"And would you [support/oppose] this strongly, or not strongly?"

Q12B		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Strongly	631	77.7	1190	71.1
	Not strongly	181	22.3	484	28.9
	Total	812	100	1674	100
Missing	System	237		186	
Total	1049	100		1860	

Question 13

"All agencies must prioritize objectives. Which one of these two objectives should the North Carolina Department of Transportation (NCDOT) prioritize??"
SPLIT 1:

- **Reducing traffic congestion**
- **Maintaining and expanding our streets, roads, and highways**

SPLIT 2:

- **Maintaining and expanding our streets, roads, and highways**
- **Expanding public transportation**

SPLIT 3:

- **Reducing traffic congestion**
- **Expanding public transportation**

Q13 Split 1		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Maintaining and expanding our streets, roads, and highways	234	68.8	401	69.8
	Reducing traffic congestion	106	31.2	173	30.2
	Total	341	100	574	100
Missing	System	709		1286	
Total	1049	100		1860	

Q13 Split 2		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Maintaining and expanding our streets, roads, and highways	276	76.3	406	72.7
	Expanding public transportation	86	23.7	153	27.3
	Total	361	100	559	100
Missing	System	688		1301	
Total	1049	100		1860	

Q13 Split 3		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Expanding public transportation	123	37.1	236	40.3
	Reducing traffic congestion	209	62.9	350	59.7
	Total	332	100	585	100
Missing	System	717		1275	
Total	1049	100		1860	

Question 14

"Please indicate your level of agreement with the following statement for transportation and mobility services in North Carolina: "I am satisfied with the services provided.""

Q14		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Strongly agree	51	4.8	109	12.6
	Agree	264	25.2	257	29.6
	Neutral	452	43.2	311	35.9
	Disagree	189	18.1	134	15.5
	Strongly disagree	56	5.4	33	3.8
	Does not apply	34	3.3	22	2.6
	Total	1046	100	867	100
Missing	System	10		993	
Total	1056	100		1860	

Question 15

"Which fuel category best describes the vehicle you drive most frequently?"

Q15		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Gas	940	94.6	1447	83.7
	Diesel	13	1.3	42	2.4
	Hybrid	29	2.9	114	6.6
	Electric	12	1.2	38	2.2
	Other	0	0	11	0.7
	I don't drive a vehicle/not applicable	0	0	76	4.4
	Total	994	100	1728	100
Missing	System	56		132	
Total	1049	100		1860	

Question 16

"For the vehicle you drive most frequently, about how many miles did you drive in the past 12 months?"

Q16		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	1000 to 4000 miles	207	22.5	420	28.2
	5000 to 10000 miles	416	45.1	620	41.6
	11000 to 20000 miles	250	27.1	367	24.6
	21000 to 30000 miles	41	4.5	56	3.8
	31000 miles or more	8	0.9	26	1.7
	Total	922	100	1490	100
Missing	System	128		370	
Total	1049	100		1860	

Question 17

"How often do you use the following modes for transportation?"

Personal Car		Ipsos		Lucid	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Every day	230	50.7	377	49.4
	Most days	121	26.8	214	28.1

	Once or twice a week	62	13.7	102	13.4
	Less than weekly	24	5.2	35	4.5
	Never	16	3.6	35	4.6
	Total	454	100	763	100
Missing	System	595		1097	
Total	1049	100		1860	
Toll Roads		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Every day	6	1.4	25	3.5
	Most days	6	1.4	43	5.9
	Once or twice a week	5	1.2	50	6.9
	Less than weekly	114	26.2	173	23.8
	Never	304	69.8	437	59.9
	Total	435	100	729	100
Missing	System	614		1131	
Total	1049	100		1860	
Public transit		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Every day	3	0.7	29	3.7
	Most days	3	0.6	40	5.2
	Once or twice a week	11	2.4	52	6.8
	Less than weekly	56	11.8	115	14.9
	Never	401	84.5	535	69.4
	Total	475	100	772	100
Missing	System	574		1088	
Total	1049	100		1860	
Ride-hailing services (e.g. Uber, Lyft)		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Every day	2	0.4	18	2.5
	Most days	2	0.5	36	5
	Once or twice a week	7	1.5	48	6.7
	Less than weekly	113	24.1	176	24.6
	Never	346	73.5	439	61.2
	Total	471	100	717	100
Missing	System	578		1143	
Total	1049	100		1860	
Vehicle rentals, including car-share programs like Zipcar and Car2go		**Ipsos**		**Lucid**	

