

Statewide Transportation Demand
Management Plan for Tennessee
Nonattainment and Maintenance Areas
Commuter Survey Report
October 2016



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1.0 Introduction

In September of 2016 TDOT conducted a survey of commuters throughout the state as part of an effort to develop a Statewide Transportation Demand Management (TDM) Plan for Tennessee Nonattainment and Maintenance Areas. The survey sought to obtain information and attitudes about commuting in Tennessee, commute choices, and preferences to aid in the development of state-wide TDM recommendations.

The following organizations helped distribute the survey to commuter by either contacting their stakeholders directly or allowing the survey team to contact their stakeholders to ask that they complete the survey. These partners were:

- Memphis Rideshare
- Memphis MPO
- GreenTrips (Chattanooga)
- Chattanooga MPO
- Nashville RTA
- Nashville MPO
- TMA Group (Nashville)
- Knoxville SmartTrips
- Knoxville Regional TPO
- Clarksville Urbanized Area MPO

Responses obtained through the outreach efforts of the above groups were likely to be from commuters for whom transportation is an issue of interest or who are already participating in a TDM program. To obtain a more representative sample of commuters throughout the state, responses were obtained using an online panel. This process was quicker and more efficient than conducting a phone survey.

The survey was undertaken by 1,373 individuals (211 responses from the commuter panel), with 1,243 participants fully completing the survey, and 129 partially completing the survey.

1.1 Key Findings

The following summarizes key findings from the survey results:

- **Commuting in Nashville:** The average time and distance respondents take to get to work in Nashville is statistically different from other regions. Respondents who work in the Nashville region reported an average commute distance of 31.4 miles one way, compared with an average of 18.4 miles for all respondents to the survey. Nashville commuters also reported experiencing longer commutes in time.
- **Variations in arrival and departure times:** Generally, most survey respondents arrive to work between 7 a.m.-9 a.m. and leave between 4 p.m.-6 p.m. This pattern is different for respondents working in Nashville, where workers tend to arrive earlier and leave earlier (typical arrivals between 6 a.m.-8 a.m. and departure between 3 p.m.-5 p.m.).
- **Main commute mode:** The highest mode split across all regions was driving alone, however, there were variations with very high bicycle commuting in both Knoxville and Chattanooga (over 20% of respondents). Knoxville also had a high proportion of bus commuters at 15% of respondents.
- **Changes in commuting:** Of respondents who suggested they took an alternative mode of transportation before driving along to work, the majority previously either took transit (27%) or carpooled (30%). Of those that stopped carpooling, the majority lost their carpool partner, of those that stopped taking transit, the majority moved or changed jobs.
- **Perceptions of transportation modes:** Travelling by train is well thought of in Nashville, with 30% of respondents suggesting they “love traveling this way”. Driving alone was thought of well in Memphis with 50% of respondents saying they “love traveling this way”. Both Knoxville and Chattanooga respondents thought of biking and walking favorably.
- **Transportation infrastructure:** In Nashville, most people said that they travelled along a freeway or highway with an HOV/carpool lane, and also most responded that there was a park-and-ride facility between their home and work. In all other regions most people said neither of these infrastructure types existed on their route.
- **Motivators to change:** In Nashville 49% of respondents said they would be very likely to drive to work less if they could slightly modify their work schedule to match a transit schedule. Also likely to change commute behavior in Nashville were discounts on transit passes (44% likely or very likely), a guaranteed ride home (54% likely or very likely) and a small cash payment every day employees do not drive to work (56% likely or very likely).
- **Use of Lyft or Uber:** 10% of respondents from Nashville and Chattanooga suggested they have used Lyft or Uber to get to work at least once. This is compared to just 1% of respondents from other areas within the state.

2.0 Survey Approach

The survey process included the steps listed below, which are further details within this and the next section of this report.

1. Design
2. Distribution
3. Data processing
4. Summary

2.1 Survey Design

The survey questions were developed by staff from UrbanTrans North America and AECOM in coordination with TDOT staff. Upon approval of the survey questions an online version of the survey was created that could be completed through computer, phone and tablet-based web browsers.

2.2 Survey Distribution

Invitations to participate in the online survey were sent via email to those individuals registered in the various databases of different agencies. To encourage a high response rate, those who completed the survey were registered to win one of five \$50 gift cards.

2.3 Data Processing

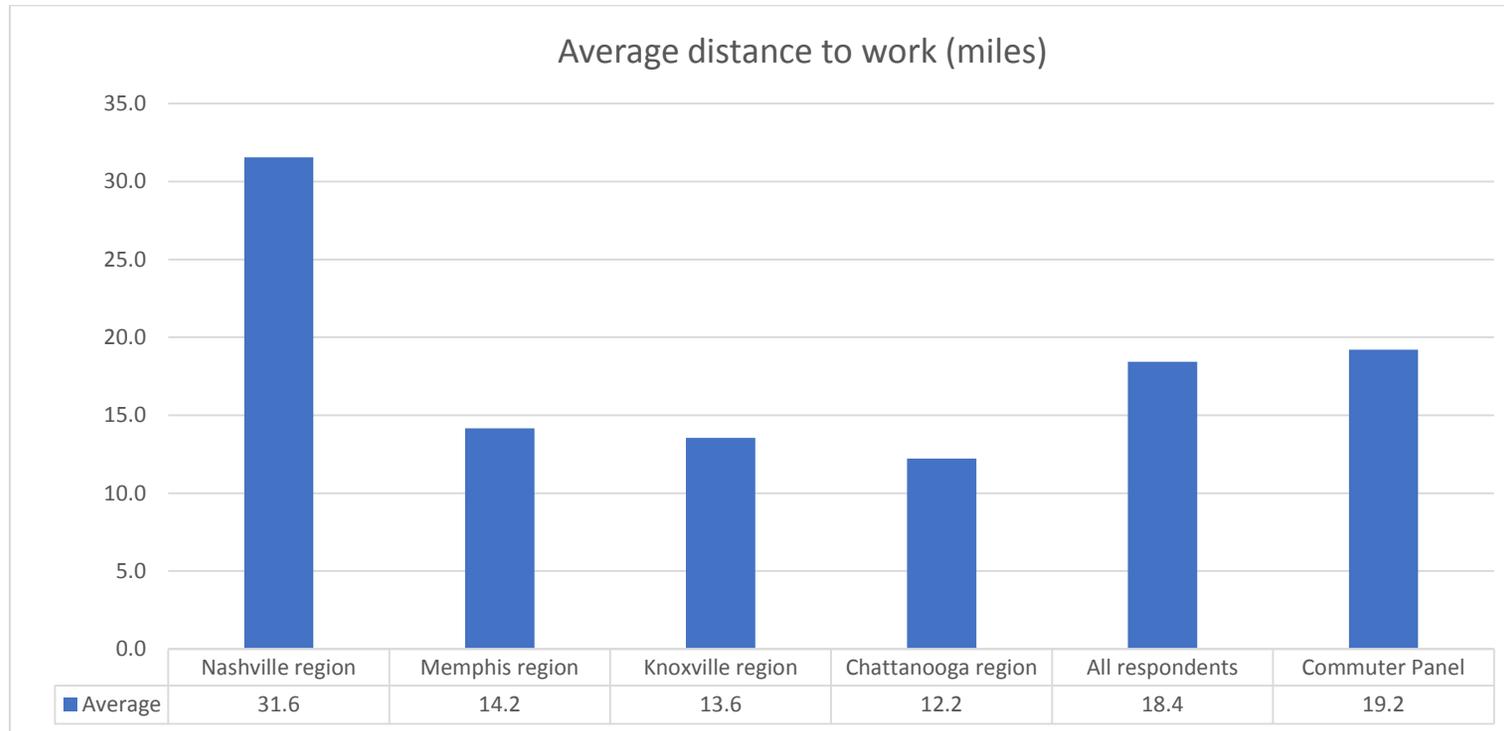
Once the survey was closed all data were reviewed for errors including duplicate submittals and outliers. The review revealed that multiple individuals completed the online survey more than one time, many likely after receiving a survey reminder email. In those situations, the most recently submitted and completed survey was retained and the oldest submitted and/or non-completed survey was removed. No outliers were identified, so no survey data was removed for outlier issues.

3.0 Survey Results

Survey respondents were asked to report the region in which they work. This response was used to categorize respondents based on region. Survey findings are presented by major region and in aggregate. Additionally, results from the online panel (commuter panel) are shown separately. Results from this panel should be representative of typical commuters in the state, whereas the regional results are likely biased toward individuals who closely follow planning issues, for whom commuting is an issue, or who are environmentally motivated. The regional results should not be ignored, as they are likely representative of the thinking of people who are most likely to participate in TDM programs.

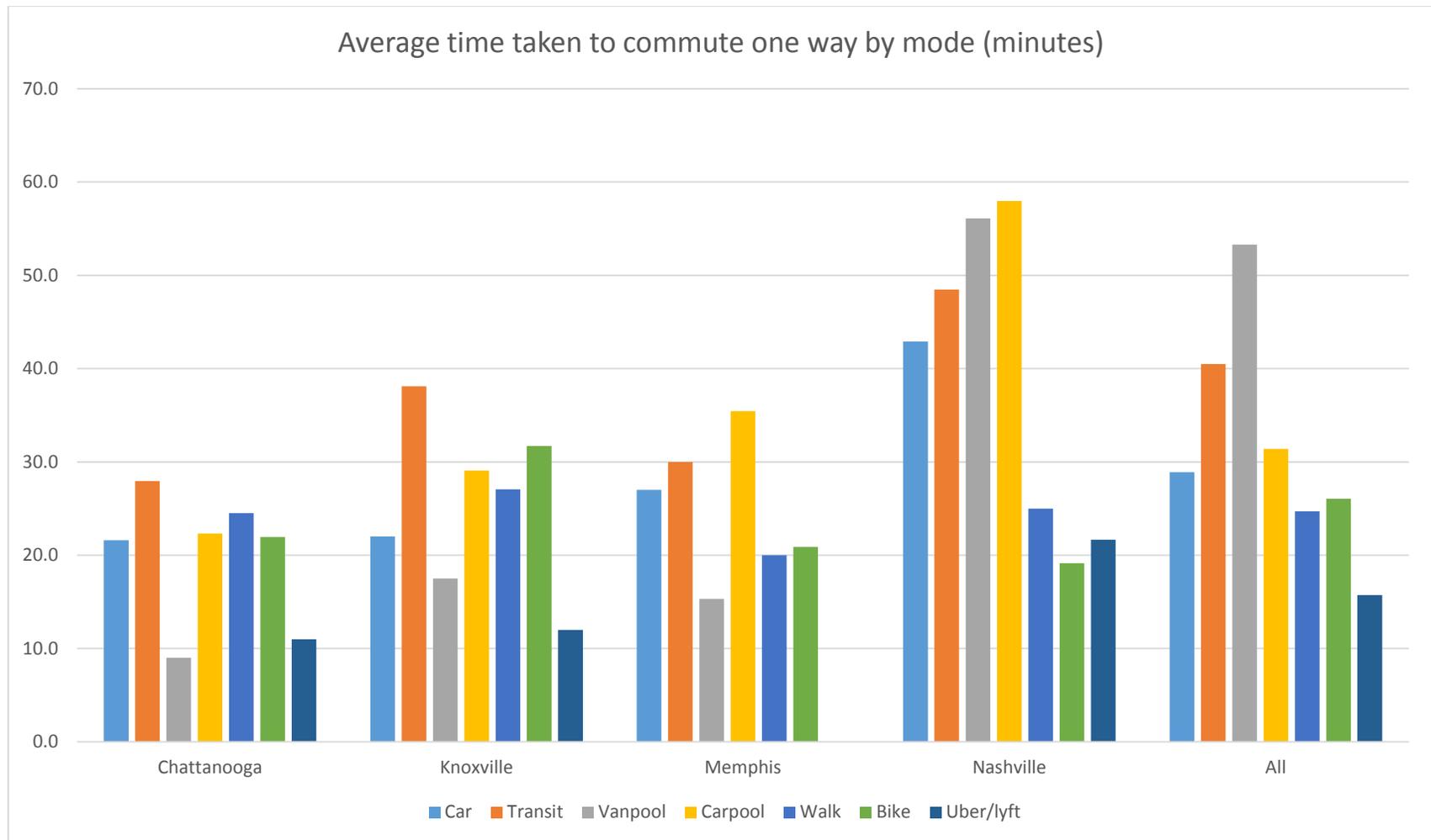
3.1 Current commute

Commute length in miles one way



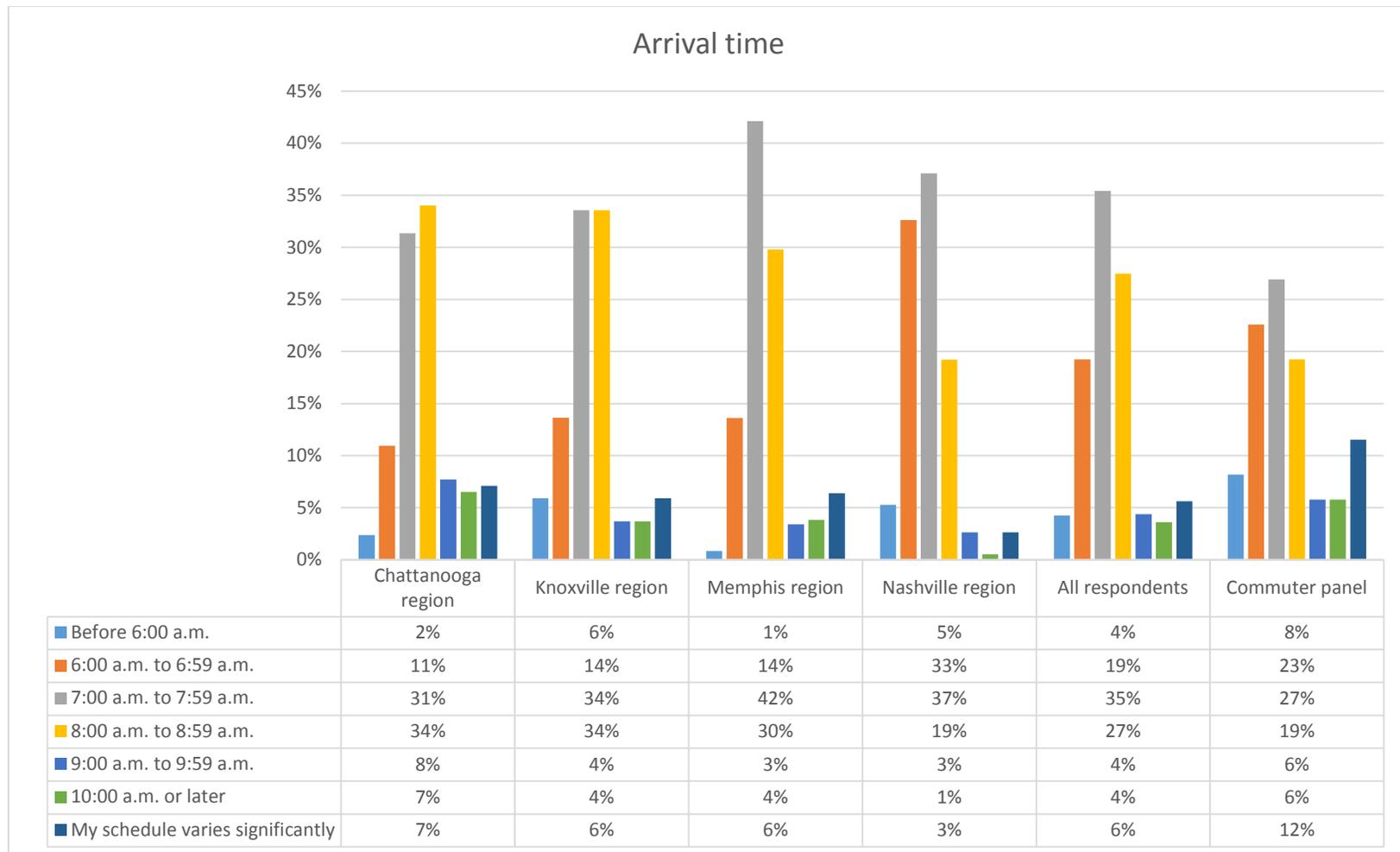
Average time taken one way by mode

Respondents suggested that vanpooling took the most time to commute to work; however, the vast majority of vanpoolers in the survey were taken by respondents from the Nashville region. In the Knoxville and Chattanooga regions, transit was suggested to take the longest time, whereas carpooling took the most time in Memphis and Nashville.



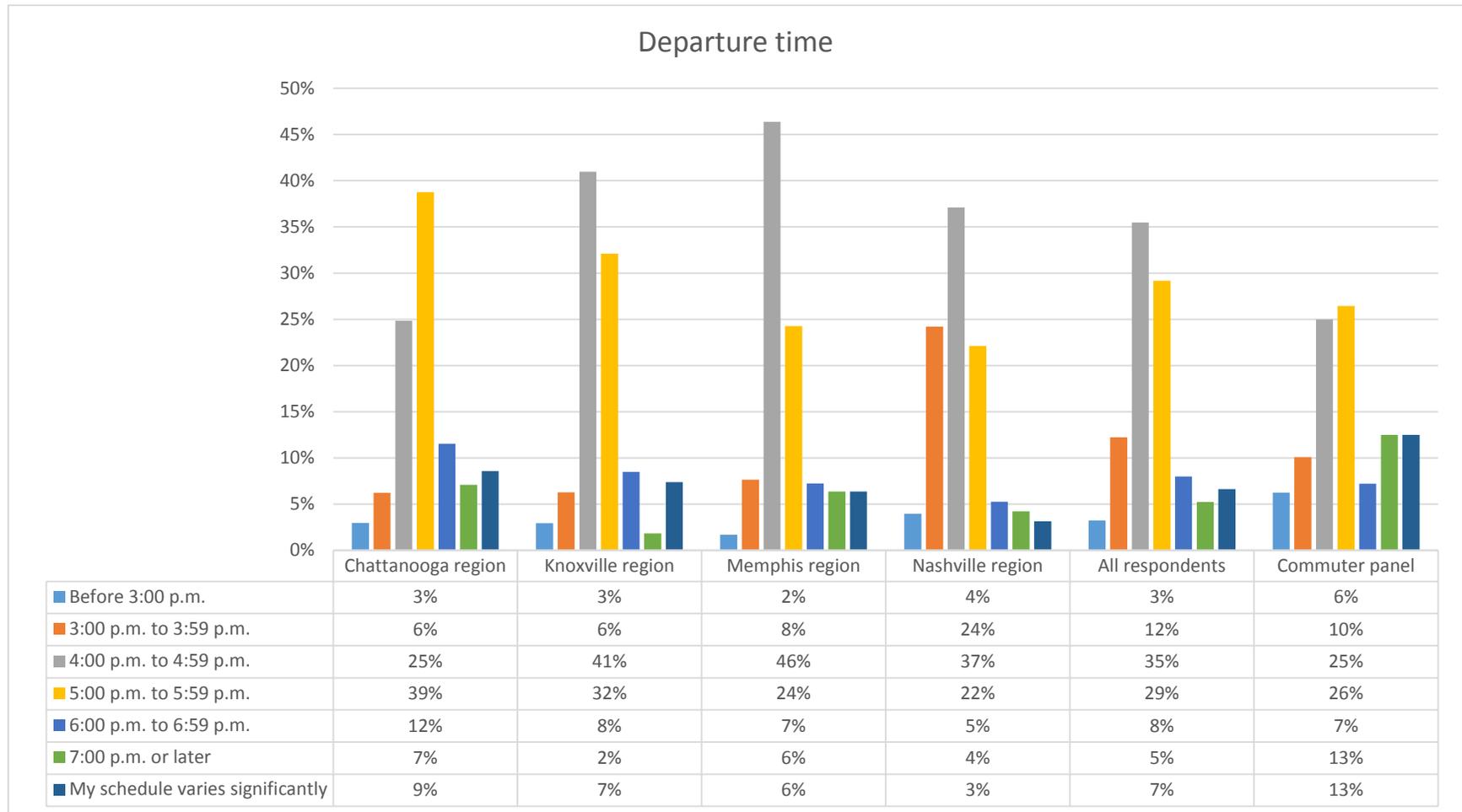
Arrival time

There is a distinction between the time most people typically arrive at work between Nashville and other regions. Where in the Nashville region commuters tend to arrive earlier (38% arriving before 7 a.m.), other regions tend to get to work later (between 7a.m.-9a.m.).