		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Every day	0	0.1	21	2.7
	Most days	3	0.7	29	3.7
	Once or twice a week	4	0.9	39	4.9
	Less than weekly	47	11.3	130	16.6
	Never	362	87.1	567	72.1
	Total	416	100	787	100
Missing	System	634		1073	
Total	1049	100		1860	
Bicycle		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Every day	4	0.8	30	3.9
	Most days	6	1.3	37	4.9
	Once or twice a week	10	2.1	70	9.3
	Less than weekly	63	13	116	15.3
	Never	404	82.8	503	66.5
	Total	488	100	756	100
Missing	System	561		1104	
Total	1049	100		1860	
Walk		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Every day	68	13.7	121	16.2
	Most days	43	8.7	99	13.3
	Once or twice a week	78	15.6	134	17.9
	Less than weekly	109	22	164	22
	Never	199	40	229	30.7
	Total	497	100	747	100
Missing	System	553		1113	
Total	1049	100		1860	
Shared bikes, e-scooters, or other micro-mobility devices		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Most days	1	0.2	22	2.8
	Once or twice a week	5	1.1	43	5.6
	Less than weekly	32	7	47	6.2
	Never	425	91.7	58	7.6
	Total	463	100	592	77.8

Missing	System	586		762	100
Total	1049	100		1098	
Passenger train		**Ipsos**		**Lucid**	
		Frequency	Valid Percent	Frequency	Valid Percent
Valid	Every day	4	1	17	2.2
	Most days	0	0	19	2.4
	Once or twice a week	5	1.1	42	5.4
	Less than weekly	26	5.8	78	9.8
	Never	414	92.1	633	80.2
	Total	450	100	789	100
Missing	System	600		1071	
Total	1049	100		1860	

Appendix 2.1: Survey Instrument - Baseline

ITRE
Institute for Transportation Research and Education

NC STATE UNIVERSITY

2020 Survey - Baseline

Dear North Carolina resident,

We are researchers at North Carolina State University asking for your participation in a short survey to better understand how North Carolina residents feel about transportation funding.

If you choose to participate, your answers will be recorded anonymously. You are not required to answer our questions or if you start, you can stop at any time. The risks of participation are the same as those experienced in everyday life, and although you will not be compensated for participating, you could benefit by learning more about your own views about transportation issues.

By completing and returning this survey, you affirm that you are at least 18 years old and that you give your consent for the research team to use your answers in this study. If you have already completed this survey, please do not complete again.

Thank you for your participation in this important process.

Sincerely,

Daniel J Findley, Program Manager - Economic Analysis and Policy Assessment
Institute for Transportation Research and Education, North Carolina State University
919.515.8564
Daniel_Findley@ncsu.edu

1. To start, how important are transportation issues to you?
_____ (1) Very Important _____ (2) Somewhat important _____ (3) Somewhat Unimportant _____ (4) Very Unimportant

2. What comes closest to your view regarding government spending on roads in NC? NC needs to:
_____ (1) Increase spending _____ (2) Keep spending current amount _____ (3) Decrease spending

2b. Do you feel that way strongly, or not strongly?
_____ (1) Strongly _____ (2) Not Strongly

3. If the state of North Carolina increased its spending on transportation, where would new spending be most needed? (RANDOMIZE ORDER)
____ Maintain and build highways
____ Expand multi-modal service (buses, trains, bicycles, and pedestrians)
____ Improve safety of the traveling public
____ Modernize transportation technologies (wireless connectivity, charging stations, electrify fleet)

3b. Should all of any new revenue go to [insert answer to Q3 here], or should some of it also go to at least one other area?
_____ (1) All new revenue should go to X _____ (2) Some new revenue should also go to at least one other area

4. To help pay for roads, you pay state taxes whenever you buy gas. What do you think the gas tax is in NC, per gallon? (Please DO NOT search for the answer or ask for help because this is not a test and our research depends on recording your honest estimate). Is it somewhere between:
_____ (1) 0 to 24 cents _____ (3) 45 to 64 cents _____ (5) 90 cents or more
_____ (2) 25 to 44 cents _____ (4) 65 to 89 cents _____ (6) Don't Know

5. How confident are you in your answer to question 5? (SKIP LOGIC IF answered Don't Know to Q4)
_____ (1) Confident _____ (2) Not Very Confident _____ (3) I Guessed

**Insert at random to half of respondents a statement giving them the answer to the gas tax question.

The idea would be to see if corrections (at least it will be for most!) or confirmation of estimates influences their answers to the next question or two.

6. An average NC vehicle owner who travels 12,000 miles in one year would pay approximately $200 per year in state gas tax. Choose which statement you agree with most:
(RANDOMIZE ORDER)
_____ (1) $200 per year is inexpensive for driving for 12,000 miles on roads in NC.
_____ (2) $200 per year is a fair price for driving for 12,000 miles on roads in NC.
_____ (3) $200 per year is expensive for driving for 12,000 miles on roads in NC.

7. Which kind of revenue sources should NC rely on for roads?
(RANDOMIZE ORDER)
_____ (1) Sources of revenue directly related to the use of the road (such as a tax on gasoline purchases or fees paid to use toll roads or based on the total number of miles driven in one year)
_____ (2) Sources of revenue supported by the general public (such as general sales taxes, property tax, or vehicle property tax)

8. If we wanted to raise an additional amount of money to repair the state's road network, this could be accomplished using a new fee based on the number of miles driven, an increased tax paid on gasoline purchases, or an increase in the general state sales tax. If you had to choose just one, which of the following options should NC rely on to fund the road repairs?
_____ (1) The new fee on miles driven
_____ (2) An increased tax on gasoline purchases
_____ (3) An increase in the general state sales tax

9a. Please explain the reasons why you selected the new fee on miles driven for the previous question:

(text box)

9b. (IF gas tax or sales tax was selected for Q8) Please explain the reasons you did not select the new fee on miles driven for the previous question:

(text box)

10. To the right are common types of taxes and fees. Imagine you decided the budget for which taxes and fees are used to pay for NC roads. How much should each of these potential revenue sources contribute to NC roads? Your answers can range from 0% to 100%, but the total contribution cannot exceed 100%.

	Your Allocation of Percentage
Alternative Fuel Fee (electric, hybrid, etc.)	
Gas Tax	
General Sales Tax	
Highway Use Tax (tax on vehicle purchases)	
Motor Vehicle and Driver License Fees	
Property Tax	
Tolls	
Vehicle Miles Driven User Fee	
Total	100%

11. Hybrid vehicles are typically more fuel efficient than gasoline-powered vehicles. For this reason, drivers of a hybrid vehicle pay lower taxes for their use of the roadway because they travel further per each gallon of gas purchased. Choose which statement you agree with most:

_____ (1) I **support** hybrid vehicle drivers paying less to use the roads
_____ (2) I **oppose** hybrid vehicle drivers paying less to use the roads

12. Vehicles that weigh more cause greater damage to the roads. Do you support or oppose the state adding a vehicle weight fee to account for the extra damage these vehicles cause, excluding vehicles for personal use?

_____ (1) I **support** adding a vehicle weight fee
_____ (2) I **oppose** adding a vehicle weight fee

13. Some people have suggested increasing taxes paid on electricity use in order to raise revenue for transportation. Do you support or oppose increasing the tax on your electricity use to meet the state's transportation needs?

_____ (1) Strongly Support _____ (2) Support _____ (3) Oppose _____ (4) Strongly Oppose

SPLIT BALLOT A

14A. All agencies must prioritize objectives. Which of the following should NCDOT prioritize? Reducing traffic congestion, or maintaining and expanding our streets, roads, and highways?

_____ (1) Reducing traffic congestion
_____ (2) Maintaining and expanding our streets, roads, and highways

SPLIT BALLOT B

14B. All agencies must prioritize objectives. What should NCDOT prioritize? Reducing traffic congestion, or expanding public transportation?