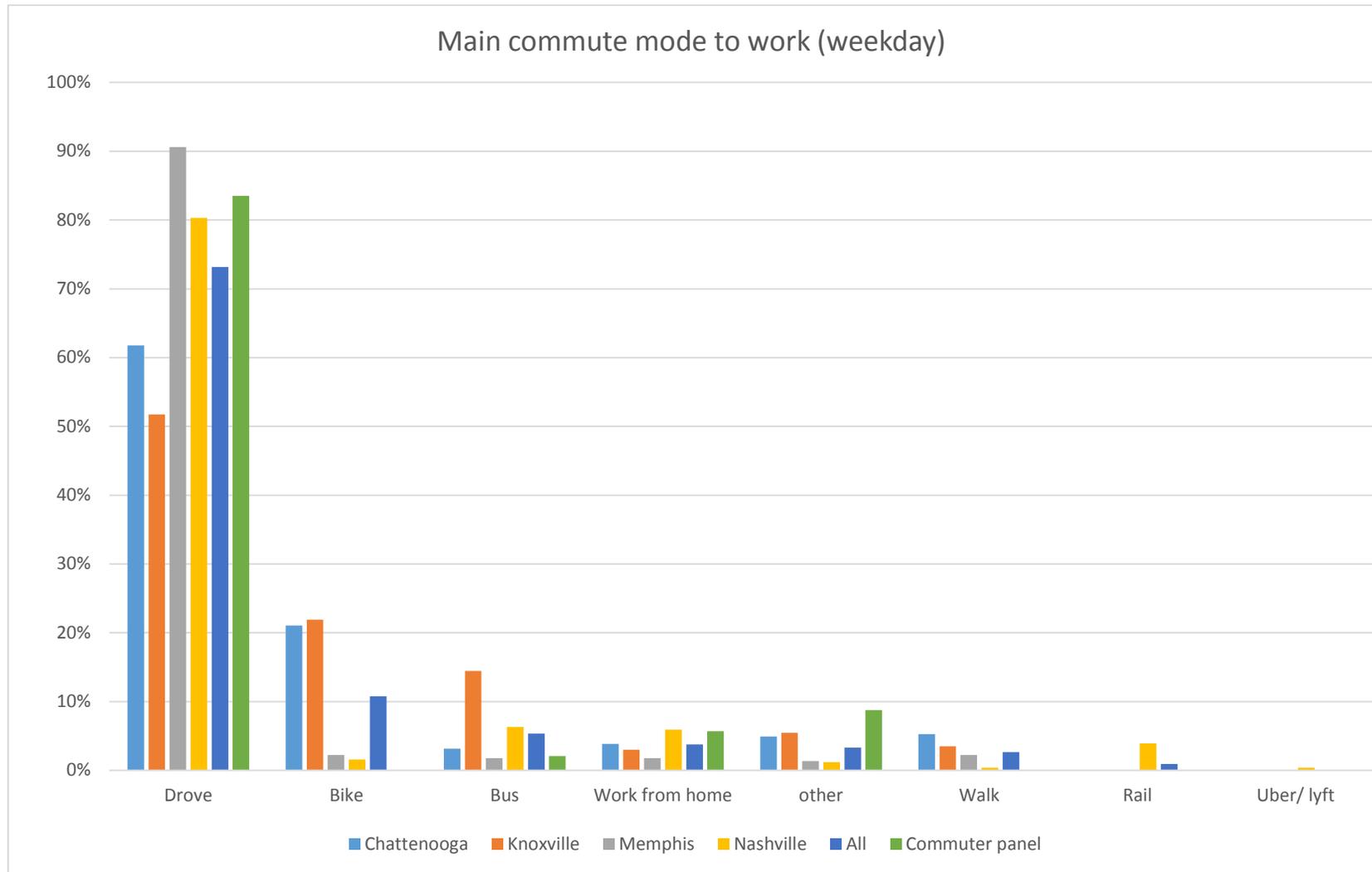
Departure time

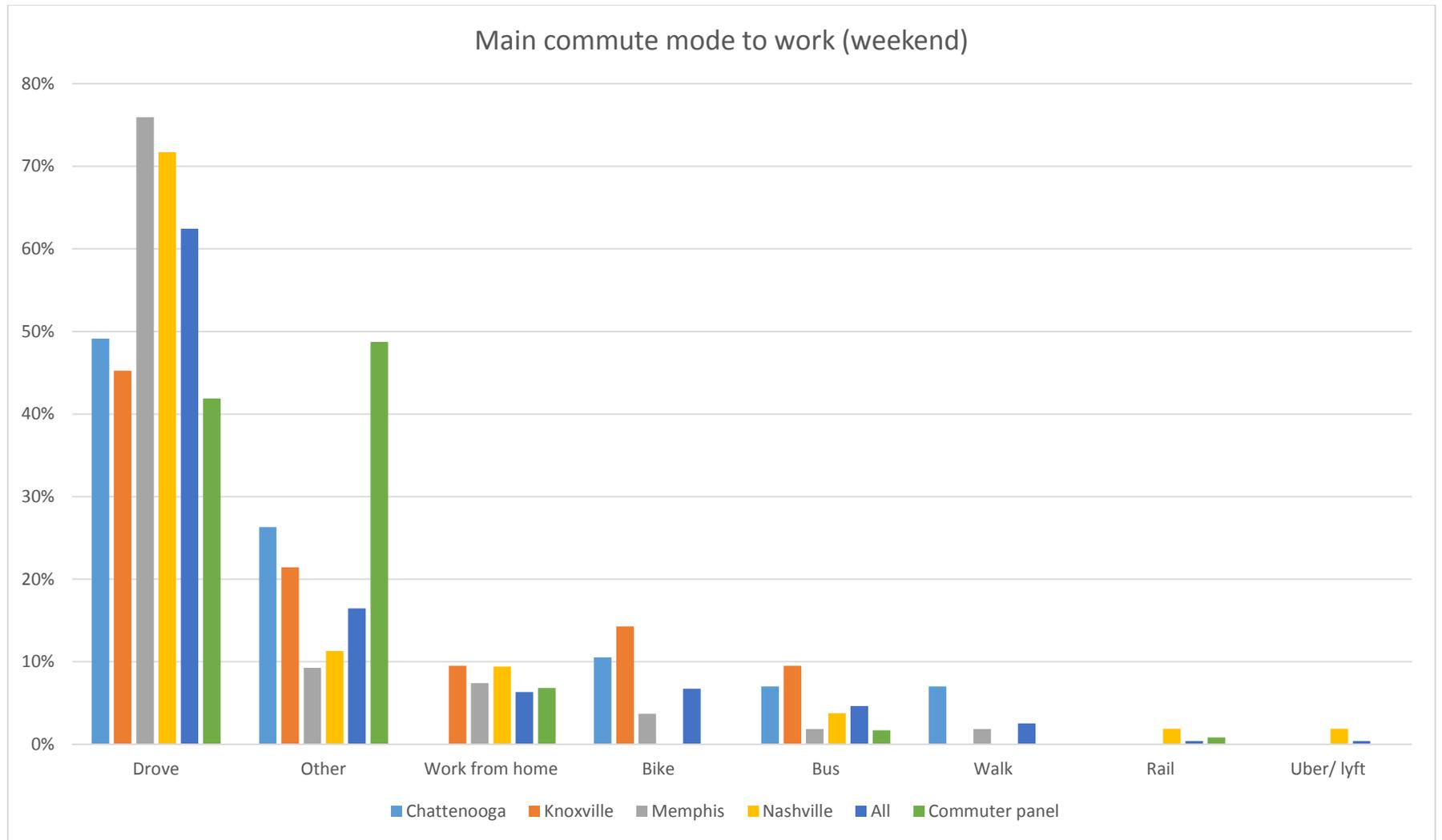
Similarly to arrival times, respondents from the Nashville region also left work earlier than other regions, with 28% of respondents leaving before 4 p.m.



Main commute mode

The graph below shows the various main commute modes by region during the weekday (Monday to Friday). A second figure shows main commute modes for trips made on weekends.

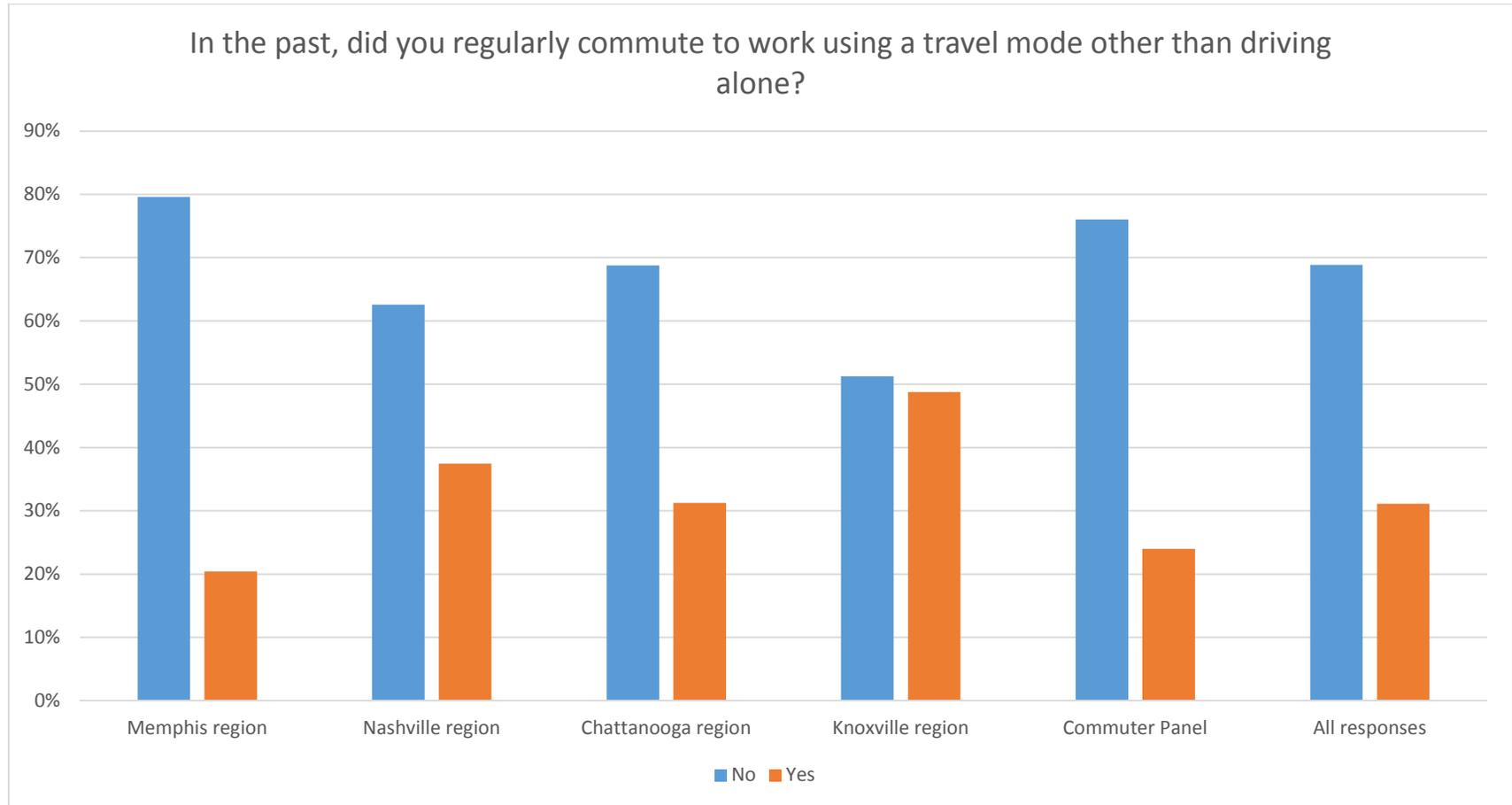




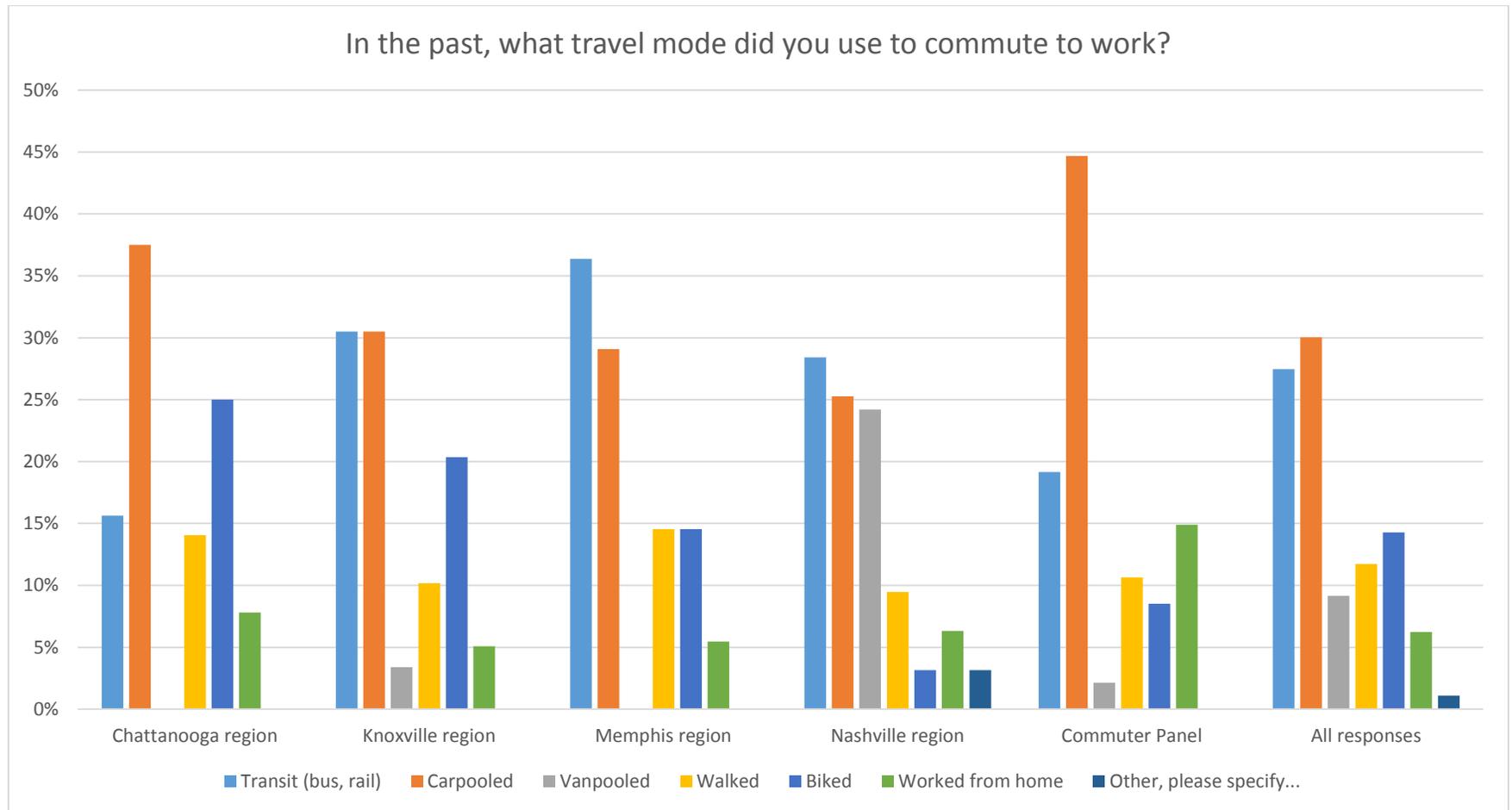
3.2 Historical commute

Other commute modes

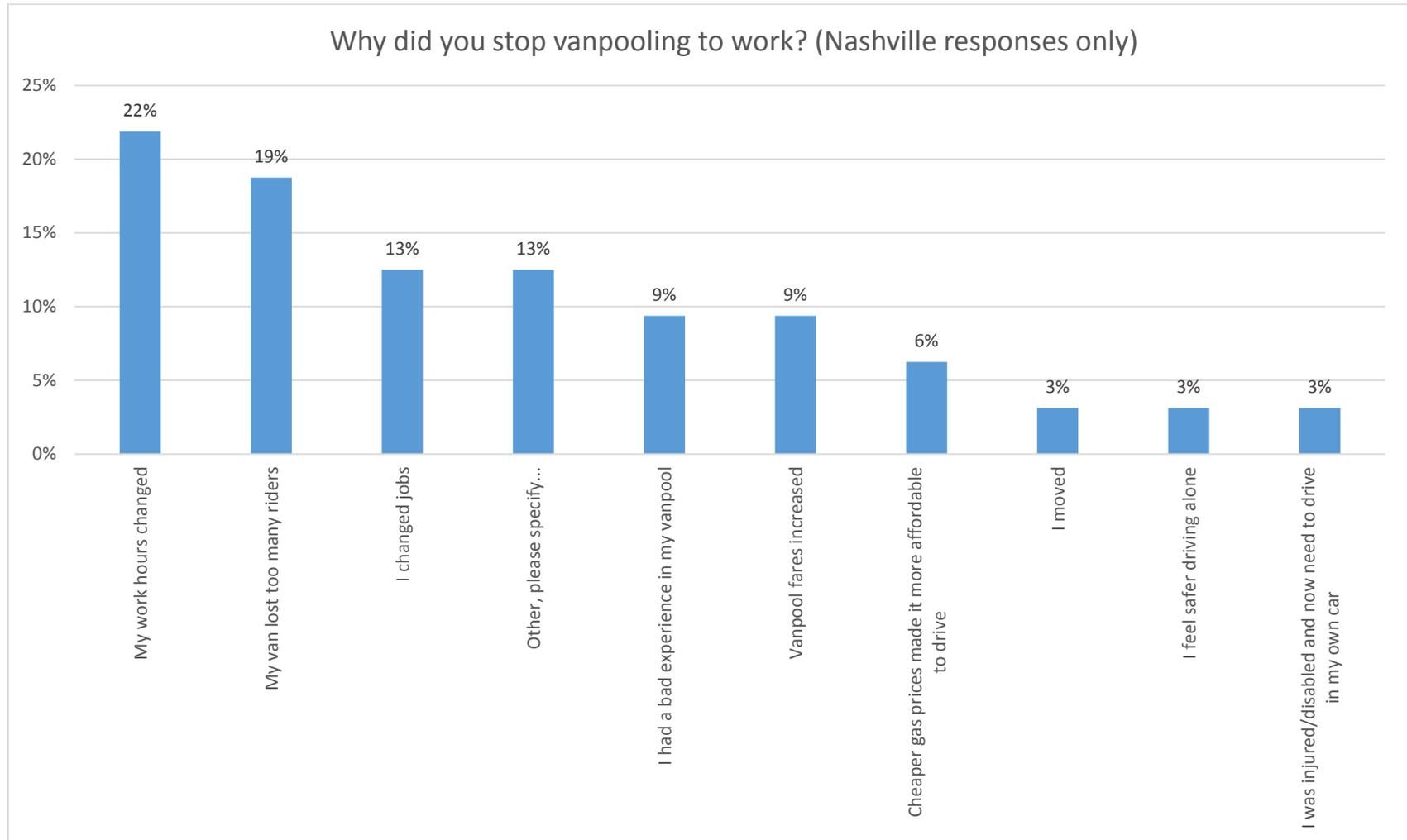
Respondents who reported primarily driving alone to work were asked if they had used a different commute mode in the past. The Knoxville region has the highest rate of conversions from using a different mode to driving alone.



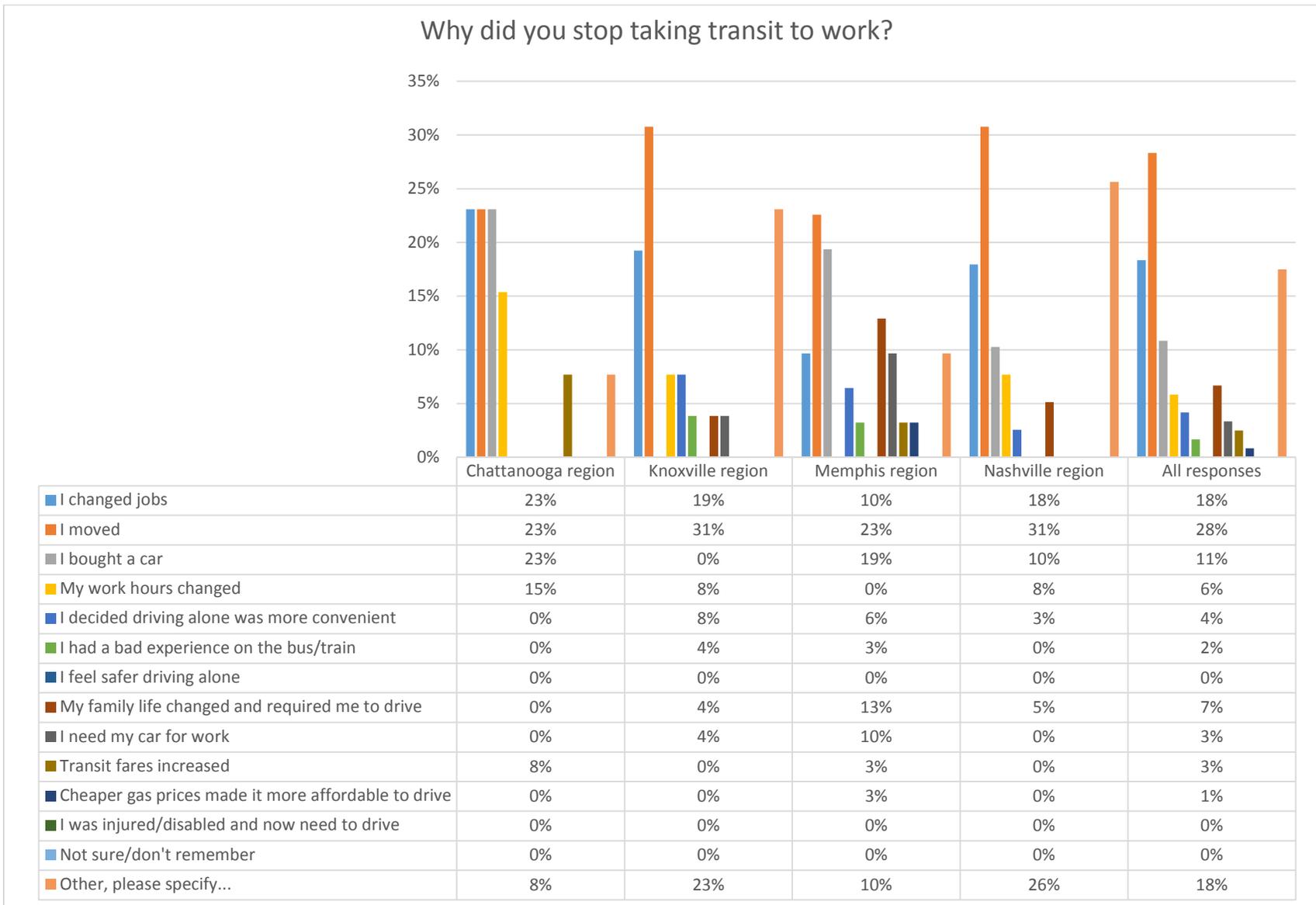
Of those respondents who said they did use a different mode in the past to travel to work other than drive alone, the majority moved from either transit or carpooling. Nashville region respondents were the majority of respondents who suggested they used to vanpool to work. Both Chattanooga and Knoxville regions had a high number of respondents who used to bike to work.



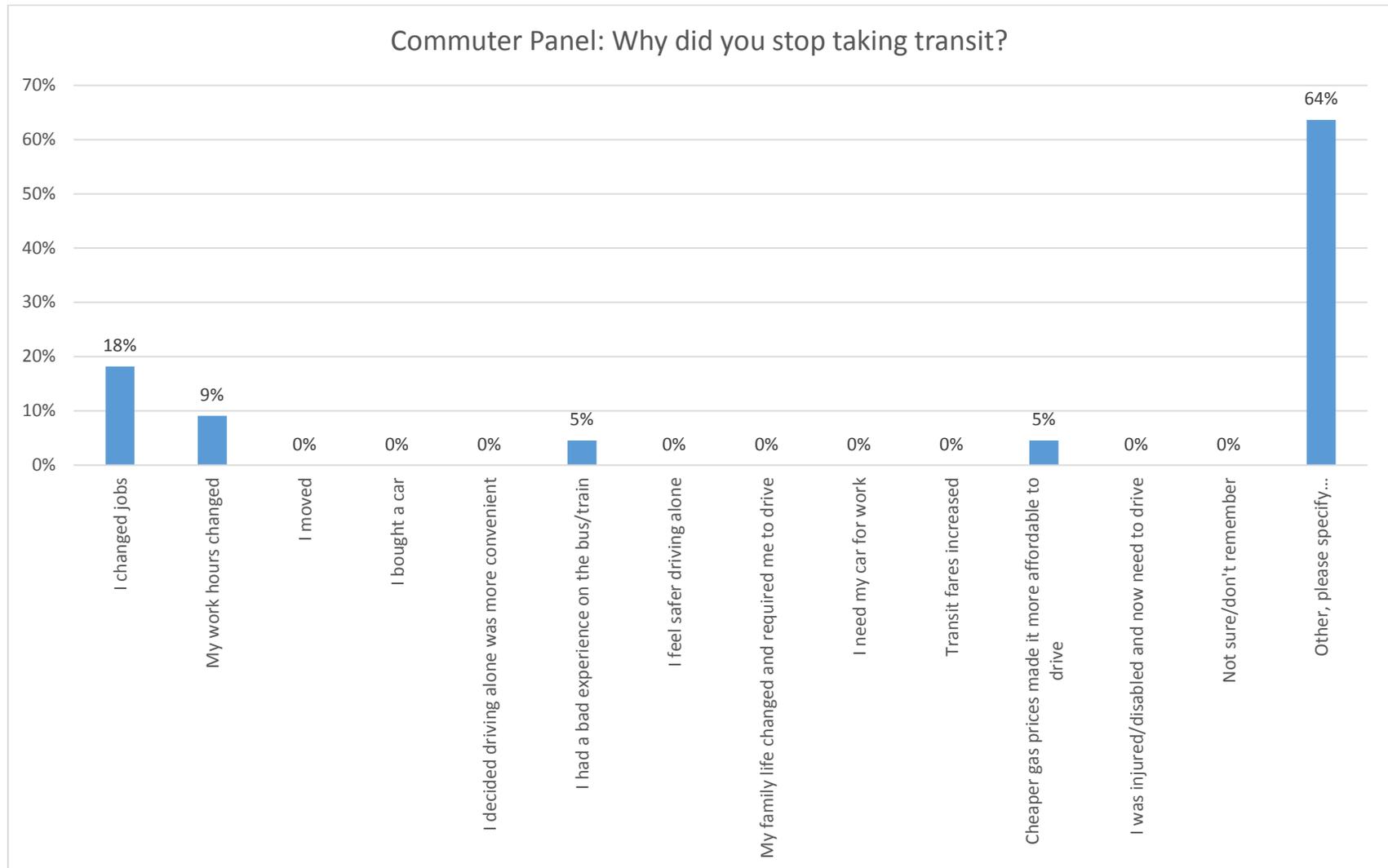
Nashville respondents who previously vanpooled to work were asked why they stopped vanpooling. The most common reasons for dropping out of a vanpool were changes in work hours and the van losing too many riders.