_____ (1) Maintaining and expanding our streets, roads, and highways
_____ (2) Expanding public transportation

15. Please indicate your level of agreement with the following statement for transportation and mobility services in North Carolina:
I am satisfied with the services provided.

_____ (1) Strongly Agree _____ (2) Agree _____ (3) Neutral _____ (4) Disagree _____ (5) Strongly Disagree
_____ (6) Does not apply

16. Which fuel category best describes the vehicle you use most frequently?

____ (1) Gas
____ (2) Diesel
____ (3) Hybrid
____ (4) Electric
____ (5) Other: _____
____ (6) I don't use a vehicle/not applicable *(Skip to Question 18)*

17. For the vehicle you used most frequently, about how many miles did you drive in the past 12 months? _____

18. How frequently do you use the following modes?

	Every Day/almost every day	Regularly (more than once a week)	Occassionally (a couple of times per month)	Rarely (A couple of times per year)	Never
Personal car Driver					
Toll Road					
Passenger in personal car					
Public Transit					
Ride-hailing services (e.g. Uber, Lyft)					
Vehicle rentals, including car-share programs like Zipcar and Car2go					
Bicycle					
Walk					
Shared bikes, e-scooters, or other micro-mobility devices					
Passenger train					

This concludes the survey – Thank you for your time!

Your responses will remain completely anonymous. The information on the right will ONLY be used to help identify areas with special interests. Thank you.

Appendix 2.2: Survey Instrument – Information Effects

ITRE Institute for Transportation Research and Education

NC STATE UNIVERSITY

2020 Survey – Information Effects

Dear North Carolina resident,

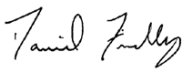
We are researchers at North Carolina State University asking for your participation in a short survey to better understand how North Carolina residents feel about transportation funding.

If you choose to participate, your answers will be recorded anonymously. You are not required to answer our questions or if you start, you can stop at any time. The risks of participation are the same as those experienced in everyday life, and although you will not be compensated for participating, you could benefit by learning more about your own views about transportation issues.

By completing and returning this survey, you affirm that you are at least 18 years old and that you give your consent for the research team to use your answers in this study. If you have already completed this survey, please do not complete again.

Thank you for your participation in this important process.

Sincerely,



Daniel J Findley, Program Manager - Economic Analysis and Policy Assessment
Institute for Transportation Research and Education, North Carolina State University
919.515.8564
Daniel_Findley@ncsu.edu

1. To start, how important are transportation issues to you?
_____ (1) Very Important _____ (2) Somewhat important _____ (3) Somewhat Unimportant _____ (4) Very Unimportant

2. Transportation experts generally agree that funding in NC has failed to keep up with growing demands. What comes closest to your view regarding government spending on roads in NC? NC needs to:
_____ (1) Increase spending _____ (2) Currently spends the right amount _____ (3) Decrease spending _____ (4) No Opinion

2b. Do you feel that way strongly, or not strongly?
_____ (1) Strongly _____ (2) Not Strongly

3. If the state of North Carolina increased its spending on transportation, where would new spending be most needed? (Rotate Answers)
____ Maintain and build highways
____ Expand multi-modal service (buses, trains, bicycles, and pedestrians)
____ Improve safety of the traveling public
____ Modernize transportation technologies (wireless connectivity, charging stations, electrify fleet)

3b. Would you approve or disapprove of the state spending any new transportation revenues on [at random, respondents see just ONE of the FOUR categories, EXCLUDING the possibility of seeing the one they choose in Q3]? (RANDOMIZE ORDER)
_____ (1) Strongly Approve _____ (2) Approve _____ (3) Disapprove _____ (4) Strongly Disapprove

4. To help pay for roads, you pay state taxes whenever you buy gas. What do you think the gas tax is in NC, in cents per gallon? (Please DO NOT search for the answer or ask for help because this is not a test and our research depends on recording your honest estimate).
_____ cents _____ Don't Know

5. How confident are you in your answer to question 5? (SKIP LOGIC IF answered Don't Know to Q4)
_____ (1) Confident _____ (2) Not Very Confident _____ (3) I Guessed

**Insert at random to half of respondents a statement giving them the answer to the gas tax question.

The idea would be to see if corrections (at least it will be for most!) or confirmation of estimates influences their answers to the next question or two.

6. An average NC vehicle owner pays approximately $6,500 per year to own and operate a vehicle. If the vehicle owner travels 12,000 miles in one year, they would pay approximately $15 per month in state gas tax. Choose which statement you agree with most:
(RANDOMIZE ORDER)
_____ (1) $15 per month is inexpensive for driving for 12,000 miles on roads in NC.
_____ (2) $15 per month is a fair price for driving for 12,000 miles on roads in NC.
_____ (3) $15 per month is expensive for driving for 12,000 miles on roads in NC.

7. Some people say that drivers who use the roads more should pay a greater share of the costs of building and maintaining them. This means taxing gas or miles driven, including toll roads. Others say that everyone should contribute more or less equally since everyone benefits from good roads. This means relying more on general taxes, such as the sales tax when you buy goods and services, plus property taxes. Which kind of revenue sources should NC rely on for roads?
(RANDOMIZE ORDER)
_____ (1) Sources of revenue directly related to the use of the road (such as a tax on gasoline purchases or fees paid to use toll roads or based on the total number of miles driven in one year)
_____ (2) Sources of revenue supported by the general public (such as general sales taxes, property tax, or vehicle property tax)

SPLIT BALLOT
8A. If we wanted to raise an additional $1 billion per year to repair the state's road network, this could be accomplished using a new fee based on the number of miles driven at a rate of 1 cent per mile, an increased tax paid on gasoline purchases at a rate of

18 cents per gallon, or an increase in the general state sales tax at a rate of 1 cent per dollar. If you had to choose just one, which of the following options should NC rely on to fund the $1 billion for road repairs?

_____ (1) A new 1 cent fee per mile driven
_____ (2) An increase of 18 cents per gallon in the tax on gasoline purchases
_____ (3) An increase of 1 cent per dollar in the general state sales tax

8B. If we wanted to raise an additional $500 million per year to repair the state's road network, this could be accomplished using a new fee based on the number of miles driven at a rate of 1/2 cent per mile, an increased tax paid on gasoline purchases at a rate of 9 cents per gallon, or an increase in the general state sales tax at a rate of 1/2 cent per dollar. If you had to choose just one, which of the following options should NC rely on to fund the $500 million for road repairs?

_____ (1) A new 1/2 cent fee per mile driven
_____ (2) An increase of 9 cents per gallon in the tax on gasoline purchases
_____ (3) An increase of 1/2 cent per dollar in the general state sales tax

9a. (IF VMT was selected for Q8) You selected a new ½ cent fee per mile driven, why? Select as many of the following reasons that apply. If none of your reasons are listed, please provide them by selecting the other option and writing your reason in:

_____ (1) Privacy concerns about personal information
_____ (2) Everyone pays fair share
_____ (3) Amount paid by rural and urban drivers is fair
_____ (4) Logistics/Process for how funds are collected
_____ (5) Mileage by out-of-state visitors and by residents travelling out-of-state are taxed fairly
_____ (6) Other: (text box)

9b. (IF gas tax or sales tax was selected for Q8) You did not select a new ½ cent fee per mile driven, why not? Select as many of the following reasons that apply. If none of your reasons are listed, please provide them by selecting the other option and writing your reason in:

_____ (1) Privacy concerns about personal information
_____ (2) Everyone pays fair share
_____ (3) Amount paid by rural and urban residents is fair
_____ (4) Logistics/Process for how funds are collected
_____ (5) Mileage by out-of-state visitors and by residents travelling out-of-state are taxed fairly
_____ (6) Other: (text box)

10. To the right are common types of taxes and fees, and how much they contribute to roads in NC. Imagine you decided the budget for which taxes and fees are used to pay for NC roads. How much should each of these potential revenue sources contribute to NC roads? Your answers can range from 0% to 100%, but the total contribution cannot exceed 100%.