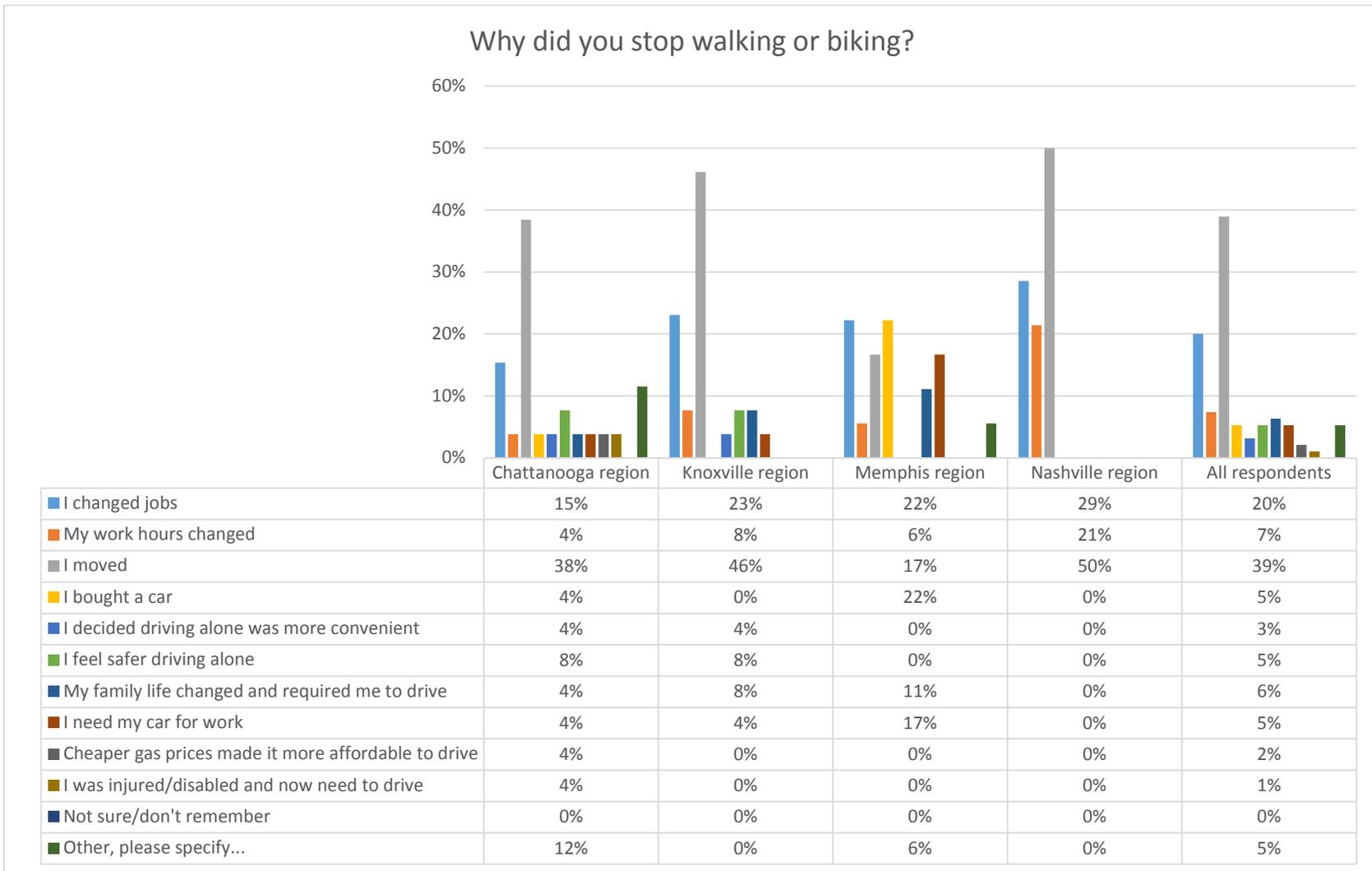
Of the respondents who said they stopped taking transit to work, the most common causes for doing so were a move of job change.



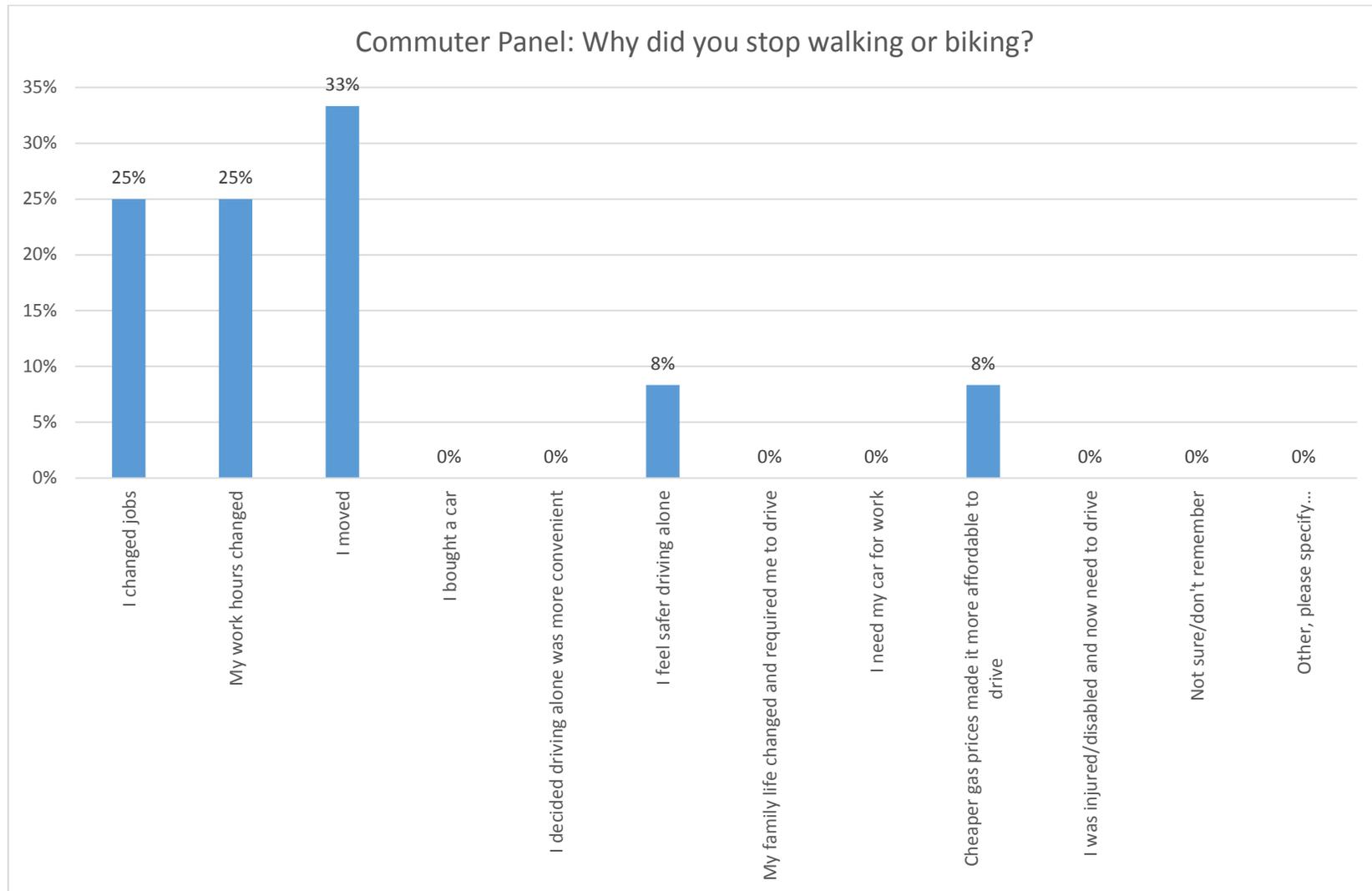
The following table provides the same information as the previous table, but for the commuter panel only. The data were separated for the sake of readability.



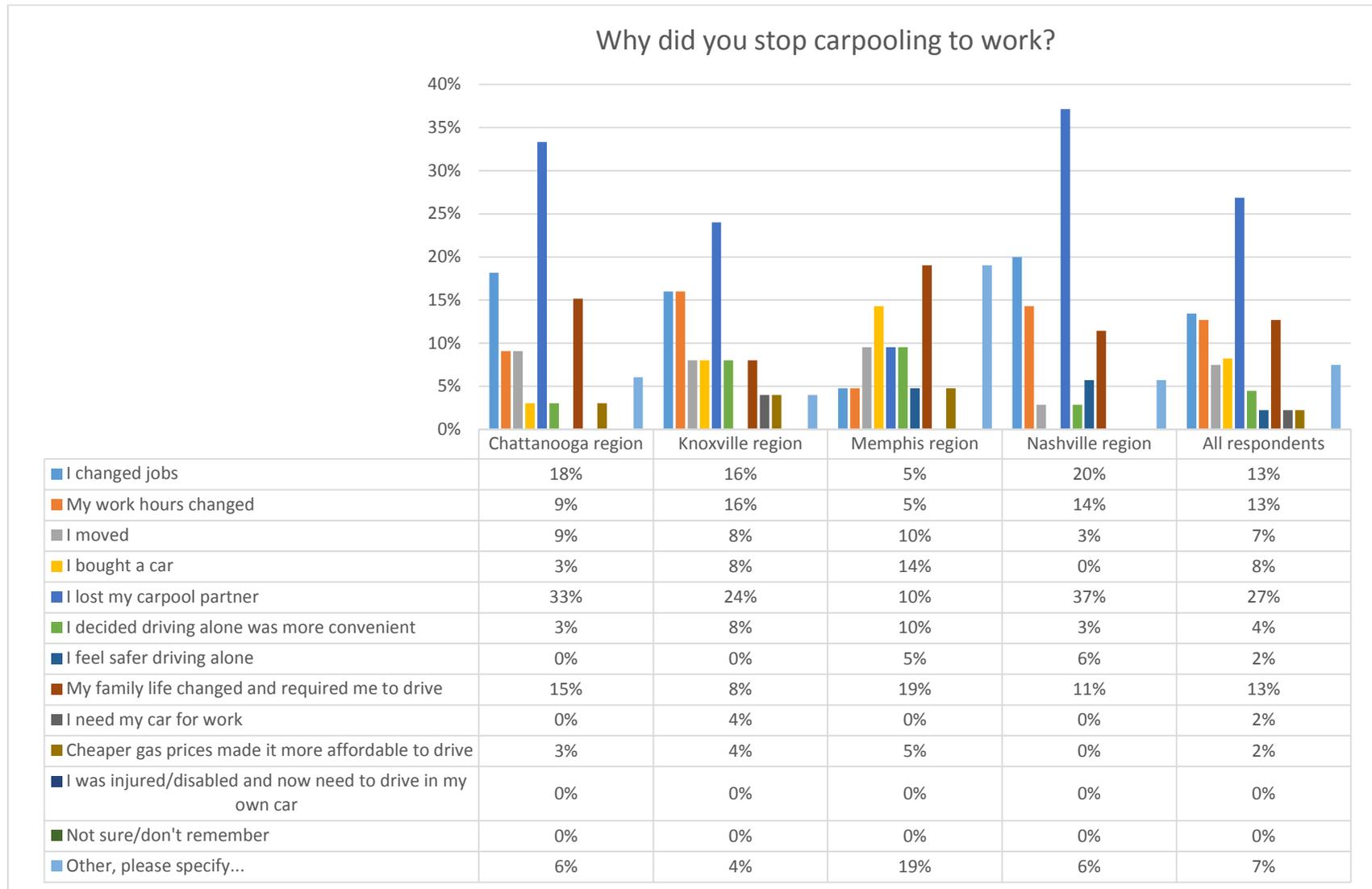
Of those respondents who suggested they stopped taking cycling or walking to work, the majority suggested they either moved or changed jobs. Notably a large number of respondents working in Memphis responded that they “bought a car”.



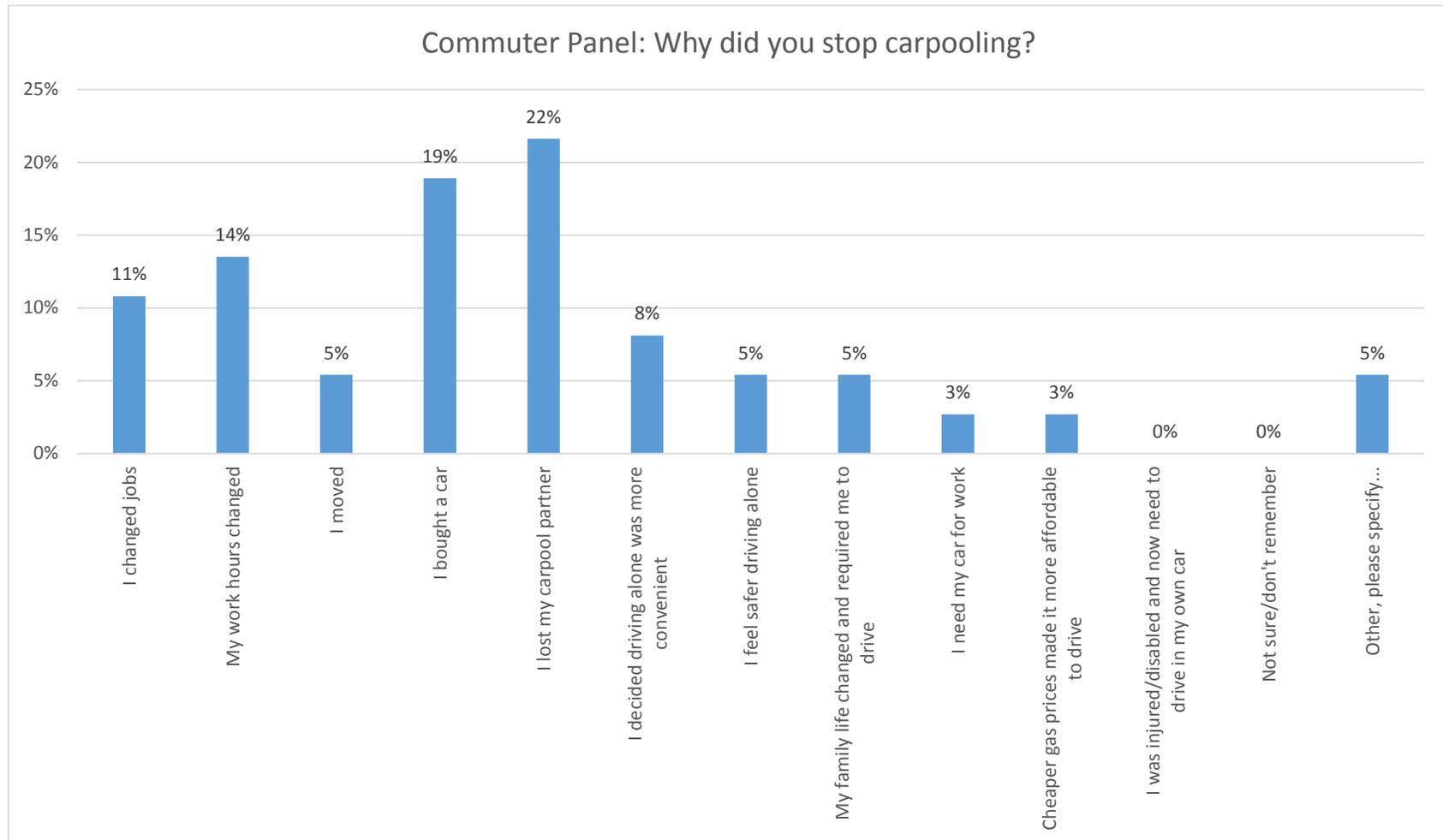
Responses provided by the commuter panel were similar to those received from other survey respondents.



Common causes for individuals dropping out of carpools were loss of the carpool partner, a job change, and changes in familiar circumstances that required the respondent to begin driving.

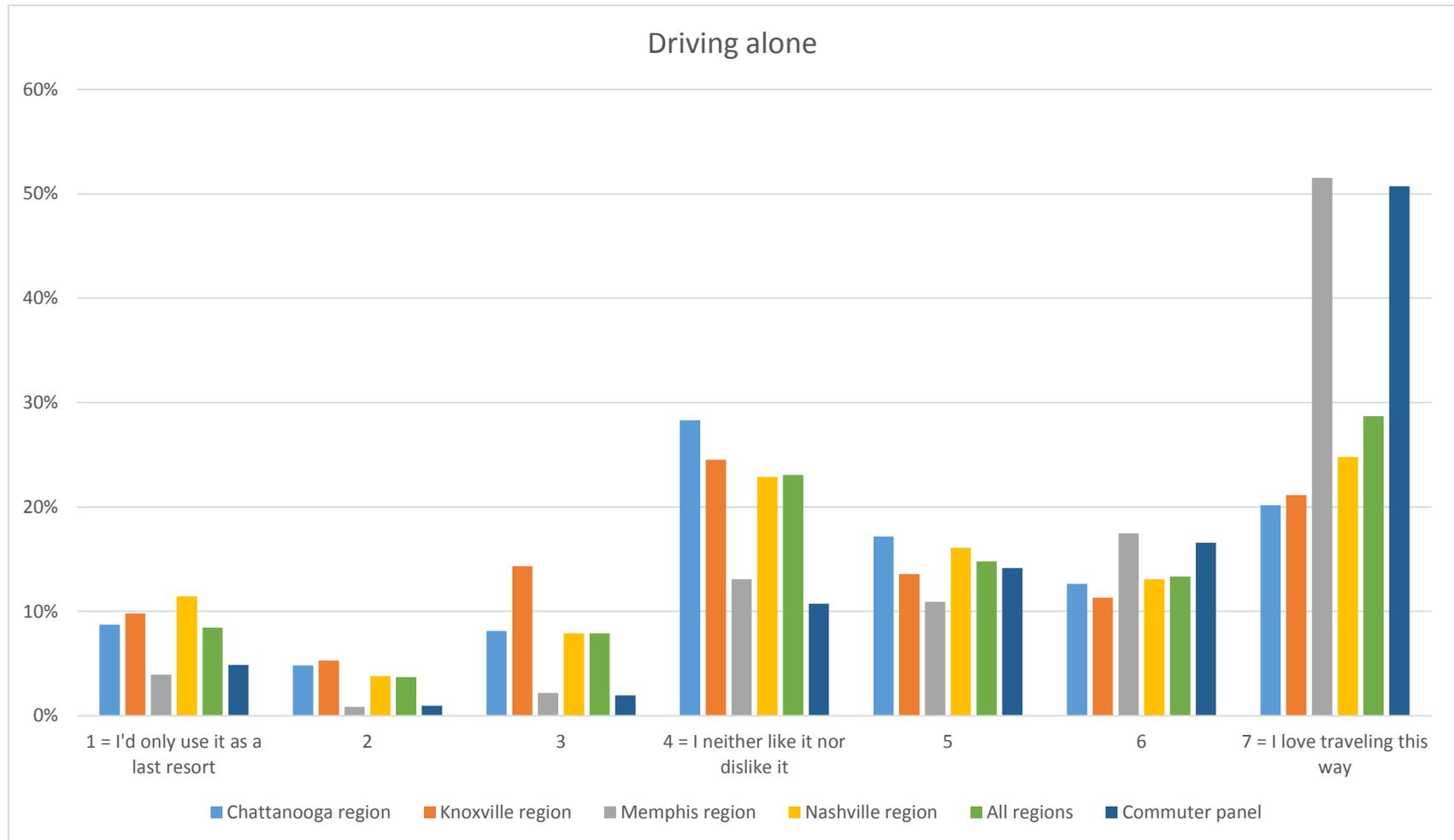


Responses from the commuter panel were similar to those received from the larger sample; however, panel respondents were more likely to have stopped carpooling because they bought a car.

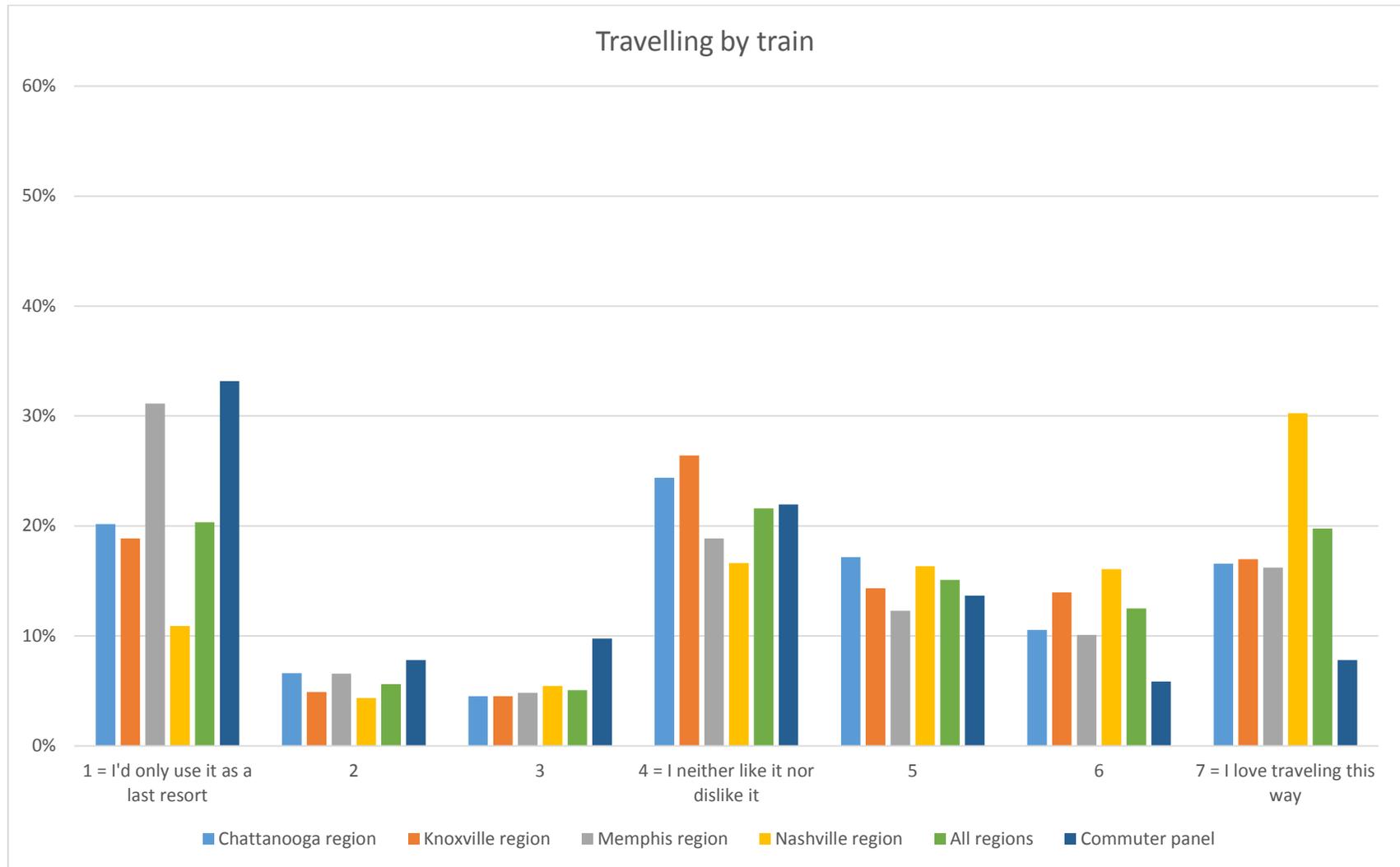


3.3 Perceptions of different commute modes

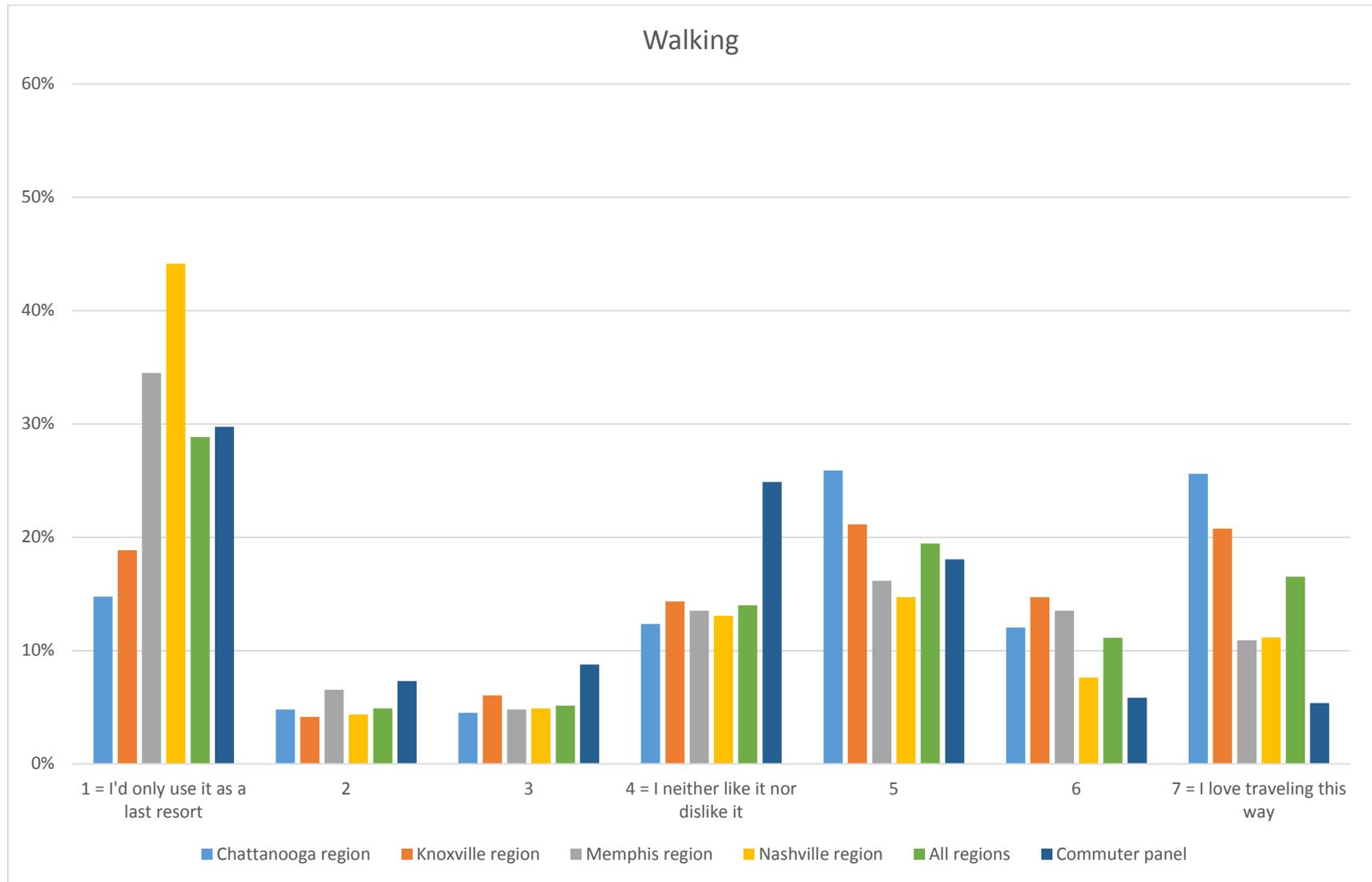
Respondents were provided with a list of travel modes and asked to report how much they like or dislike each mode. Respondents were more likely to enjoy driving alone than to dislike driving alone.



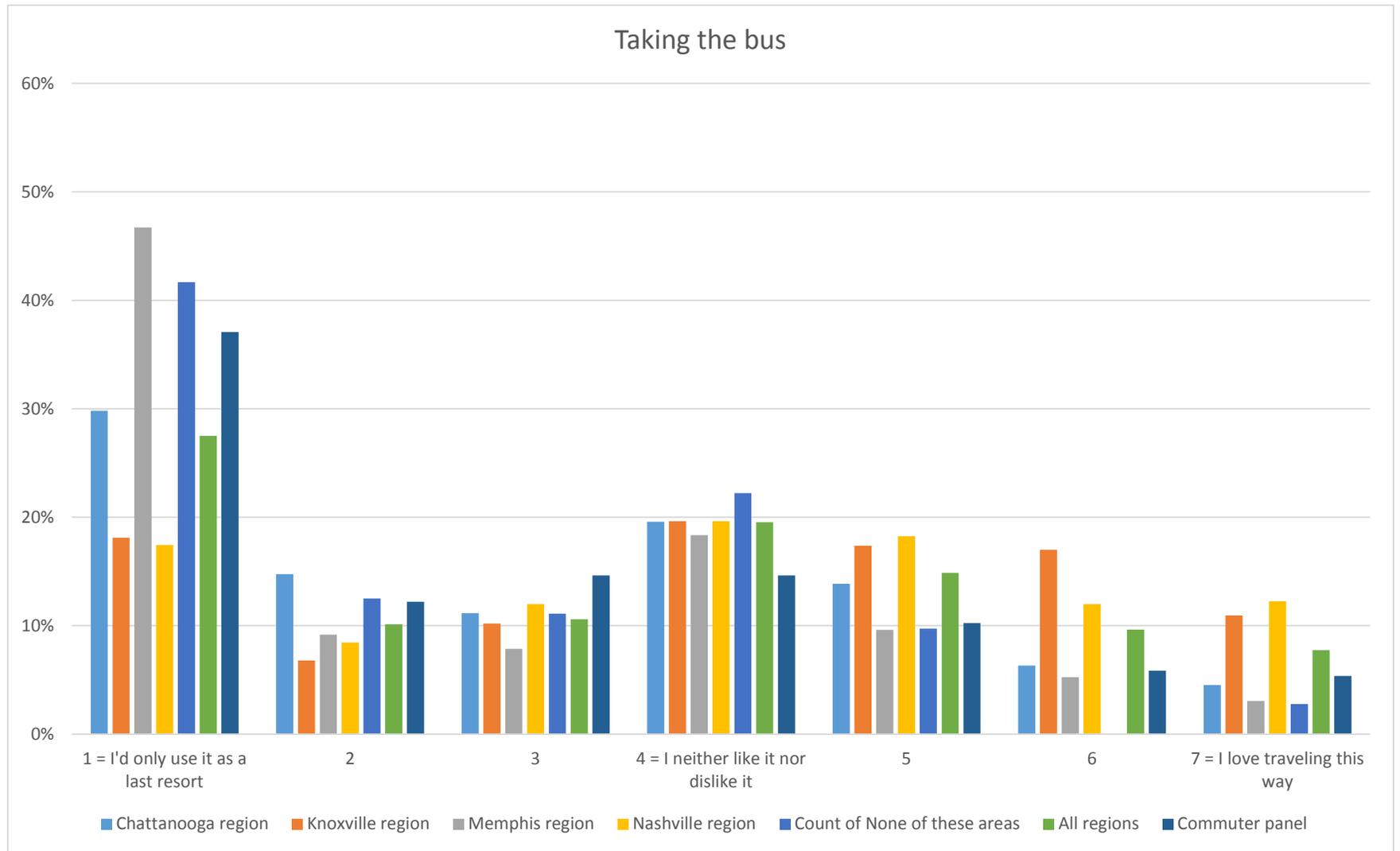
Travelling by train, typically commuter rail for the purposes of this question, received very mixed reviews from respondents.



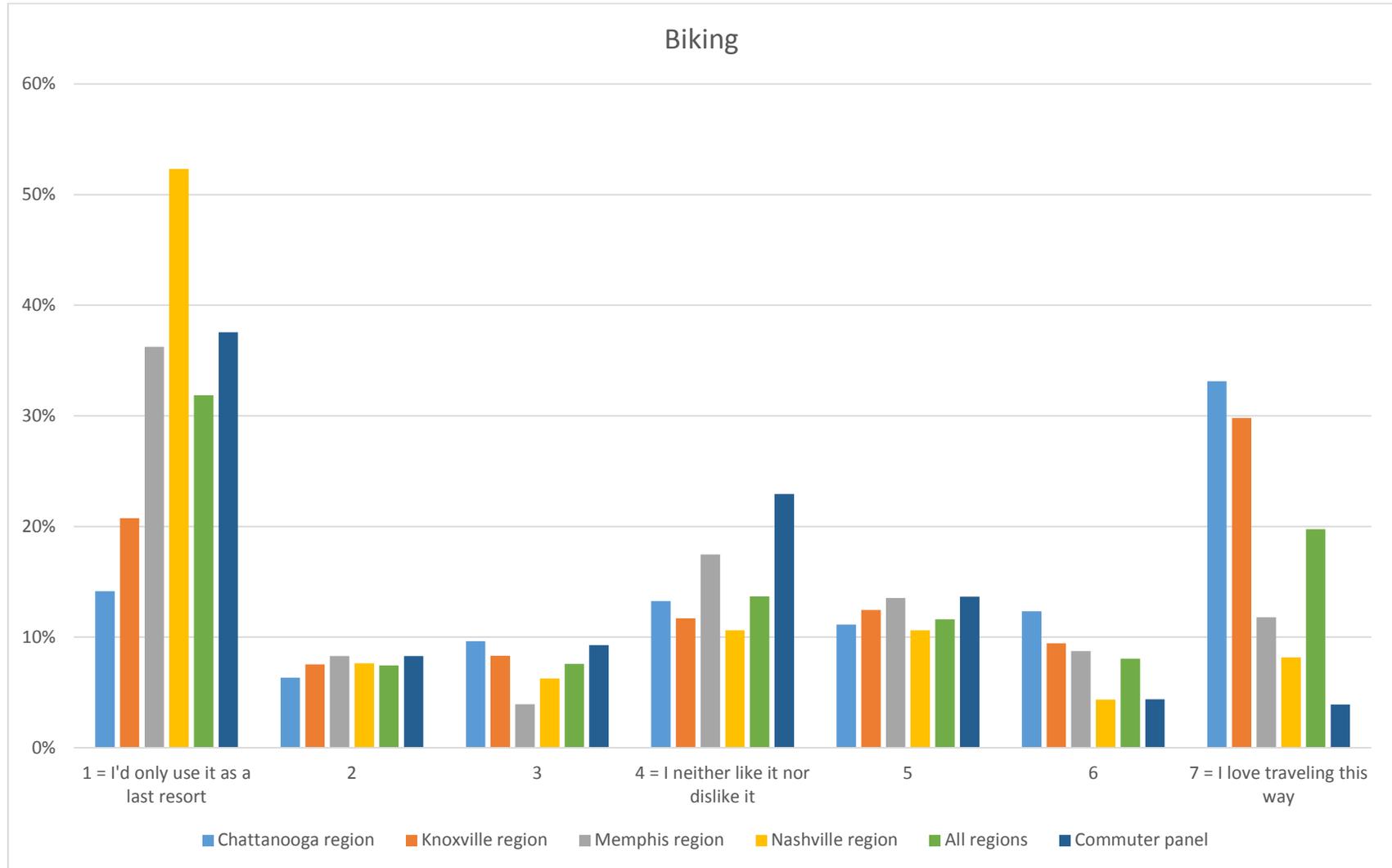
Walking also received mixed reviews, and more than 40% of Nashville respondents said they will walk as a travel mode only as a last resort.



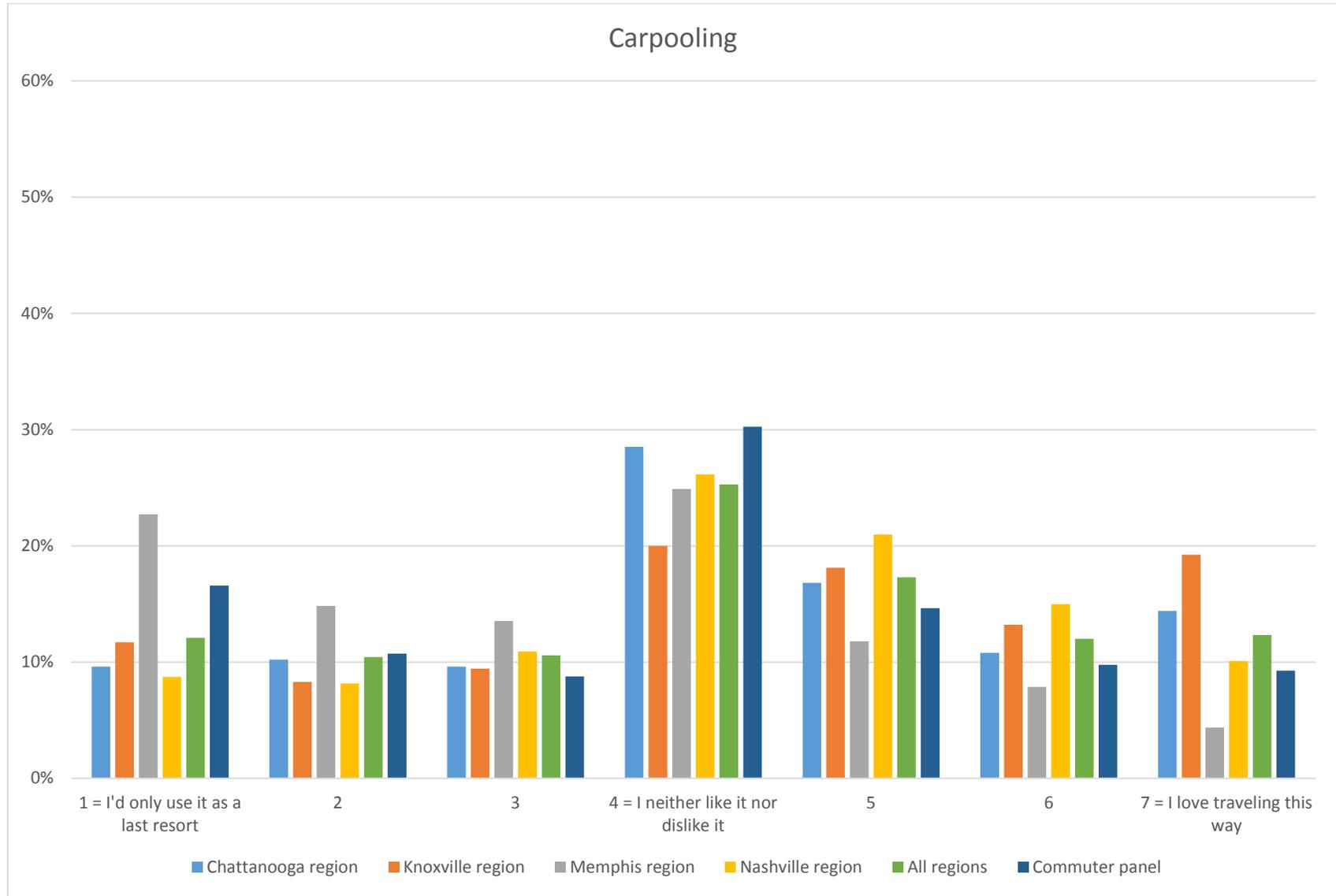
Of the modes tested, taking the bus was the least liked by respondents.



Biking was the only tested mode with a large number of respondents saying they would use it only as a last resort and a large number saying they love travelling by the mode.

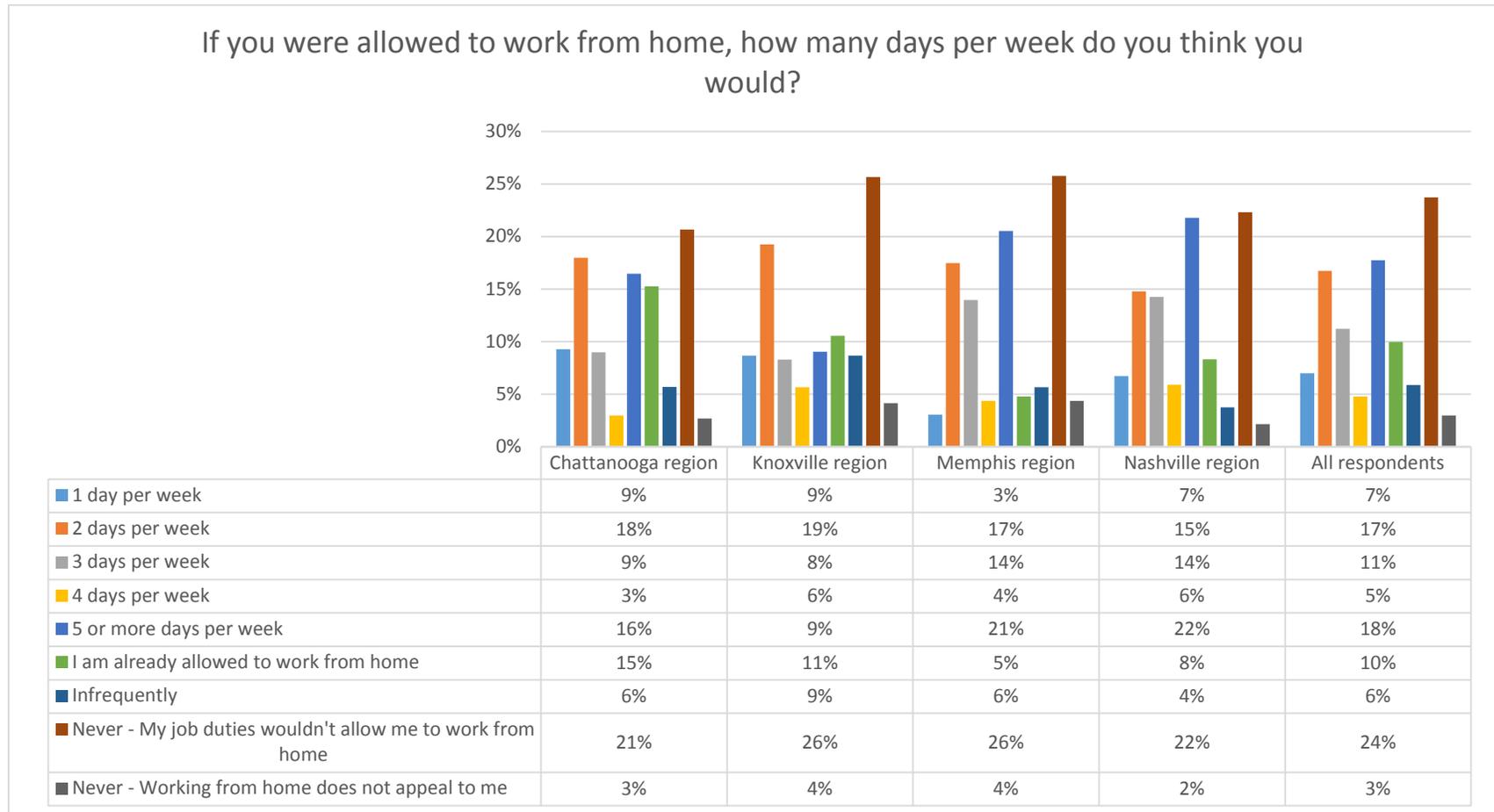


The final mode tested was carpooling, which received the most neutral reviews of all travel modes.



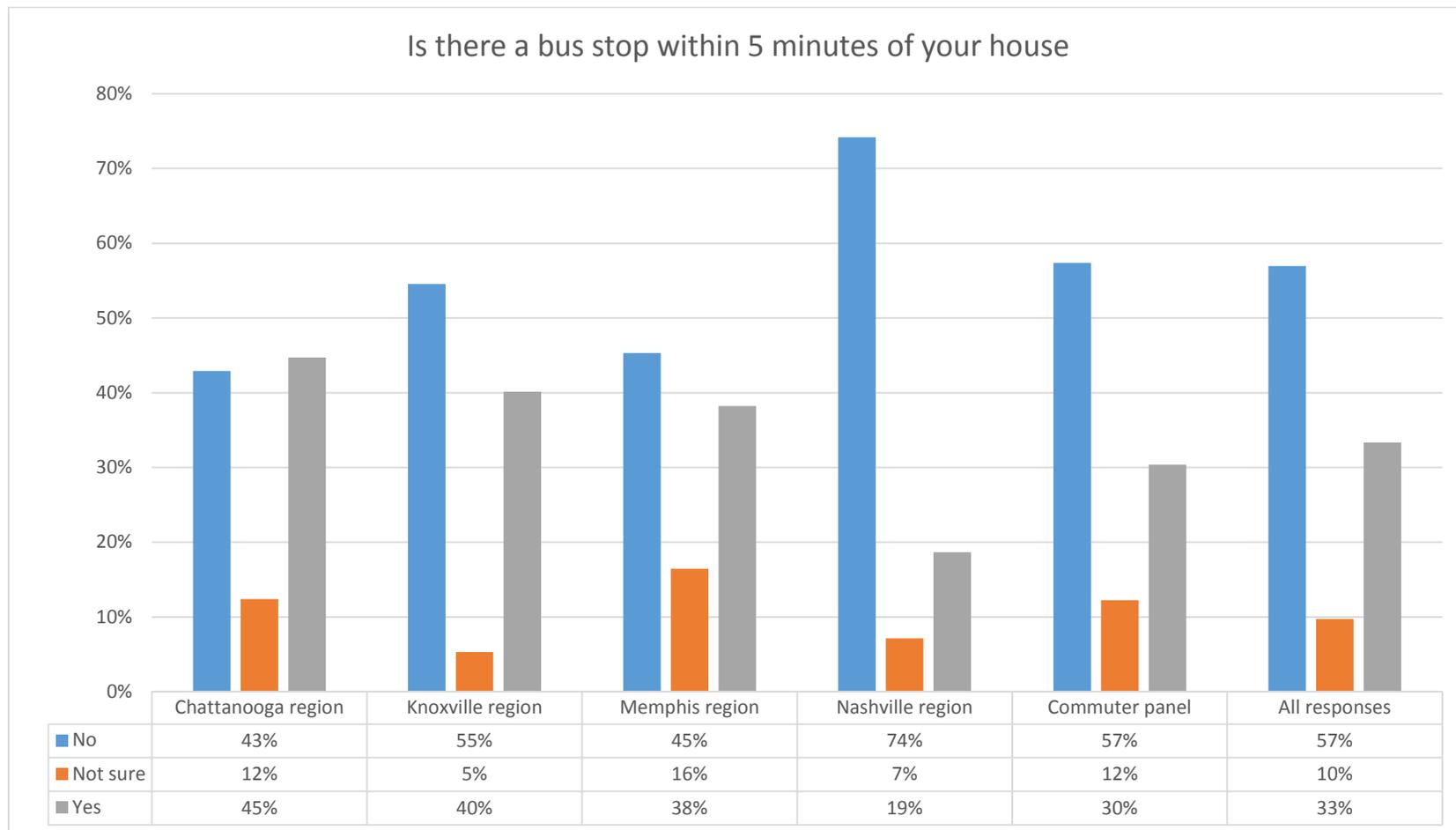
Working from home

Respondents were asked about their interest in working from home, which is an excellent way to reduce vehicle travel associated with commutes. Most respondents suggested they would never work from home due to their job duties not allowing them to. Memphis and Nashville had the highest number of respondents who said they would work from home 5 or more days, if they could (21% and 22%).