	Current Percent Contribution to Fund NC Roads	Your Allocation of Percentage
Alternative Fuel Fee (electric, hybrid, etc.)	Less than 0.1%	
Gas Tax	55%	
General Sales Tax	0%	
Highway Use Tax (tax on vehicle purchases)	20%	
Motor Vehicle and Driver License Fees	25%	
Property Tax	0%	
Tolls	Less than 0.1%	
Vehicle Miles Driven User Fee	0%	
Total	100%	100%

11. Hybrid vehicles are typically more fuel efficient than gasoline-powered vehicles. For this reason, drivers of a hybrid vehicle pay lower taxes for their use of the roadway because they travel further per each gallon of gas purchased. Drivers of electric vehicles do not pay any gas tax – however, they do pay $130 each year for their use of the roads. Choose which statement you agree with most:

_____ (1) I **support** hybrid and electric vehicle drivers paying less to use the roads

_____ (2) I **oppose** hybrid and electric vehicle drivers paying less to use the roads

12. Vehicles that weigh more cause greater damage to the roads. Do you support or oppose the state adding a vehicle weight fee to account for the extra damage these vehicles cause, excluding vehicles for personal use?
_____ (1) I **support** adding a vehicle weight fee
_____ (2) I **oppose** adding a vehicle weight fee

13. Some people have suggested increasing taxes paid on electricity use in order to raise revenue for transportation. Do you support or oppose increasing the tax on your electricity use to meet the state's transportation needs?

_____ (1) Strongly Support _____ (2) Support _____ (3) Oppose _____ (4) Strongly Oppose

SPLIT BALLOT A
14A. All agencies must prioritize objectives. Which of the following should NCDOT prioritize? Reducing traffic congestion, or maintaining and expanding our streets, roads, and highways?
_____ (1) Reducing traffic congestion
_____ (2) Maintaining and expanding our streets, roads, and highways

SPLIT BALLOT B
14B. All agencies must prioritize objectives. What should NCDOT prioritize? Reducing traffic congestion, or expanding public transportation?
_____ (1) Reducing traffic congestion
_____ (2) Expanding public transportation

15. Please indicate your level of agreement with the following statement for transportation and mobility services in North Carolina:
I am satisfied with the services provided.
_____ (1) Strongly Agree _____ (2) Agree _____ (3) Neutral _____ (4) Disagree _____ (5) Strongly Disagree
_____ (6) Does not apply

16. Which fuel category best describes the vehicle you use most frequently?
____ (1) Gas
____ (2) Diesel
____ (3) Hybrid
____ (4) Electric
____ (5) Other: _____
____ (6) I don't use a vehicle/not applicable *(Skip to Question 18)*

17. For the vehicle you used most frequently, about how many miles did you drive in the past 12 months? _____

18. How frequently do you use the following modes?

	Every Day/almost every day	Regularly (more than once a week)	Occasionally (a couple of times per month)	Rarely (A couple of times per year)	Never
Personal car Driver					
Toll Road					
Passenger in personal car					
Public Transit					
Ride-hailing services (e.g. Uber, Lyft)					
Vehicle rentals, including car-share programs like Zipcar and Car2go					
Bicycle					
Walk					

Shared bikes, e-scooters, or other micro-mobility devices					
Passenger train					

This concludes the survey – Thank you for your time!

Your responses will remain completely anonymous. The information on the right will ONLY be used to help identify areas with special interests. Thank you.

Appendix 3: Ipsos Weighting Effects

18+ North Carolina Population Benchmarks			NC Transportation 2020 - Qualified Respondents Trimmed and Scaled: Weighted by weight			NC Transportation 2020 - Qualified Respondents Un-Weighted %		
Source: ACS 2018								
Age, Gender	**Frequency**	**Percent**	**v1**	**Frequency**	**Percent**	**v1**	**Frequency**	**Percent**
Age 18-29 Male	769524	9.85	**Age 18-29 Male**	91.38457	8.65	**Age 18-29 Male**	41	3.88
Age 18-29 Female	770585	9.86	**Age 18-29 Female**	109.2402	10.34	**Age 18-29 Female**	88	8.33
Age 30-44 Male	943007	12.07	**Age 30-44 Male**	116.4556	11.03	**Age 30-44 Male**	70	6.63
Age 30-44 Female	1007215	12.89	**Age 30-44 Female**	140.907	13.34	**Age 30-44 Female**	149	14.11
Age 45-59 Male	966930	12.37	**Age 45-59 Male**	124.3891	11.78	**Age 45-59 Male**	82	7.77
Age 45-59 Female	1057373	13.53	**Age 45-59 Female**	147.6053	13.98	**Age 45-59 Female**	160	15.15
Age 60+ Male	1027623	13.15	**Age 60+ Male**	145.3046	13.76	**Age 60+ Male**	199	18.84
Age 60+ Female	1273202	16.29	**Age 60+ Female**	180.7136	17.11	**Age 60+ Female**	267	25.28
Ethnicity	**Frequency**	**Percent**	**ppethm**	**Frequency**	**Percent**	**ppethm**	**Frequency**	**Percent**
White, Non-Hispanic	5170655	66.16	**White, Non-Hispanic**	714.8746	67.7	**White, Non-Hispanic**	777	73.58
Black, Non-Hispanic	1602245	20.5	**Black, Non-Hispanic**	203.6419	19.28	**Black, Non-Hispanic**	173	16.38
Other, Non-Hispanic	327400	4.19	**Other, Non-Hispanic**	43.84801	4.15	**Other, Non-Hispanic**	18	1.7
Hispanic	593392	7.59	**Hispanic**	76.34617	7.23	**Hispanic**	57	5.4
2+ Race, Non-Hispanic	121767	1.56	**2+ Race, Non-Hispanic**	17.28937	1.64	**2+ Race, Non-Hispanic**	31	2.94
Education	**Frequency**	**Percent**	**ppeducat3**	**Frequency**	**Percent**	**ppeducat3**	**Frequency**	**Percent**
LHS or HS	2939587	37.61	**LHS or HS**	365.4054	34.6	**LHS or HS**	160	15.15
Some College	2511028	32.13	**Some College**	355.0995	33.63	**Some College**	368	34.85
Bachelor or higher	2364844	30.26	**Bachelor or higher**	335.4951	31.77	**Bachelor or higher**	528	50
Income	**Frequency**	**Percent**	**income6**	**Frequency**	**Percent**	**income6**	**Frequency**	**Percent**
Under $25,000	1235588	15.81	**Under $25,000**	173.3257	16.41	**Under $25,000**	204	19.32
$25,000-$49,999	1744201	22.32	**$25,000-$49,999**	236.5294	22.4	**$25,000-$49,999**	227	21.5
$50,000-$74,999	1491126	19.08	**$50,000-$74,999**	202.9526	19.22	**$50,000-$74,999**	211	19.98
$75,000-$99,999	1096302	14.03	**$75,000-$99,999**	155.4147	14.72	**$75,000-$99,999**	166	15.72
$100,000-$149,999	1247168	15.96	**$100,000-$149,999**	176.8019	16.74	**$100,000-$149,999**	158	14.96
$150,000 and over	1001074	12.81	**$150,000 and over**	110.9756	10.51	**$150,000 and over**	90	8.52

Appendix 4: Ipsos KnowledgePanel Methodology

KnowledgePanel is the largest online panel that relies on probability-based sampling techniques for recruitment; hence, it is the largest national sampling frame from which fully representative samples can be generated to produce statistically valid inferences for study populations. Our panel provides samples with the highest level of representativeness available in online research for measurement of public opinions, attitudes, and behaviors. The panel was first developed in 1999 by Knowledge Networks, an Ipsos company. Panel members are randomly selected so that survey results can properly represent the U.S. population with a measurable level of accuracy, features that are not obtainable from nonprobability or opt-in online panels (for comparisons of results from probability versus nonprobability methods, see MacInnis et al., 2018[1] and Yeager et al., 2011[2]).
KnowledgePanel's recruitment process was originally based exclusively on a national RDD sampling methodology. In 2009, in light of the growing proportion of cellphone-only households, Ipsos migrated to an ABS recruitment methodology via the U.S. Postal Service's Delivery Sequence File (DSF). ABS not only improves population coverage, but also provides a more effective means for recruiting hard-to-reach individuals, such as young adults and minorities. Households without Internet connection are provided with a web-enabled device and free internet service.
After initially accepting the invitation to join the panel, participants are asked to complete a short demographic survey (the initial Core Profile Survey); answers to this survey allow efficient panel sampling and weighting for future surveys. Upon completing the Core Profile Survey, participants become active panel members. All panel members are provided privacy and confidentiality protections.