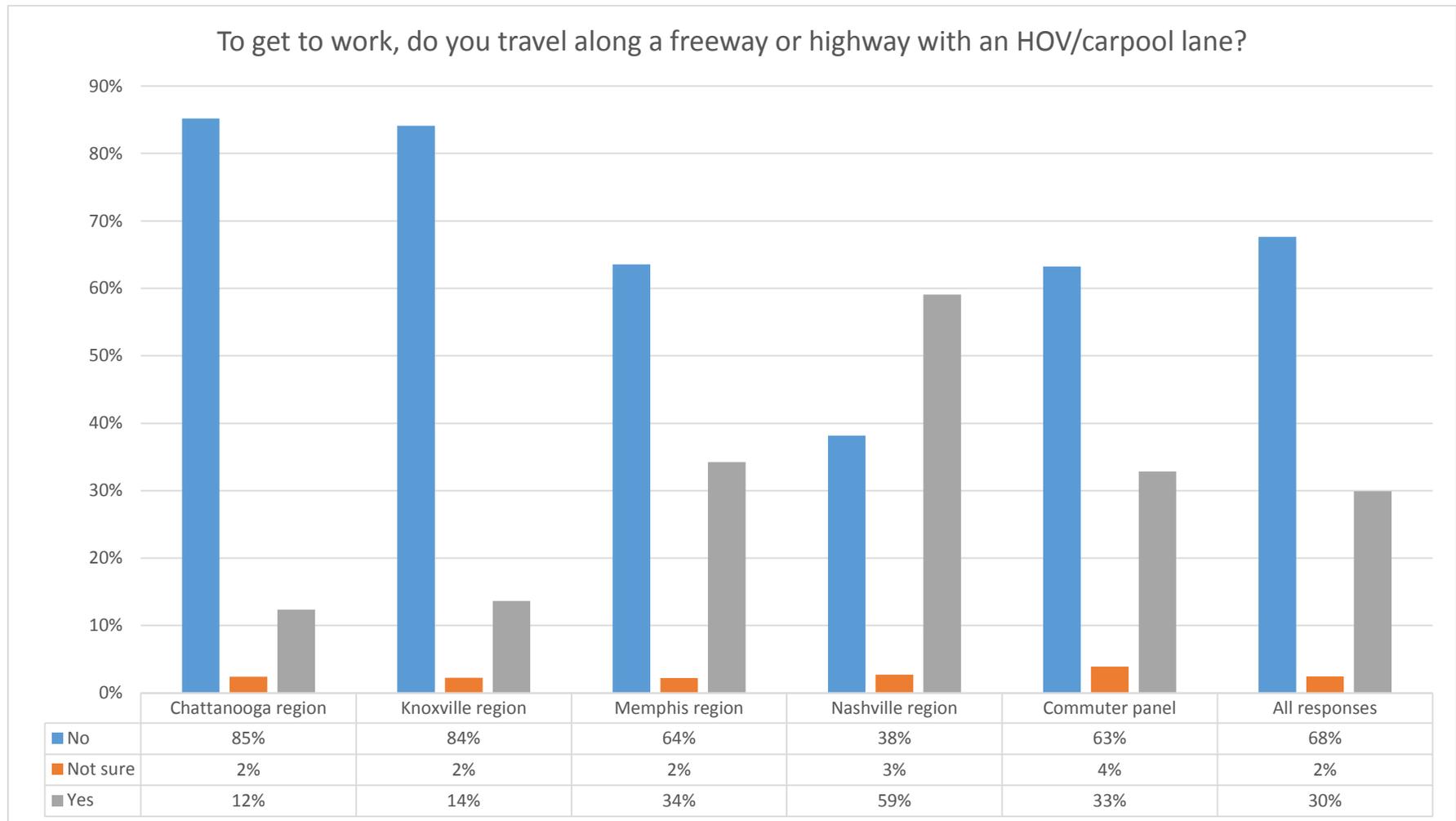


3.4 Current transportation infrastructure and programs

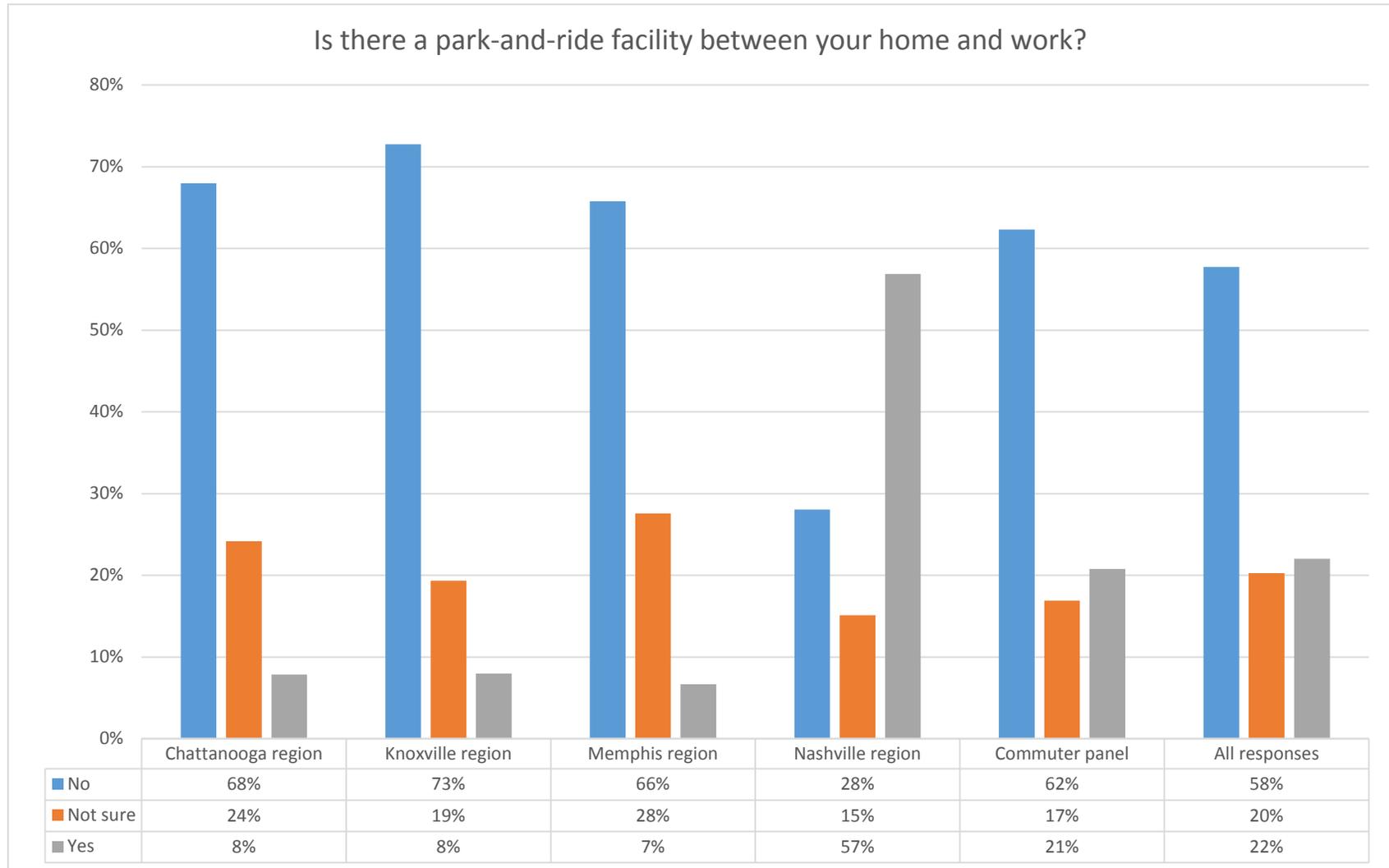
Respondents were asked to report if their home was located within a 5-minute walk of a bus stop. The responses were then analyzed to determine what effect being near a bus stop has on mode choice. As would be expected, being within a 5-minute walk of a bus stop was strongly correlated with riding the bus. Such location was also correlated with biking and walking to work. This is likely because in areas with a higher density of bus stops it is often easier/more comfortable to walk and bike. The presence of a bus stop was inversely correlated with riding in a vanpool. This is an expected results as vanpools are typically used when transit is not available.



Respondents were also asked if they travel along a freeway or highway with an HOV lane. An analysis found that respondents who do travel along a roadway with an HOV lane were significantly more likely to ride in a vanpool than other respondents. No correlation was found between travel along a facility with an HOV lane and commuting by carpool.

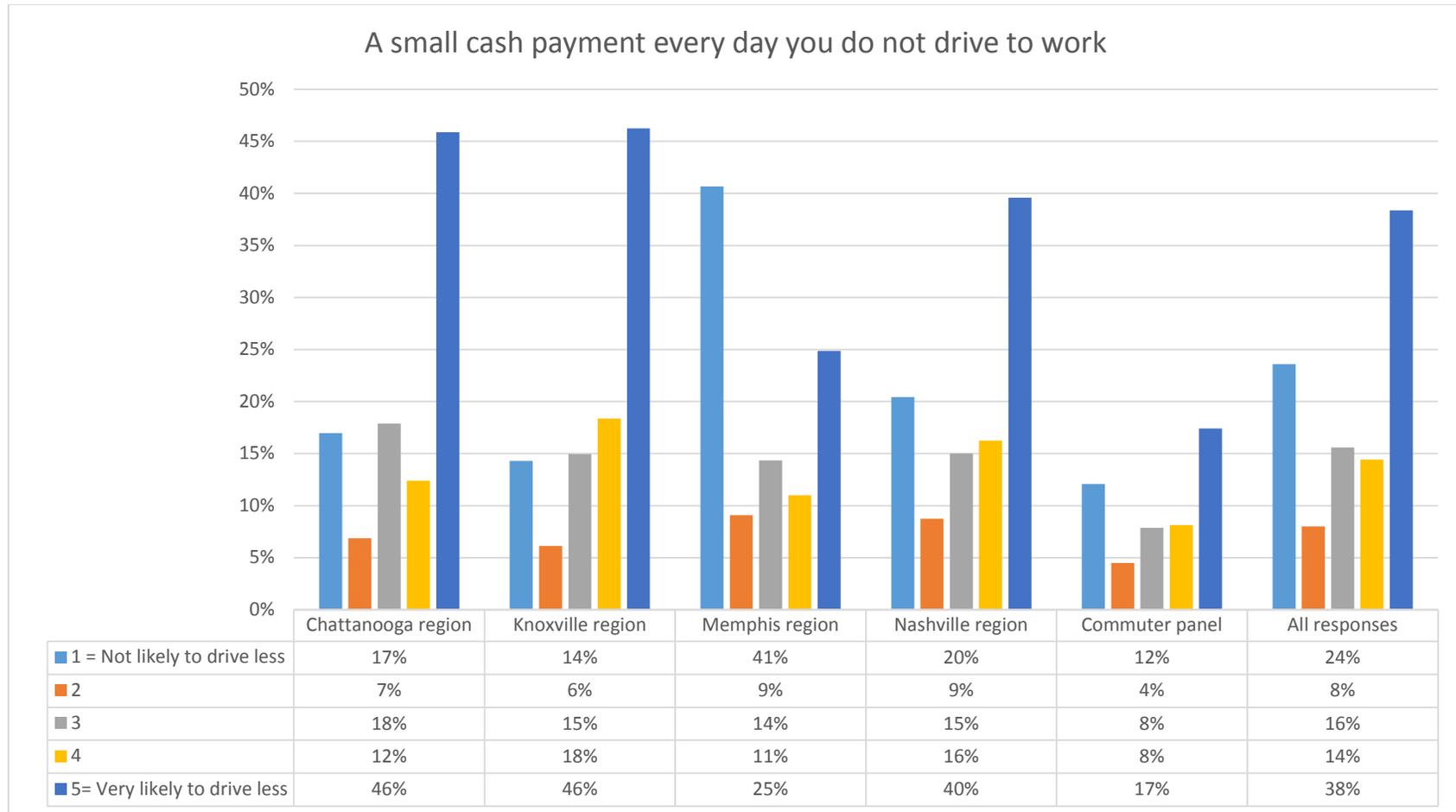


Respondents were asked whether there is a park-and-ride facility between their home and work. There was a statistically strong correlation between the presence of a park-and-ride facility and the use of vanpool and rail transit as a commute mode. There was a weak correlation associated with bus commuting.

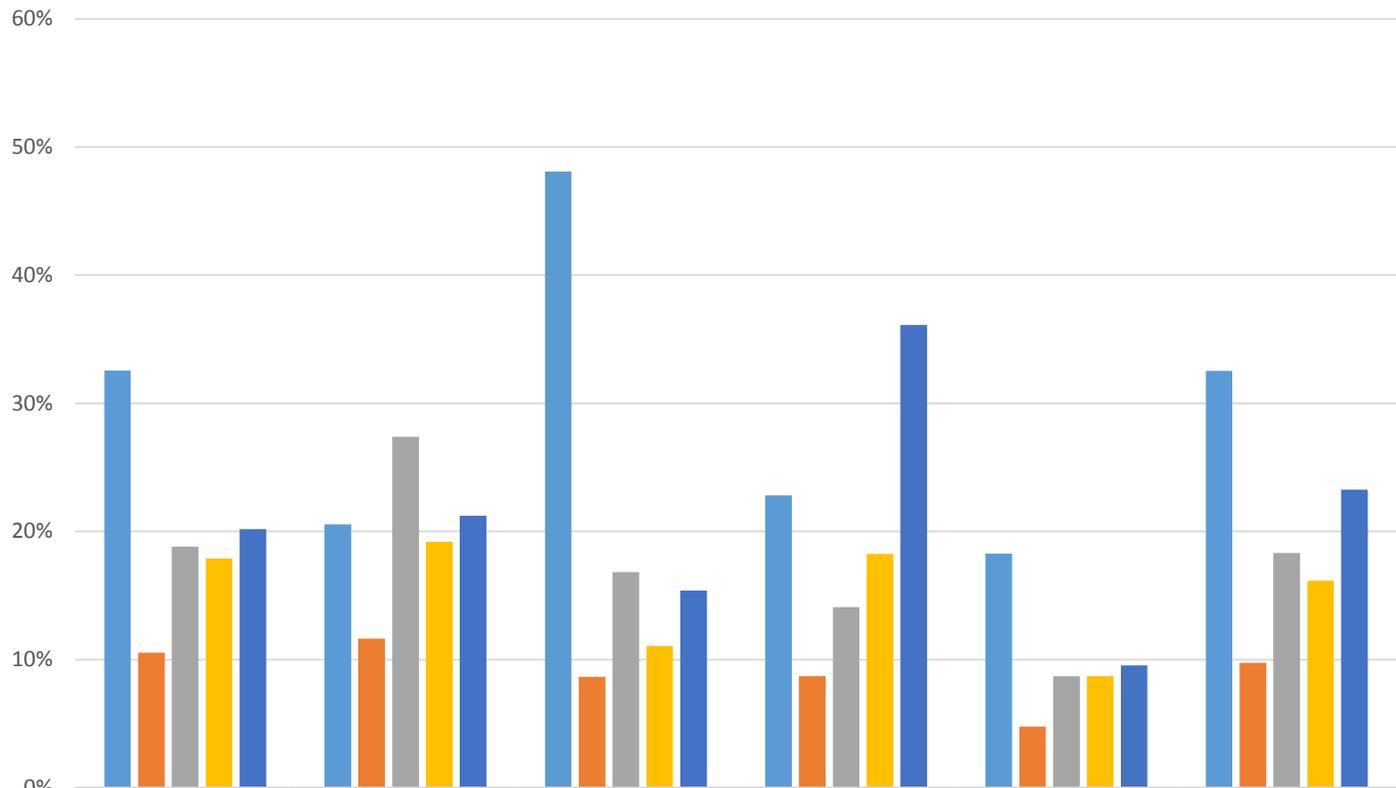


3.5 Motivating programs and initiatives to reduce driving alone

Survey respondents were provided with a list of programs and incentives that can reduce the need to drive alone to work. Using a provided scale, respondents said how likely or not each program or incentive would be to reduce their propensity to drive alone to work. The results are summarized in a series of figures and are shown in order of descending preference based on the responses from the “all respondents” group.

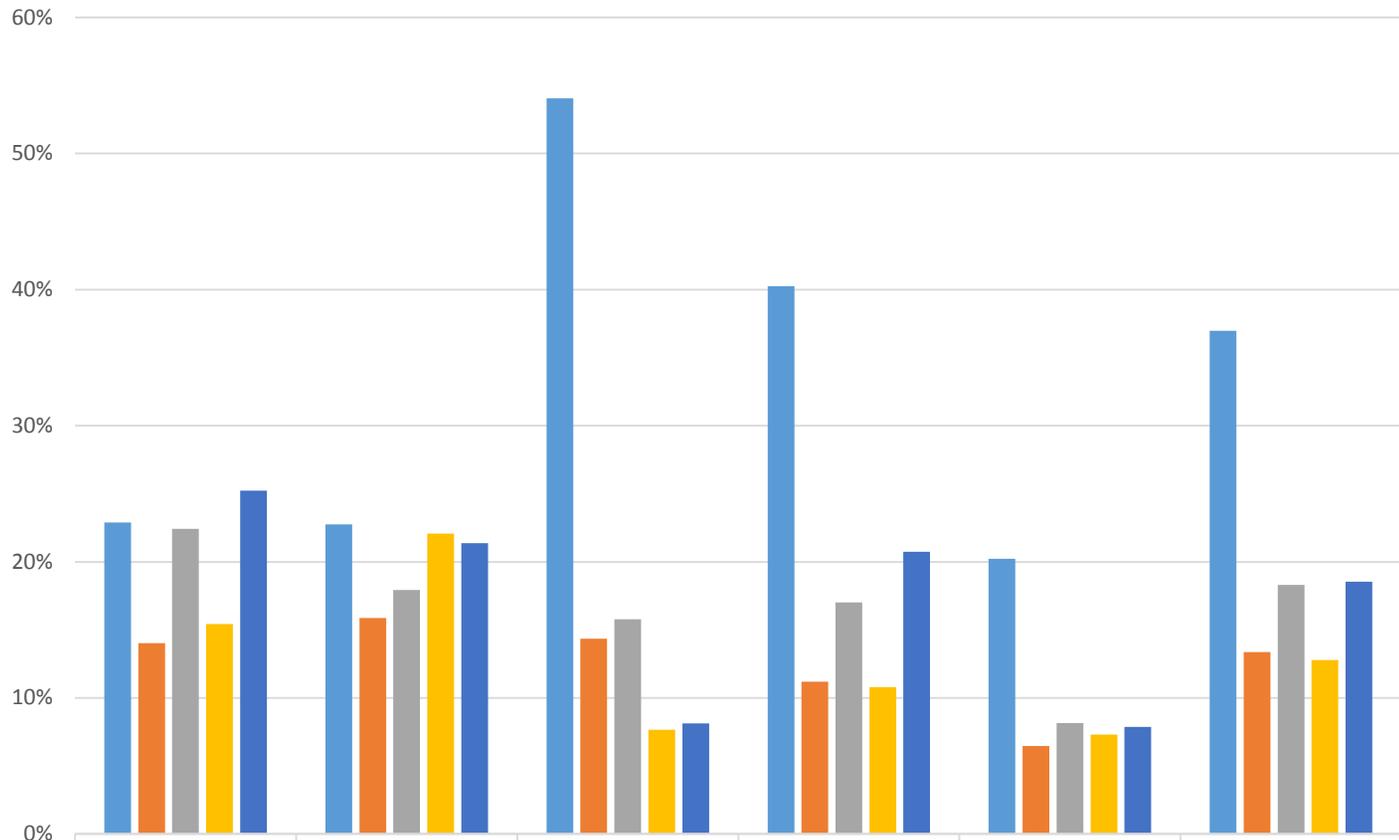


A free ride home if you don't drive to work but need to leave for an emergency or sickness or have to work unscheduled overtime



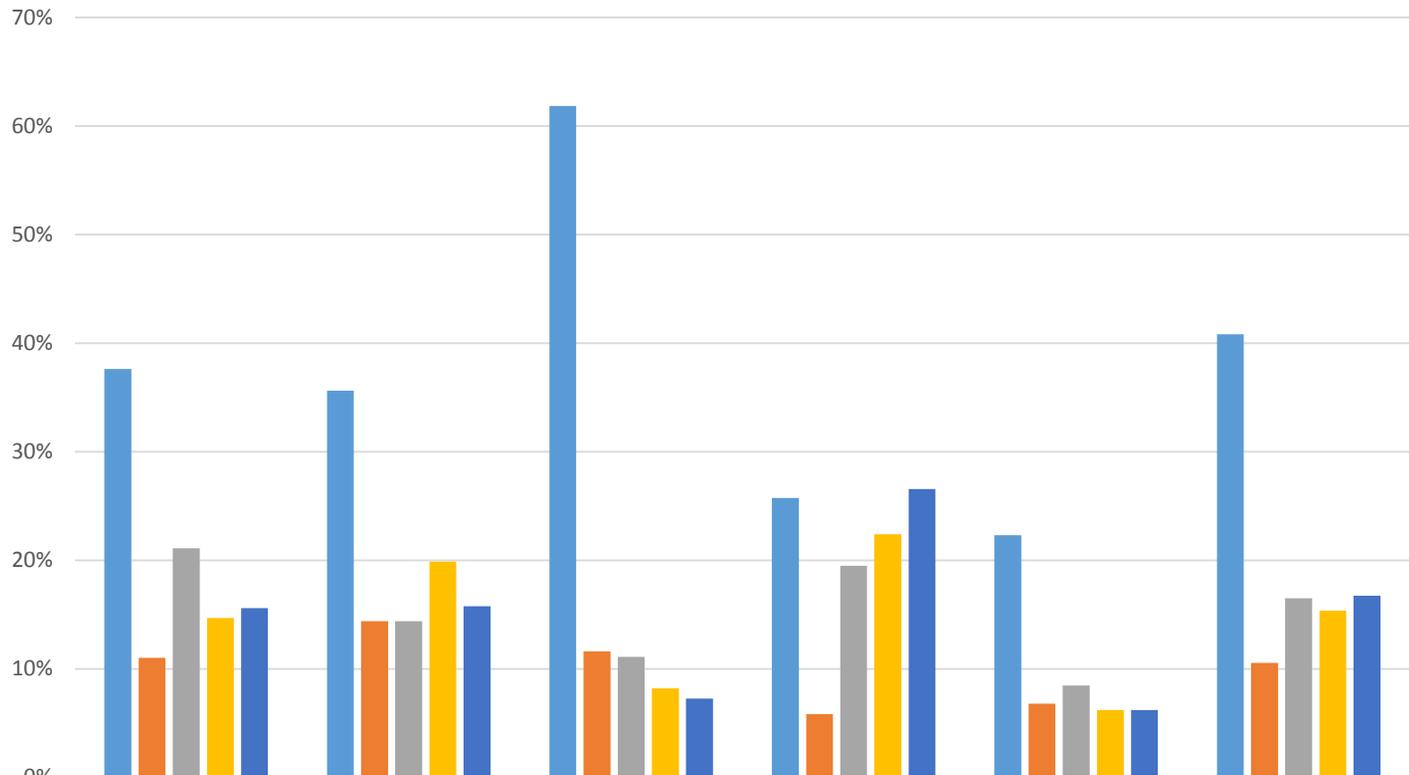
	Chattanooga region	Knoxville region	Memphis region	Nashville region	Commuter Panel	All responses
■ 1 = Not likely to drive less	33%	21%	48%	23%	18%	33%
■ 2	11%	12%	9%	9%	5%	10%
■ 3	19%	27%	17%	14%	9%	18%
■ 4	18%	19%	11%	18%	9%	16%
■ 5= Very likely to drive less	20%	21%	15%	36%	10%	23%

A chance to win in a prize raffle every day you don't drive to work



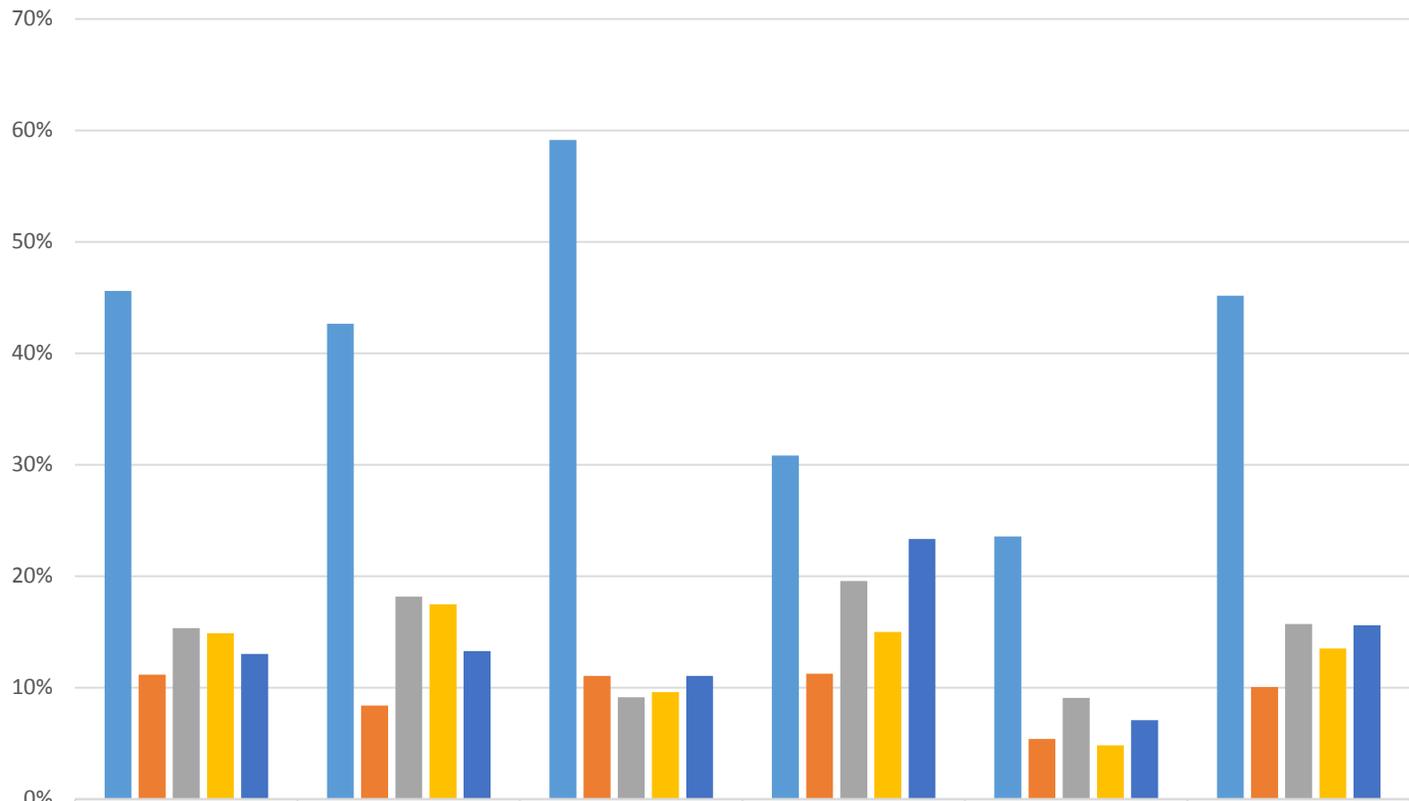
	Chattanooga region	Knoxville region	Memphis region	Nashville region	Commuter Panel	All responses
1 = Not likely to drive less	23%	23%	54%	40%	20%	37%
2	14%	16%	14%	11%	6%	13%
3	22%	18%	16%	17%	8%	18%
4	15%	22%	8%	11%	7%	13%
5= Very likely to drive less	25%	21%	8%	21%	8%	19%

Ability to slightly modify your work schedule so that it matches a transit schedule



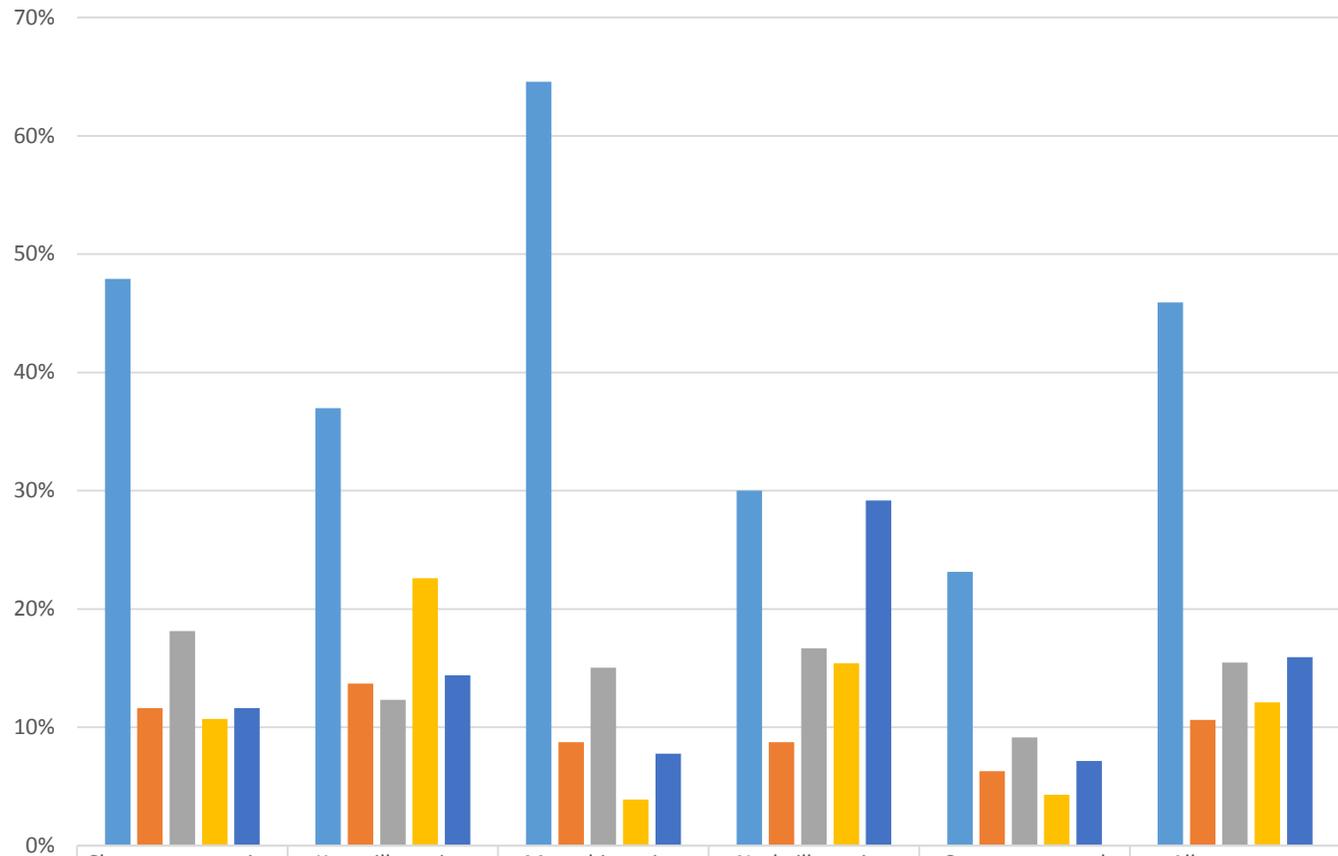
	Chattanooga region	Knoxville region	Memphis region	Nashville region	Commuter panel	All responses
1 = Not likely to drive less	38%	36%	62%	26%	22%	41%
2	11%	14%	12%	6%	7%	11%
3	21%	14%	11%	20%	8%	17%
4	15%	20%	8%	22%	6%	15%
5 = Very likely to drive less	16%	16%	7%	27%	6%	17%

Special parking if you carpool to work that is closer to entrances or protected from the sun



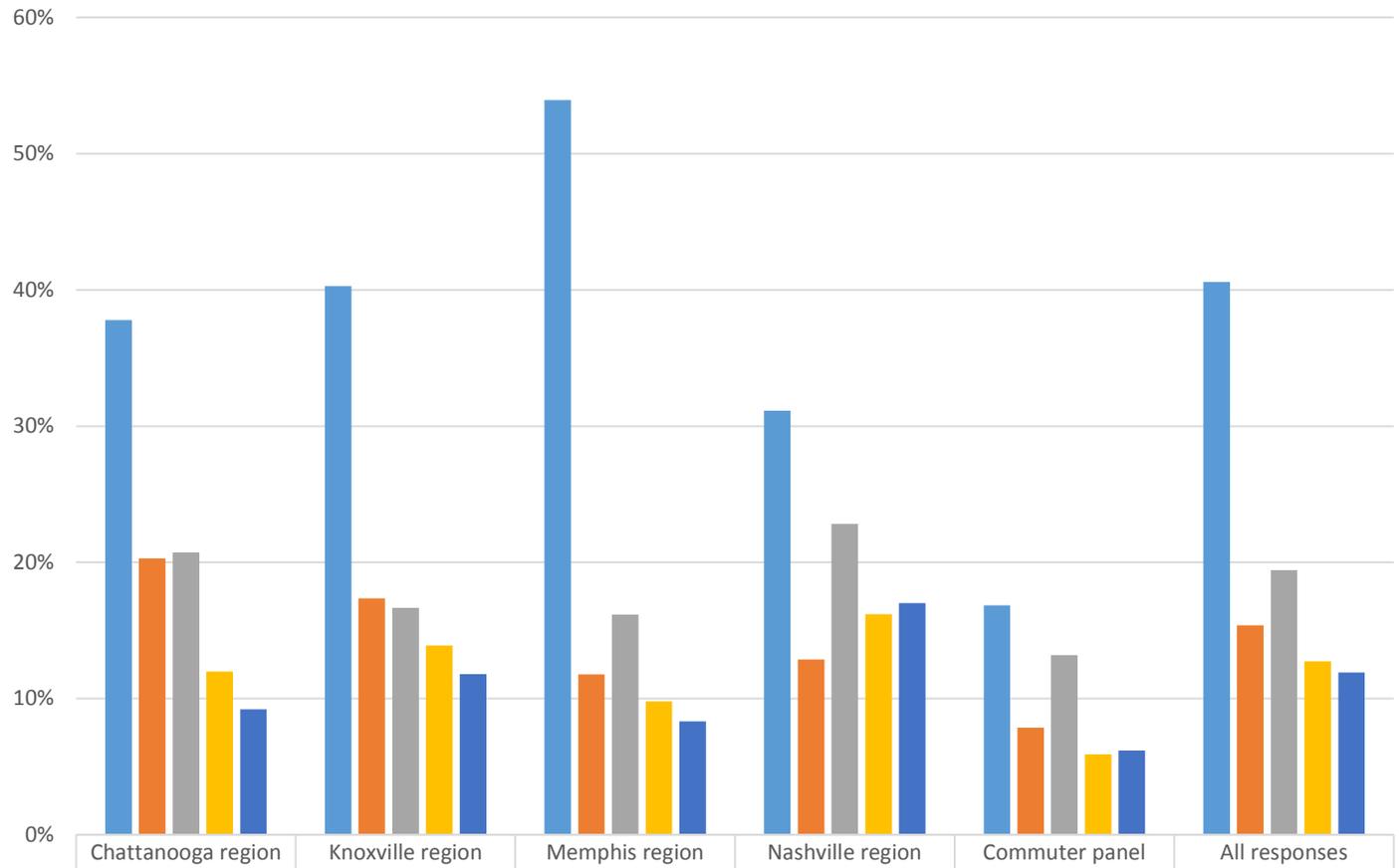
	Chattanooga region	Knoxville region	Memphis region	Nashville region	Cammuter panel	All respondents
1 = Not likely to drive less	46%	43%	59%	31%	24%	45%
2	11%	8%	11%	11%	5%	10%
3	15%	18%	9%	20%	9%	16%
4	15%	17%	10%	15%	5%	14%
5= Very likely to drive less	13%	13%	11%	23%	7%	16%

Discounts on transit passes



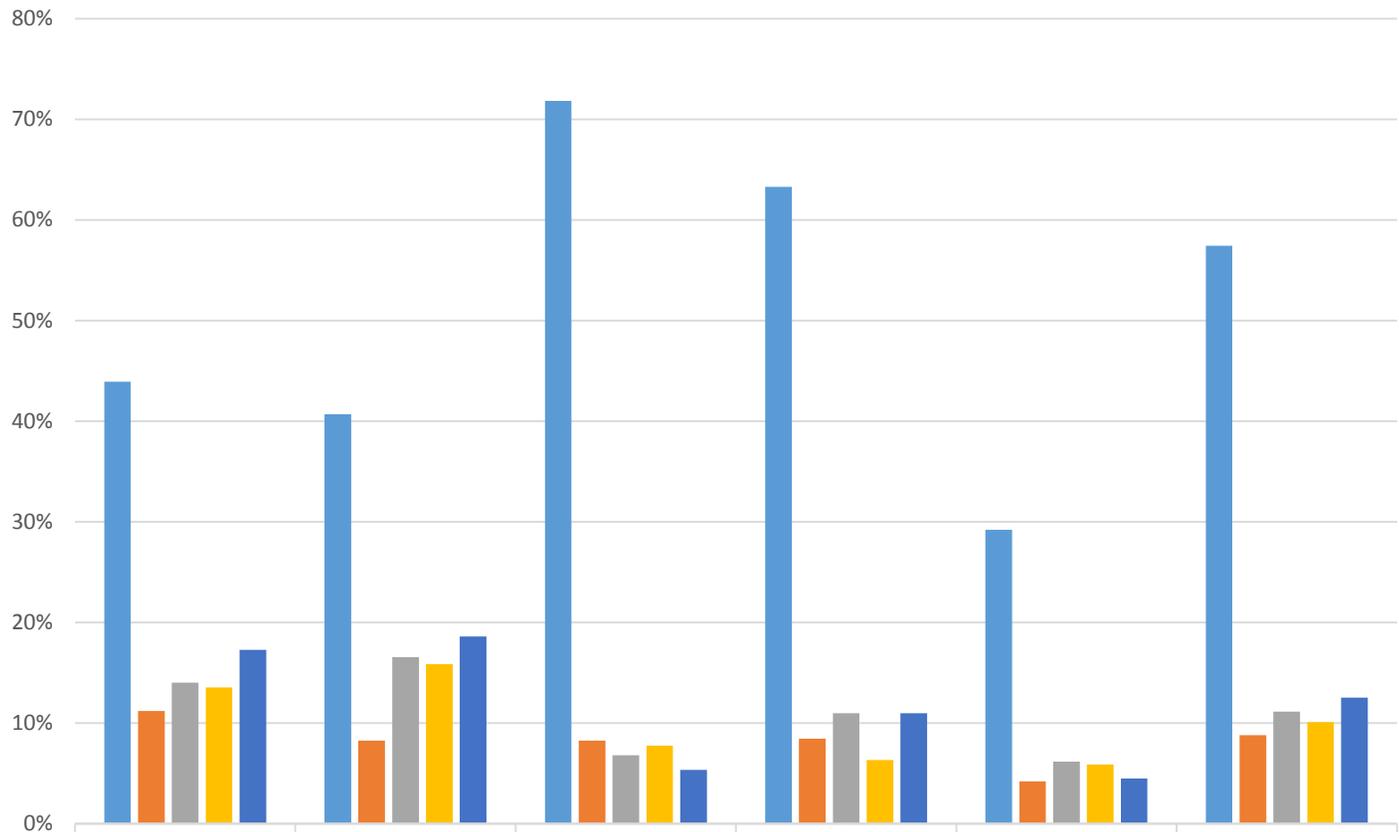
	Chattanooga region	Knoxville region	Memphis region	Nashville region	Commuter panel	All responses
1 = Not likely to drive less	48%	37%	65%	30%	23%	46%
2	12%	14%	9%	9%	6%	11%
3	18%	12%	15%	17%	9%	15%
4	11%	23%	4%	15%	4%	12%
5 = Very likely to drive less	12%	14%	8%	29%	7%	16%

Assistance finding a carpool partner



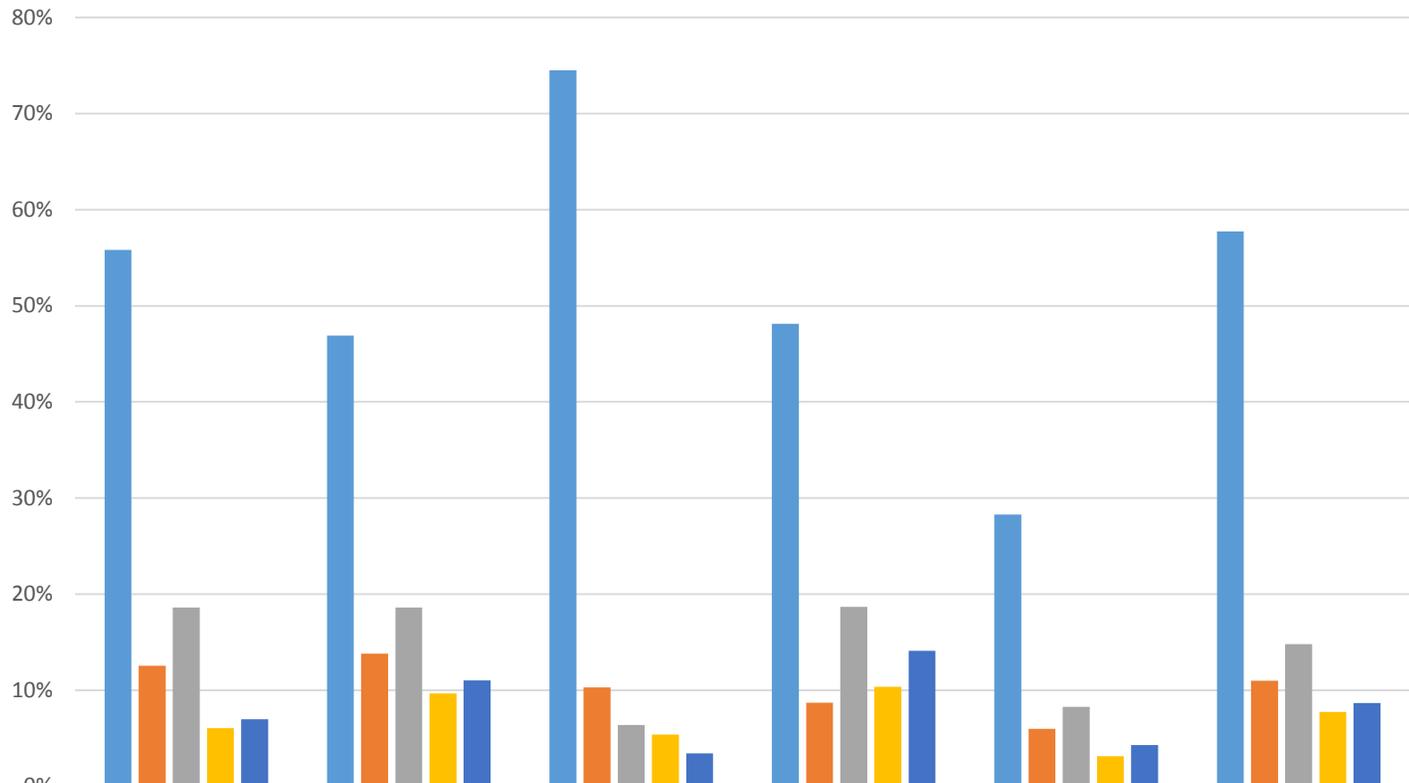
	Chattanooga region	Knoxville region	Memphis region	Nashville region	Commuter panel	All responses
■ 1 = Not likely to drive less	38%	40%	54%	31%	17%	41%
■ 2	20%	17%	12%	13%	8%	15%
■ 3	21%	17%	16%	23%	13%	19%
■ 4	12%	14%	10%	16%	6%	13%
■ 5 = Very likely to drive less	9%	12%	8%	17%	6%	12%

Help finding a safe walking/bike route



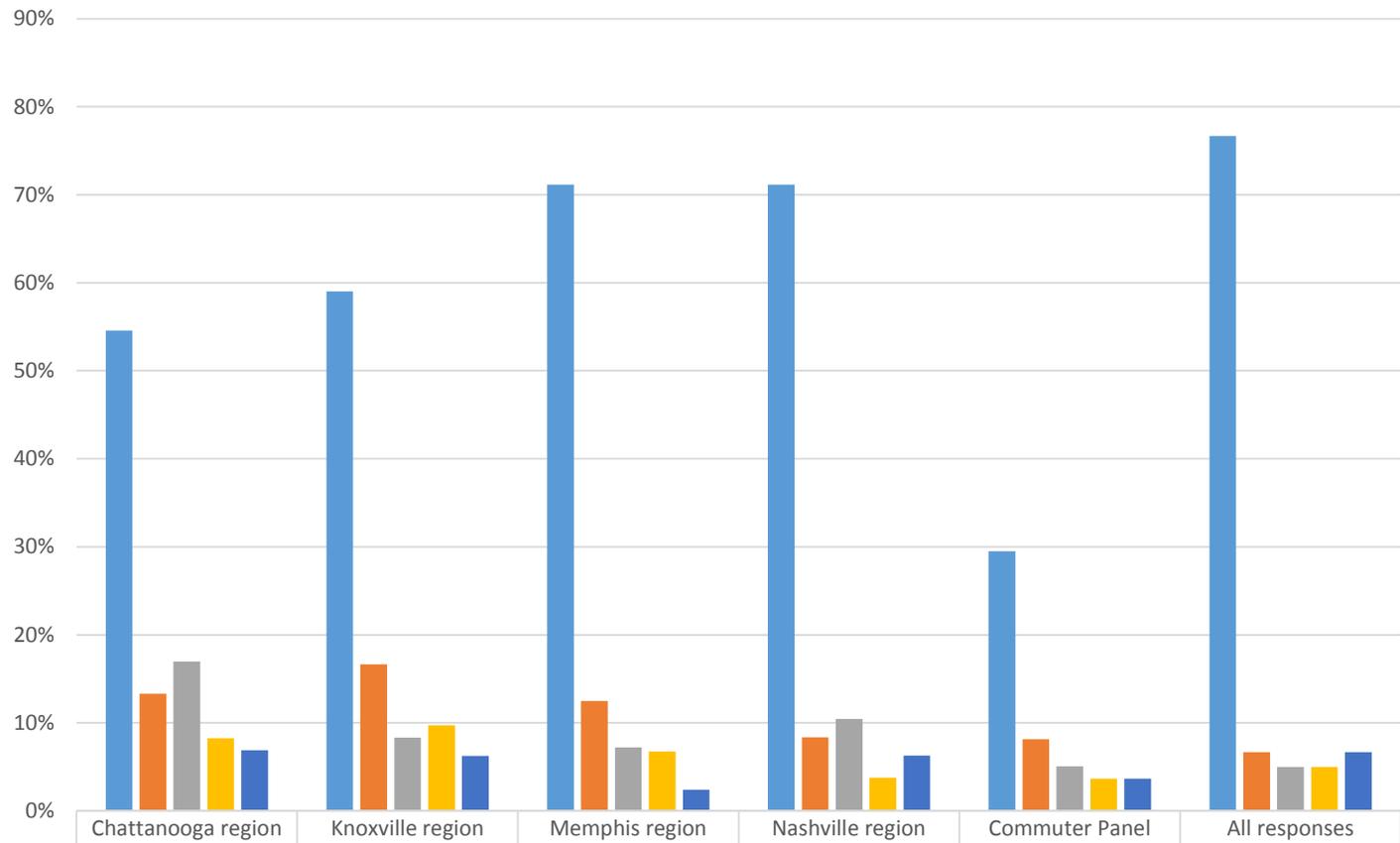
	Chattanooga region	Knoxville region	Memphis region	Nashville region	Commuter Panel	All responses
1 = Not likely to drive less	44%	41%	72%	63%	29%	57%
2	11%	8%	8%	8%	4%	9%
3	14%	17%	7%	11%	6%	11%
4	14%	16%	8%	6%	6%	10%
5= Very likely to drive less	17%	19%	5%	11%	4%	13%