ABS Recruitment

We use probability-based sampling methods for recruiting new members to join KnowledgePanel. For this purpose, we rely on the latest version of the Delivery Sequence File (DSF) from the USPS to select address-based samples that are nationally representative of all households. By taking advantage of a host of ancillary data that are appended to each address, we use stratified random sampling to ensure the geodemographic composition of our panel members mimic those of the adult population in the U.S.[3]
Adults from sampled households are invited to join KnowledgePanel through a series of mailings, including an initial invitation letter, a reminder postcard, and a subsequent follow-up letter. Moreover, telephone refusal-conversion calls are made to nonresponding households for which a telephone number could be matched to a physical address. Invited households can join the panel by:

- Completing and mailing back a paper form in a postage-paid envelope
- Calling a toll-free hotline phone number maintained by Ipsos
- Going to a designated Ipsos website and completing the recruitment form online

Household Member Recruitment

During the initial recruitment survey, all household members are enumerated. Following enumeration, attempts are made to recruit every household member who is at least 13 years old to participate in KnowledgePanel surveys. For household members aged 13 to 17, consent is collected from the parents or the legal guardian during the initial recruitment

interview. No direct communication with teenagers is attempted before obtaining parental consent.

Survey Sampling from KnowledgePanel

Once panel members are recruited and profiled by completing our Core Profile Survey, they become eligible for selection for client surveys. Typically, specific survey samples are based on the equal probability selection method (EPSEM) for general population surveys. Customized stratified random sampling based on “profile” _data can also be implemented as required by the study design. Profile data can also be used when a survey calls for pre-screening—that is, members are drawn from a subsample of the panel, such as females, Republicans, grocery shoppers, etc. (This can reduce screening costs, particularly for rare subgroups.) In such cases, we take care to ensure that all subsequent survey samples drawn that week are selected in such a way as to result in a sample that remains representative of the panel distributions. While surveys can be conducted with these teens directly, in most instances teen surveys are conducted by first selecting a sample of active members who are parents. This parent route alternative makes it possible to reach a larger sample of teens.

Survey Administration

Once assigned to a survey, members receive a notification email letting them know there is a new survey available for them to complete. This email notification contains a link that sends them to the survey. No login name or password is required. The field period depends on the client’s needs and can range anywhere from a few hours to several weeks. Typically, after three days, automatic email reminders are sent to all non-responding panel members in the sample. Additional email reminders are sent or custom reminder schedules are set up as needed. To assist panel members with their survey taking, each individual has a personalized member portal listing all assigned surveys that have yet to be completed. Ipsos also operates an ongoing modest incentive program to encourage participation and create member loyalty. The incentive program includes special raffles and sweepstakes with both cash rewards and other prizes to be won. Typically, we assign panel members no more than one survey per week. On average, panel members complete two to three surveys per month with durations of 10 to 15 minutes per survey. An additional incentive is usually provided for longer surveys.

Response Rates

As a member of the American Association of Public Opinion Research (AAPOR), Ipsos follows the AAPOR standards for response rate reporting. While the AAPOR standards were established for single survey administrations and not for multi-stage panel surveys, we use the Callegaro- DiSogra (2008)[4] algorithms for calculating KnowledgePanel survey response rates. Generally, the KnowledgePanel survey completion rate is about 60%, with minor variations due to survey length, topic, sample specifications, and other fielding characteristics. In contrast, virtually all surveys that employ nonprobability online panels typically achieve survey completion rates in the low single digits. This means that – _aside from the fact that nonprobability panels are inherently not representative of any known populations – the effective size of KnowledgePanel (55,000 panel members × 0.60 completion rate = 33,000 respondents) would be equivalent to a nonprobability panel with 1,650,000 members that on average secures completion rates close to 2% (1,650,000 panel members x 0.02 = 33,000 respondents).