Ability to buy a bus pass at work



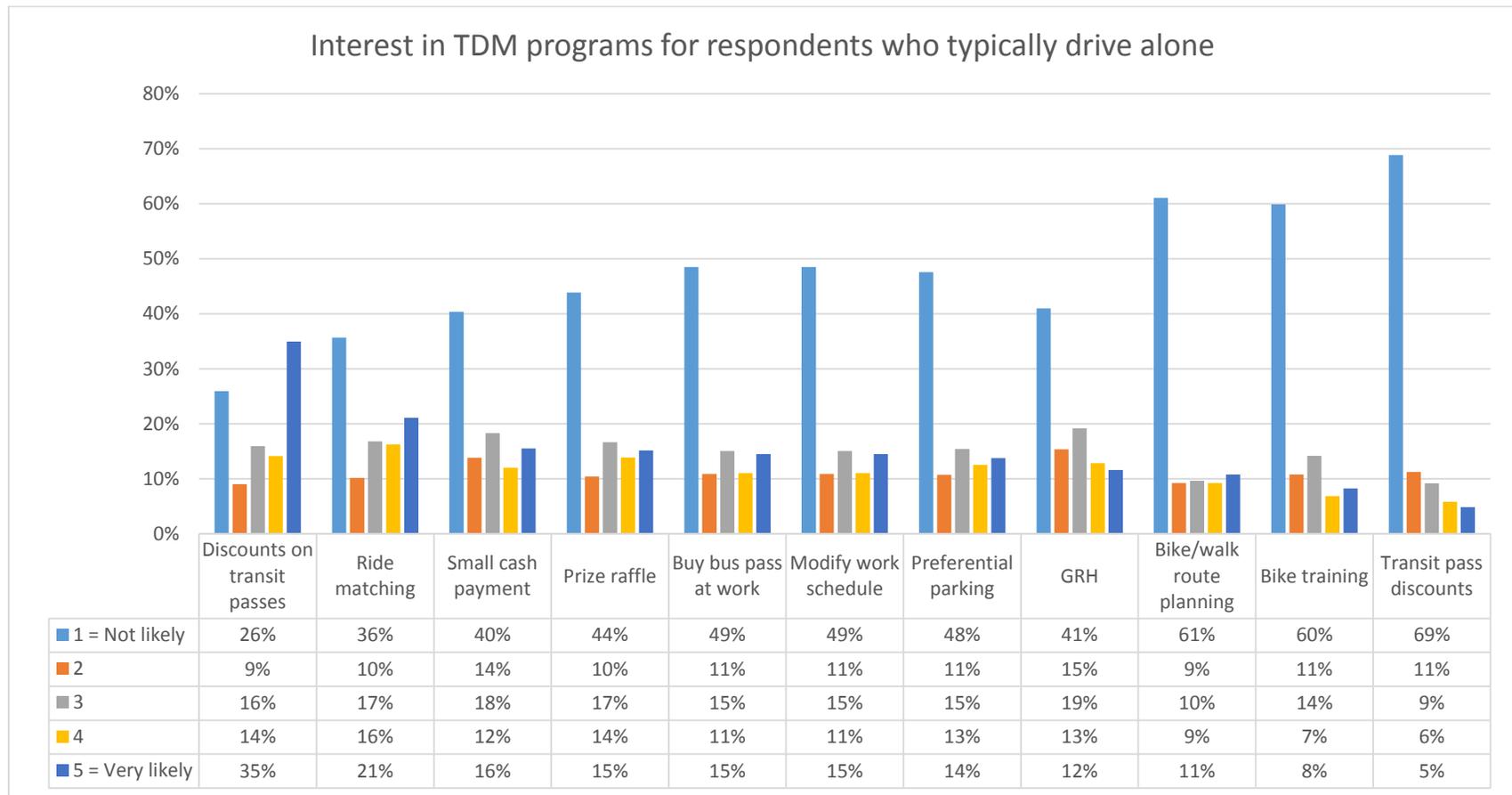
	Chattanooga region	Knoxville region	Memphis region	Nashville region	Commuter panel	All responses
■ 1 = Not likely to drive less	56%	47%	75%	48%	28%	58%
■ 2	13%	14%	10%	9%	6%	11%
■ 3	19%	19%	6%	19%	8%	15%
■ 4	6%	10%	5%	10%	3%	8%
■ 5= Very likely to drive less	7%	11%	3%	14%	4%	9%

Training classes where you learn bicycle riding skills and/or how to maintain and repair a bicycle



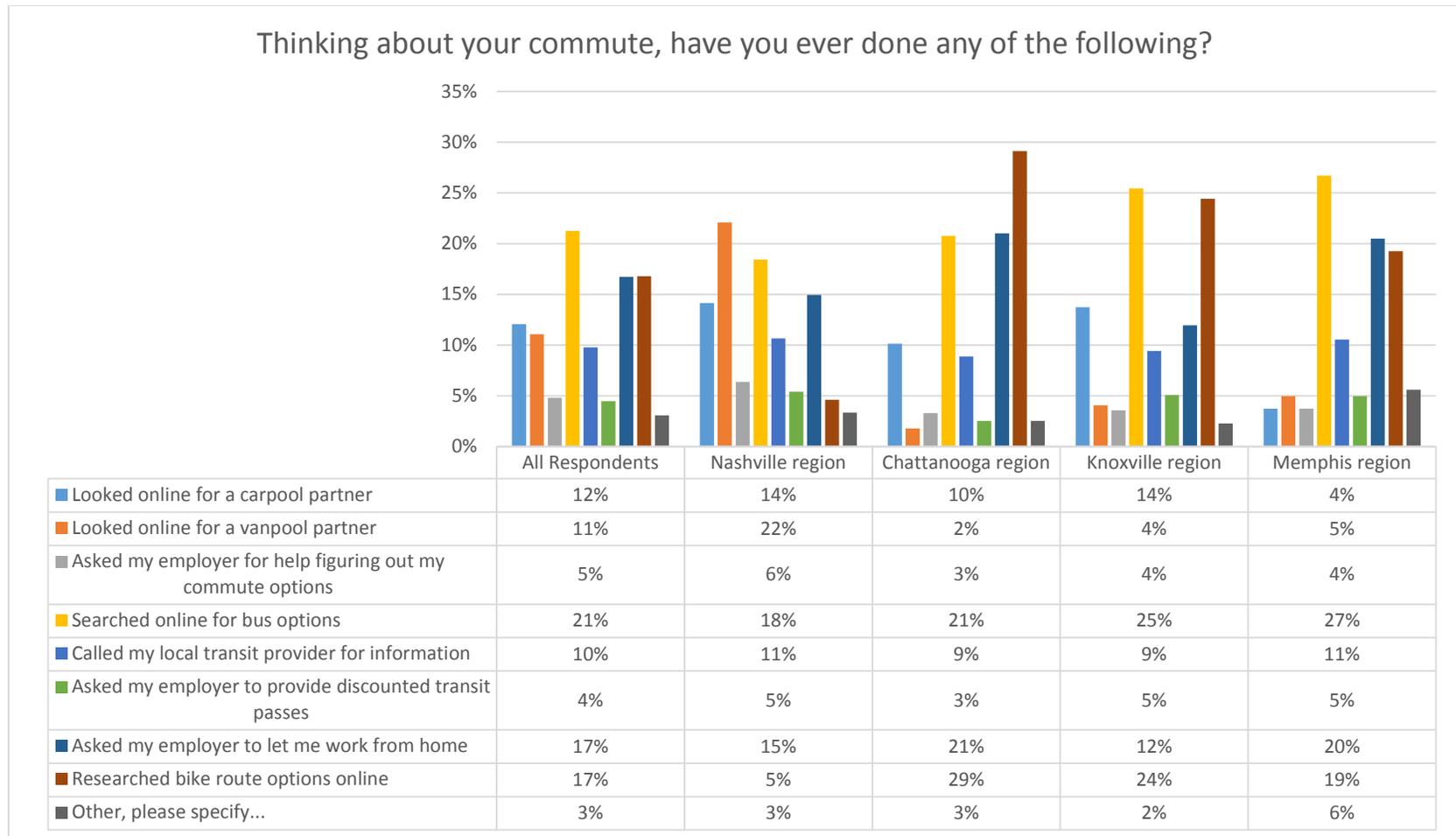
	Chattanooga region	Knoxville region	Memphis region	Nashville region	Commuter Panel	All responses
1 = Not likely to drive less	55%	59%	71%	71%	29%	77%
2	13%	17%	13%	8%	8%	7%
3	17%	8%	7%	10%	5%	5%
4	8%	10%	7%	4%	4%	5%
5 = Very likely to drive less	7%	6%	2%	6%	4%	7%

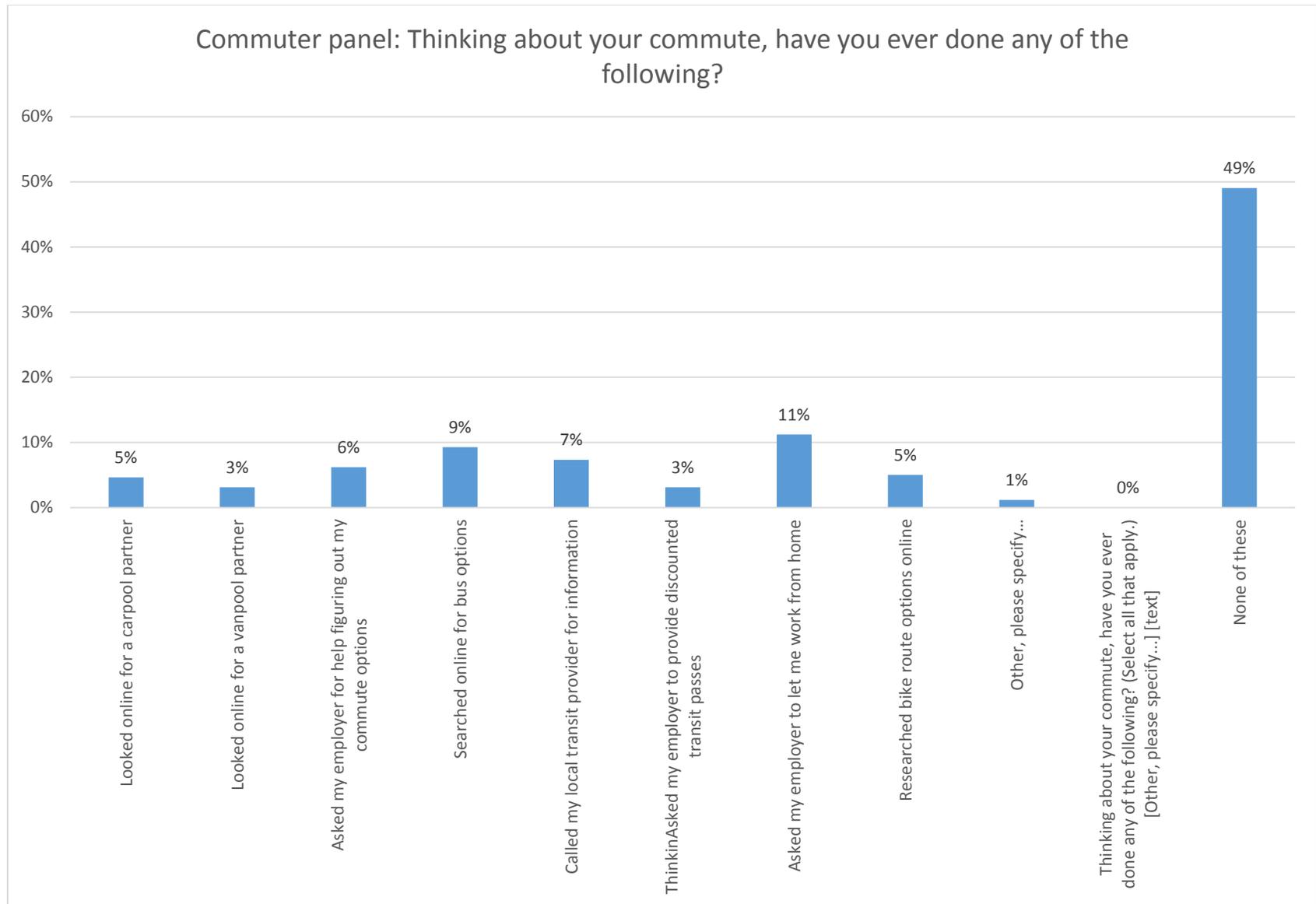
Interest in TDM strategies was analyzed for individuals who primarily drive alone to work. This analysis provides an indication of the types of strategies that would motivate a person who typically drives alone, to change to another commute mode. When analyzing all responses, the top five strategies were: (1) a small cash payment to not drive alone; (2) guaranteed ride home (GRH); (3) opportunities to earn prizes every day you don't drive alone; (4) ability to modify work schedules to match transit options; and (5) preferential parking. This is somewhat different from what is seen below, where discounted transit passes rank highest followed by ride matching, both of which were not in the top five when analyzing all respondents.



3.6 Commute information and forming commute decisions

When asked to think about a variety of attributes regarding commuting, around 20% of respondents suggested they had searched online for bus options, with a further 15-20% suggesting they had asked their employer to let them work from home. Nashville has a high number of respondents suggesting they had looked online for a vanpool partner.

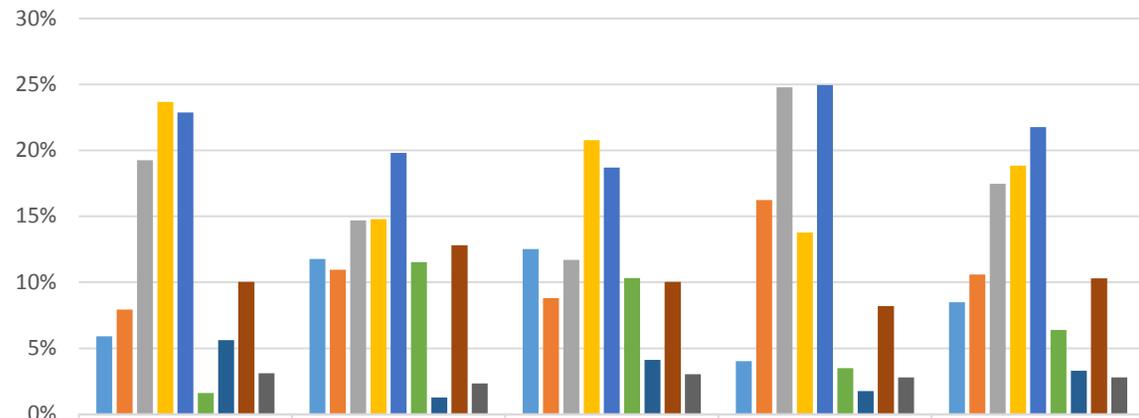




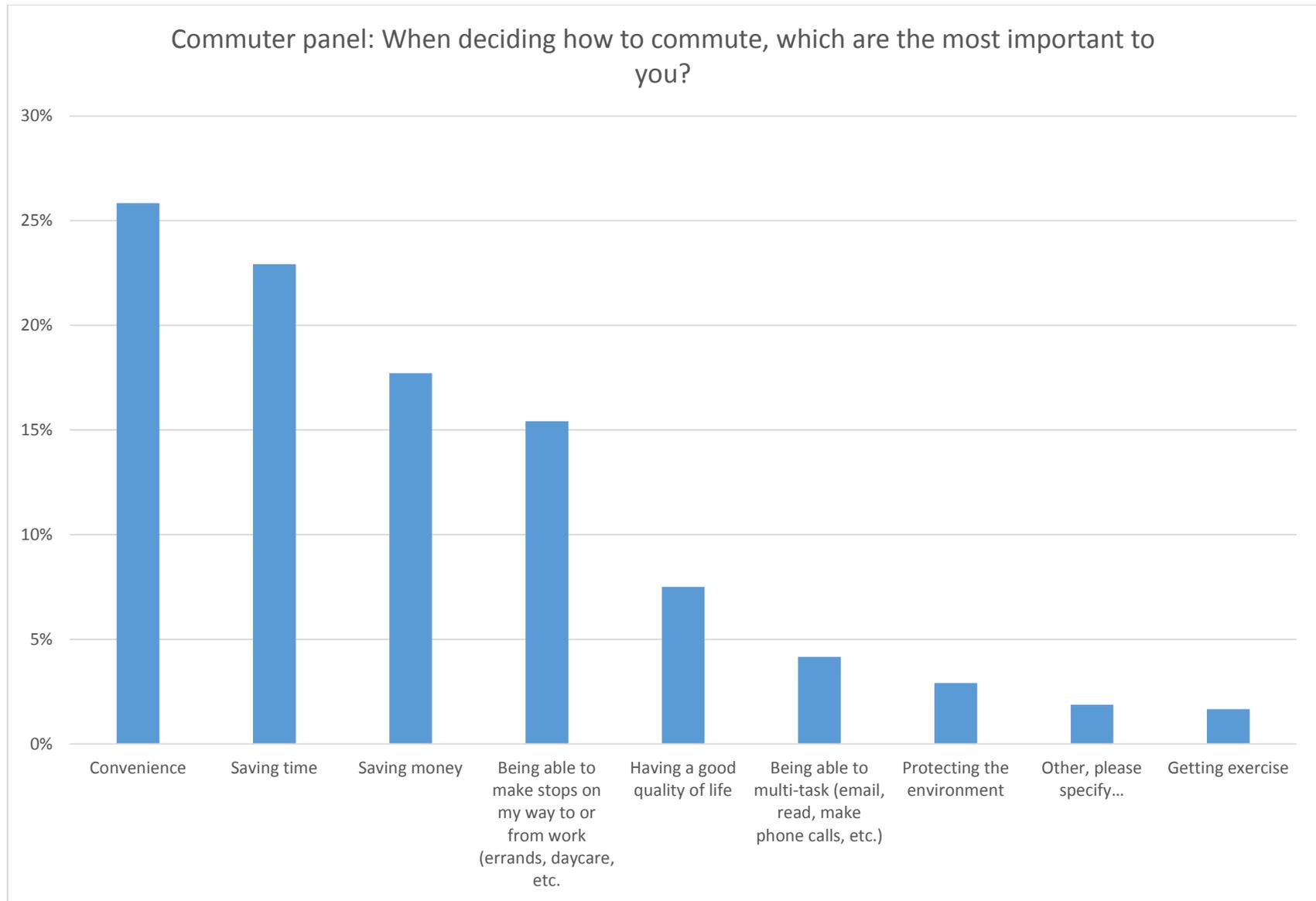
Important attributes of commuting

When asked about what is important to them when deciding how to commute to work, the majority of respondents reported that convenience, saving money and saving time were important.

When deciding how to commute, which of the following are important to you?

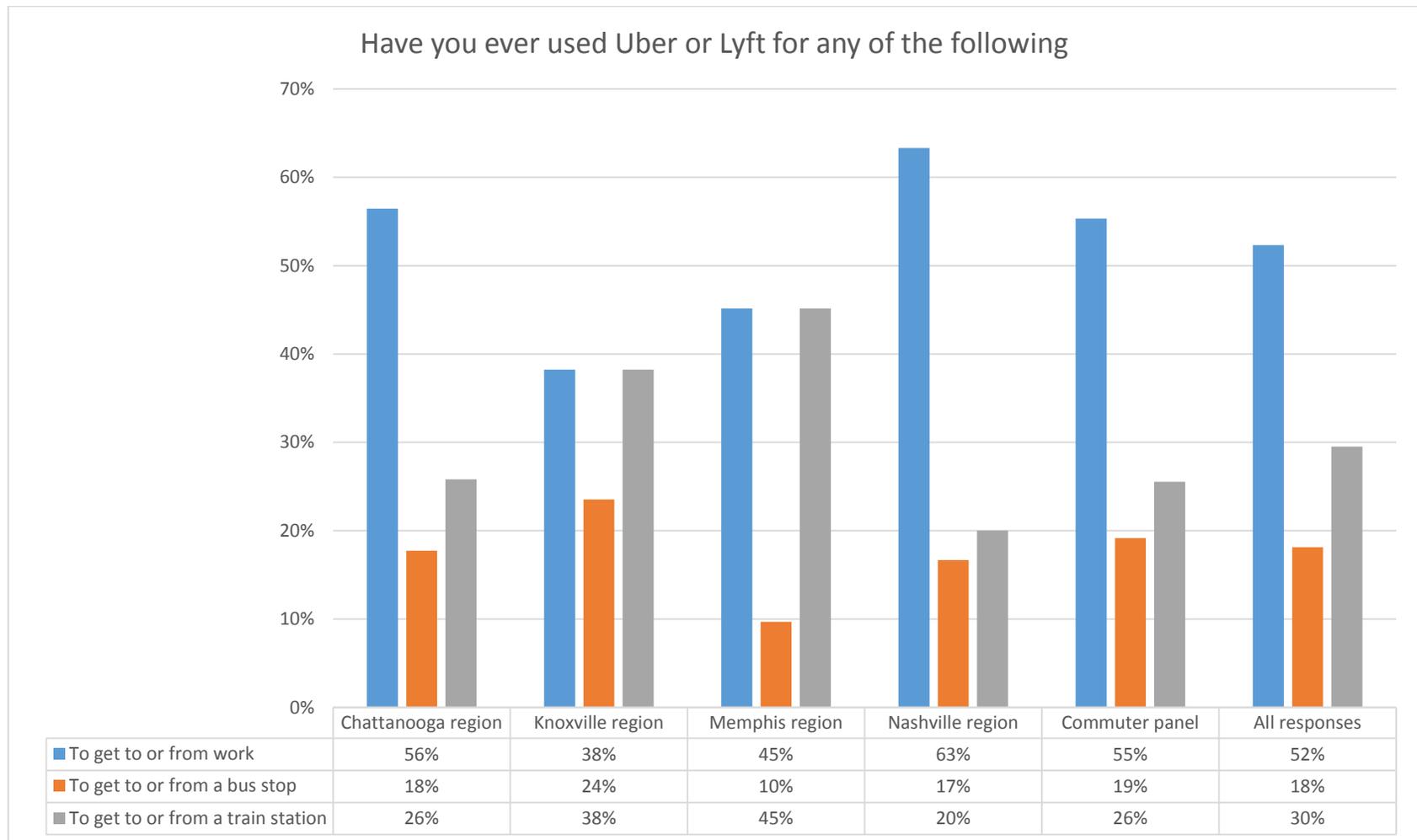


	Nashville region	Chattanooga region	Knoxville region	Memphis region	All regions
Protecting the environment	6%	12%	13%	4%	8%
Being able to make stops on my way to or from work (errands, daycare, etc.)	8%	11%	9%	16%	11%
Saving time	19%	15%	12%	25%	17%
Saving money	24%	15%	21%	14%	19%
Convenience	23%	20%	19%	25%	22%
Getting exercise	2%	12%	10%	3%	6%
Being able to multi-task (email, read, make phone calls, etc.)	6%	1%	4%	2%	3%
Having a good quality of life	10%	13%	10%	8%	10%
Other, please specify...	3%	2%	3%	3%	3%



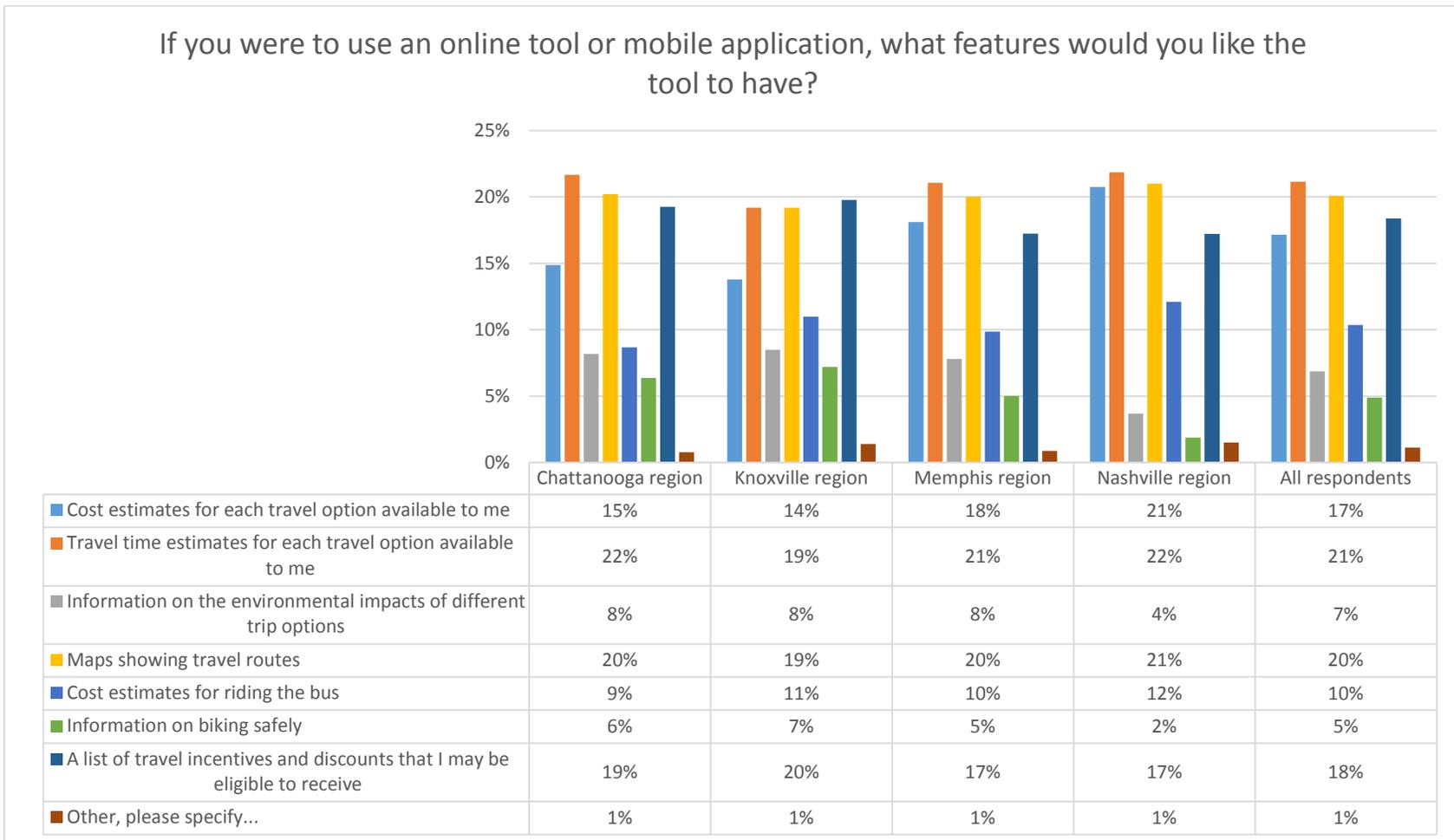
Use of Uber and Lyft

Respondents were asked if they had ever used Uber or Lyft to travel, and 13% said they had. The figure below shows the reasons for which respondents used Uber and/or Lyft.

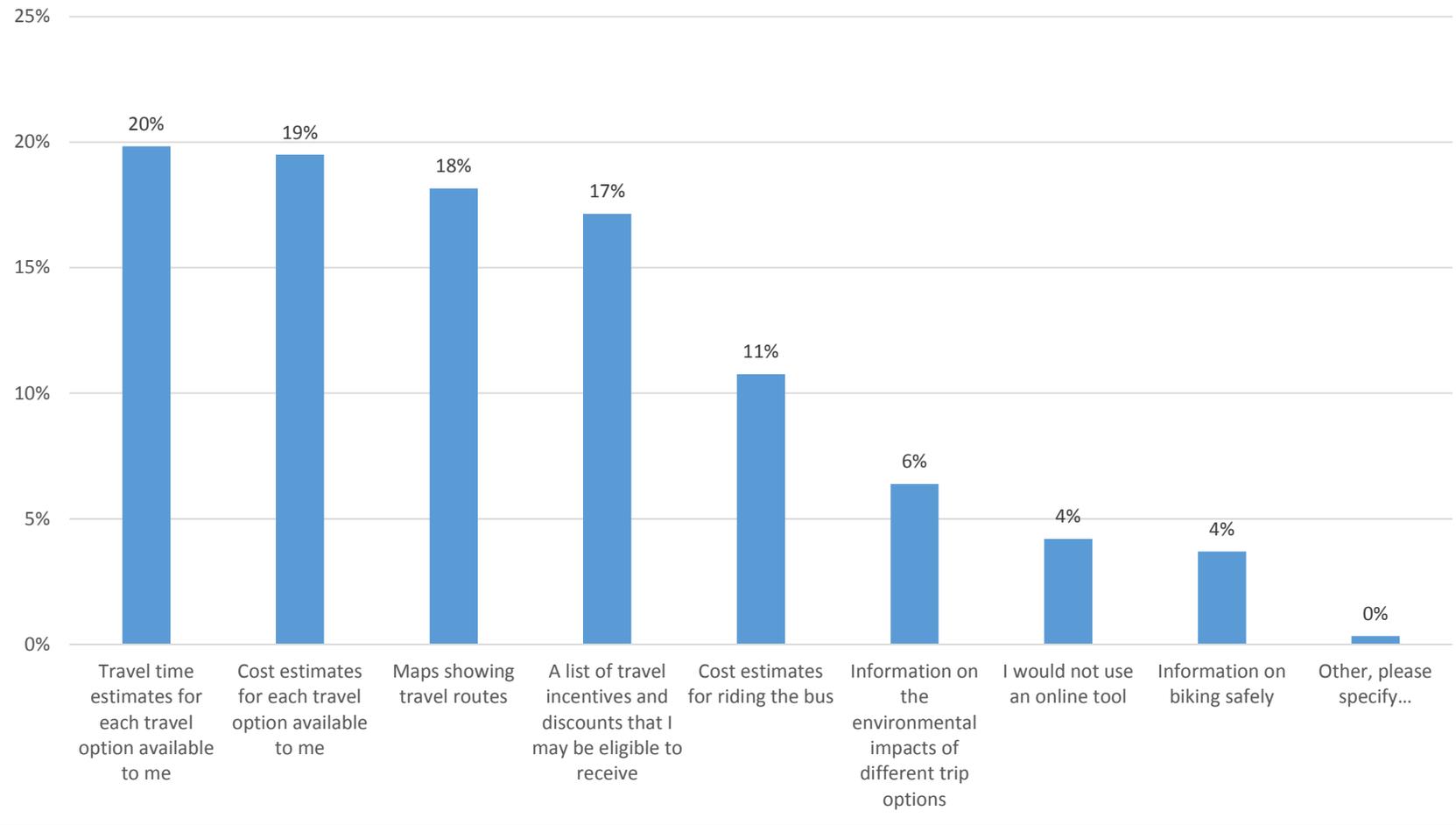


Online tools and mobile app features

Respondents were asked what features they would like to see included in an online tool or mobile app meant to help them learn about their commute options. There was little regional variation in the responses, and the most desired features were cost estimates for travel options, travel time estimates, maps showing travel routes, and information on available incentives and discounts.



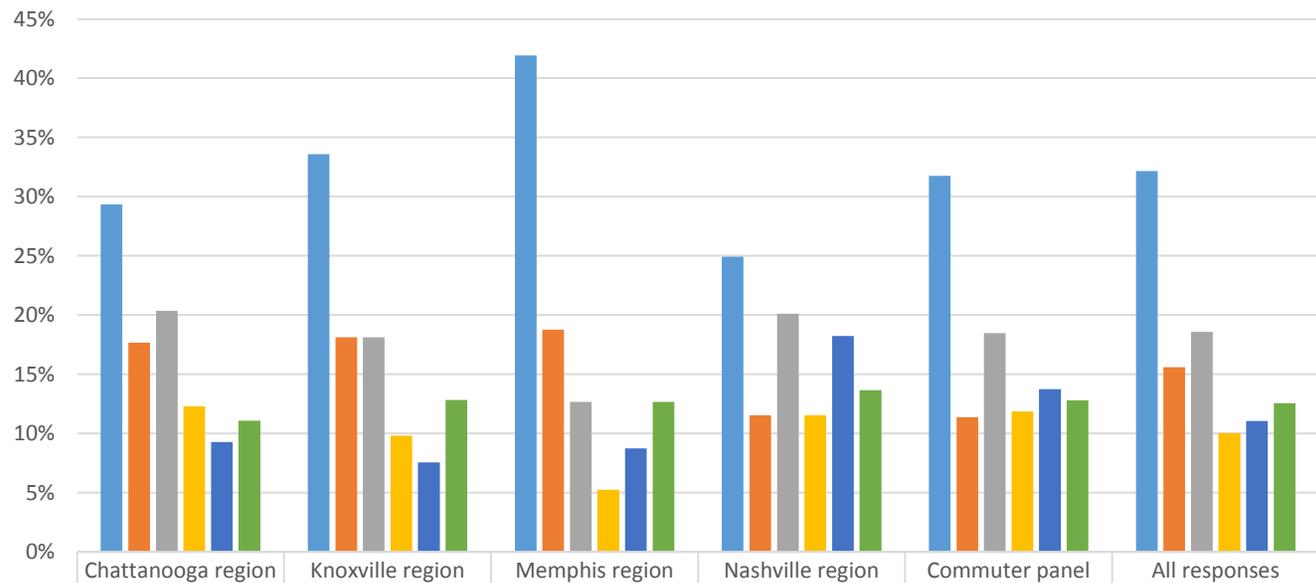
Commuter panel: If you were to use an online tool or mobile application, what features would you like the tool to have?



Online app for finding carpool partners

Respondents were provided with a description of a mobile app similar to a real-time ridesharing app and asked how likely it is they would use the app. Respondents from Nashville were the most likely to express an interest in the app.

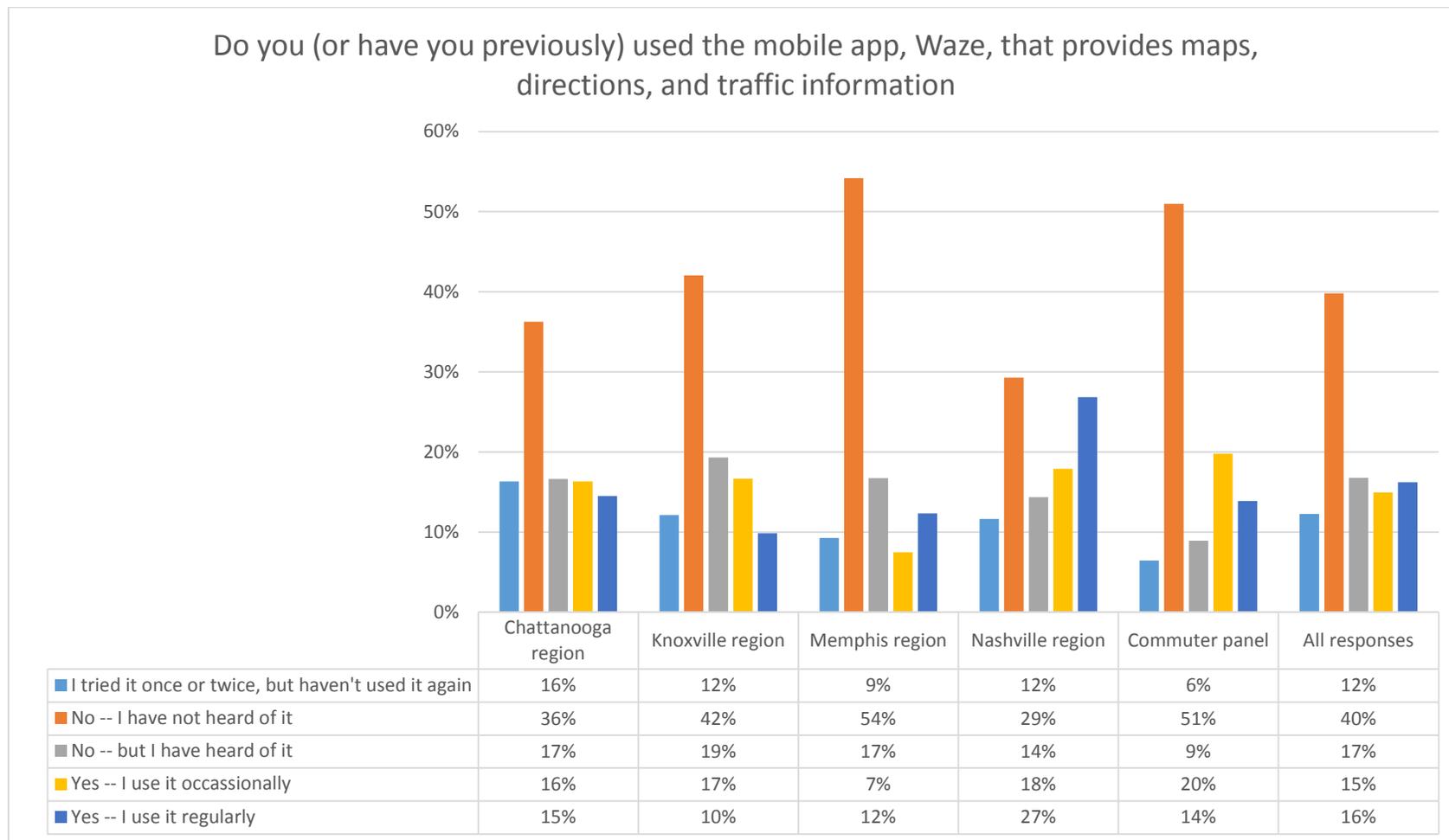
How likely is it you would use a mobile phone app that helps you find a carpool partner and automatically allows you to share the cost of driving with your carpool partner?



	Chattanooga region	Knoxville region	Memphis region	Nashville region	Commuter panel	All responses
1 = Very unlikely	29%	34%	42%	25%	32%	32%
2	18%	18%	19%	12%	11%	16%
3	20%	18%	13%	20%	18%	19%
4	12%	10%	5%	12%	12%	10%
5 = Very likely	9%	8%	9%	18%	14%	11%
Not sure, I need more information	11%	13%	13%	14%	13%	13%

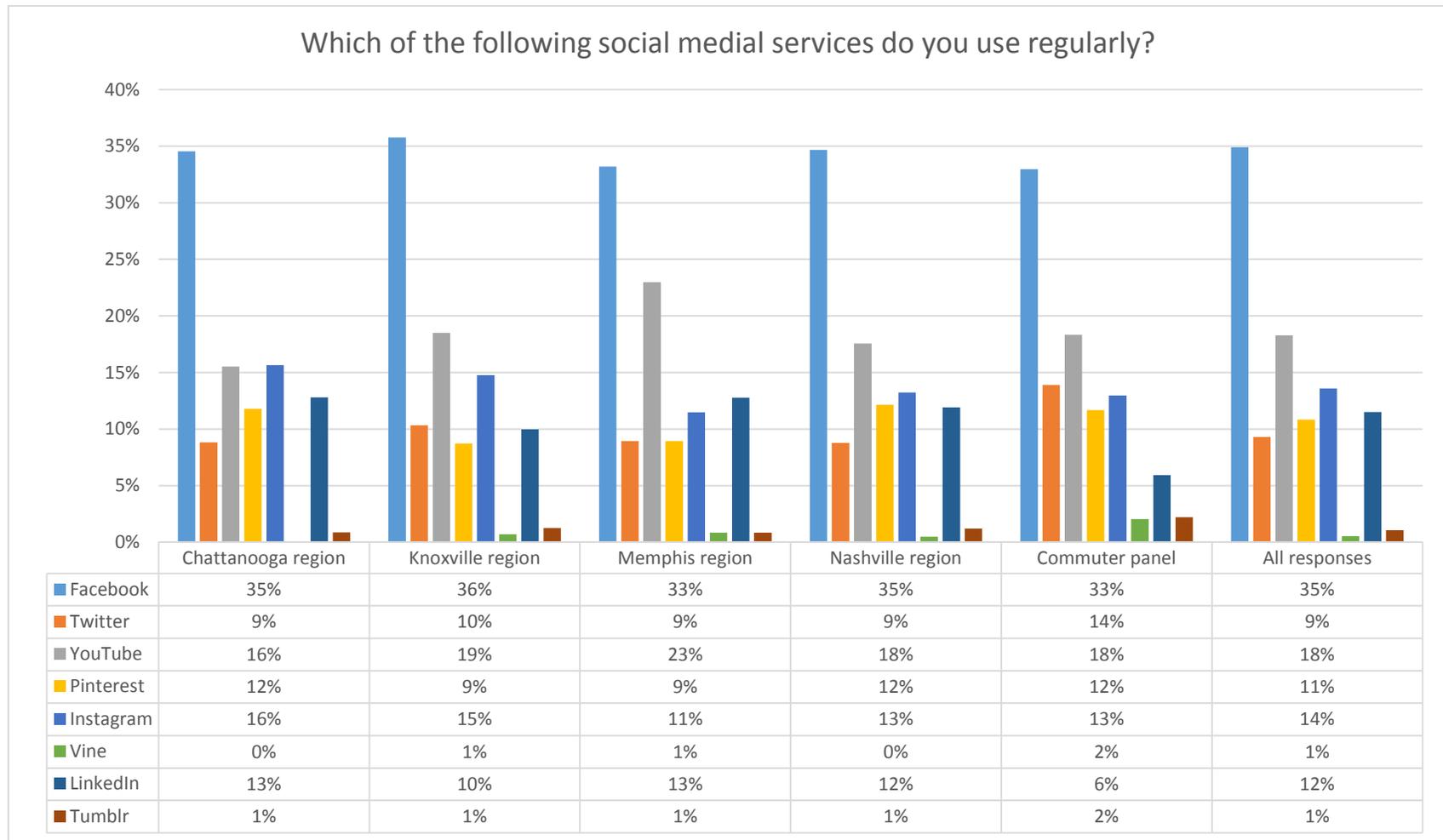
Using Waze

When asked how familiar they were with the Waze mobile app, the majority of respondents had not used it. Nashville respondents were much more likely to use Waze, either regularly or occasionally (45%).



Using social media

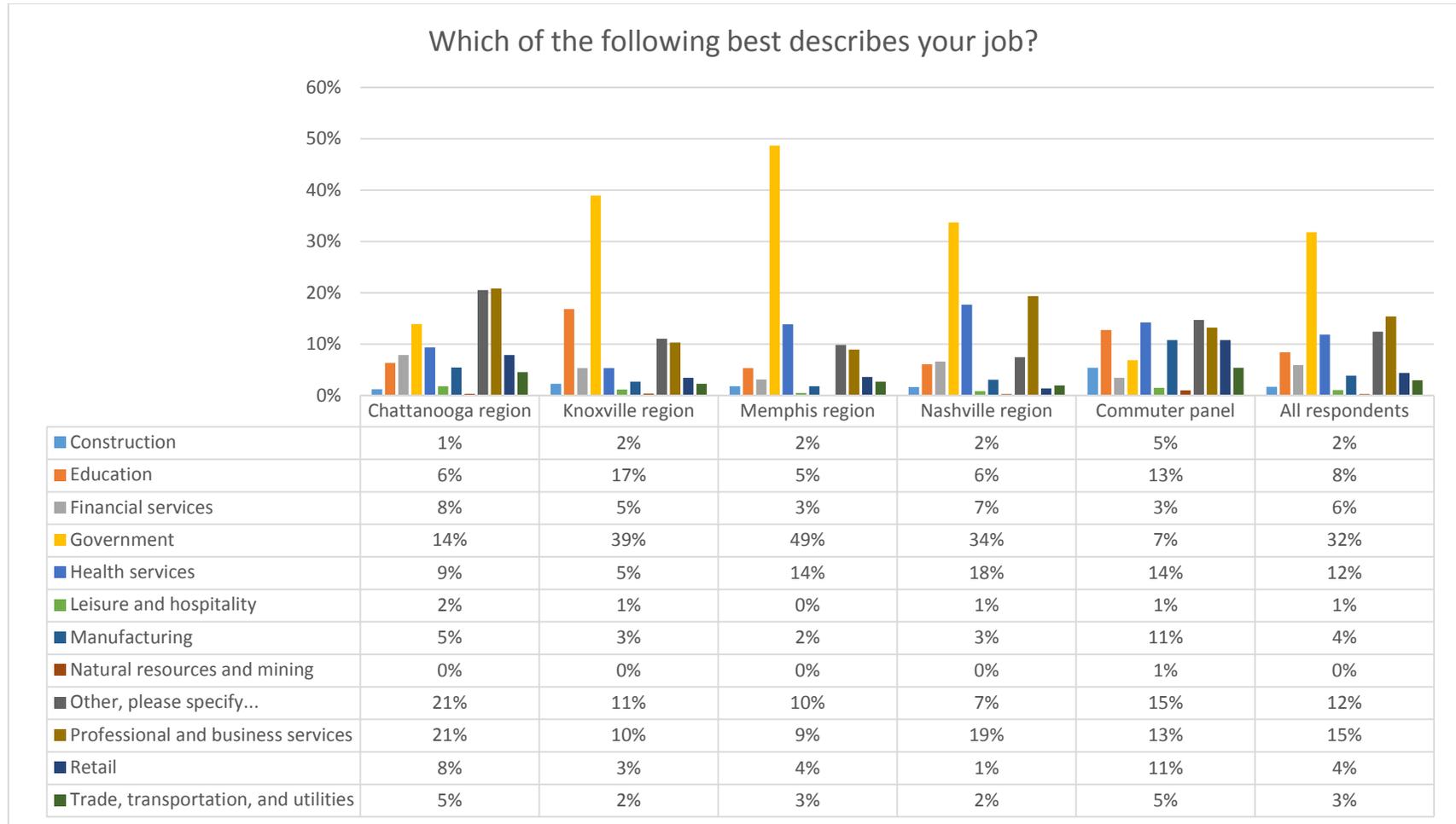
Social media can be an inexpensive way to share transportation information and motivate travel behavior change. Respondents were asked which social media services they use. Facebook was the most commonly used social media service followed by YouTube.



3.7 Demographics

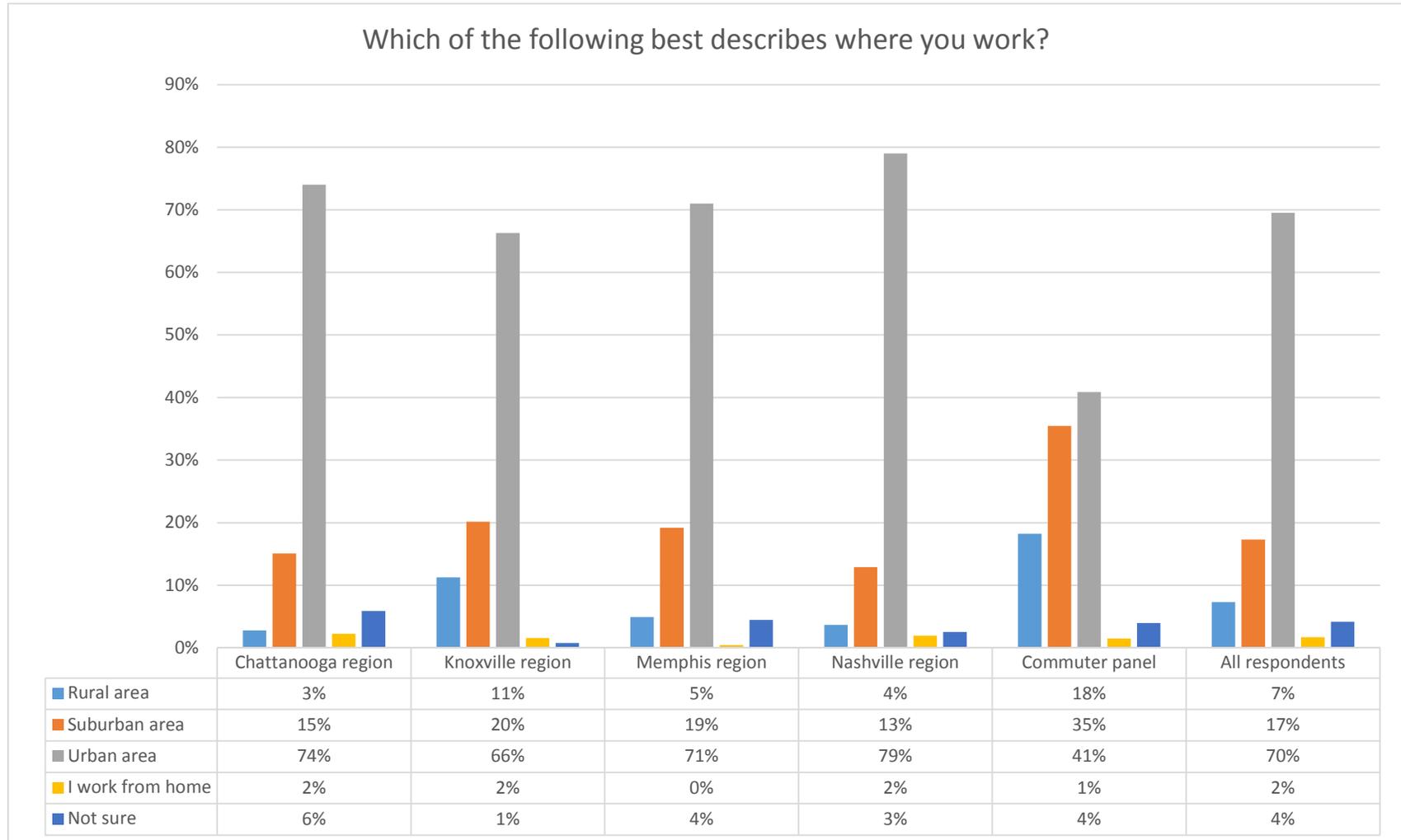
Employment Industry

Respondents were provided with a list of employment industries and asked to select the one that best describes their job. Responses appear to be biased toward government workers; however, this bias is not seen within the commuter panel.



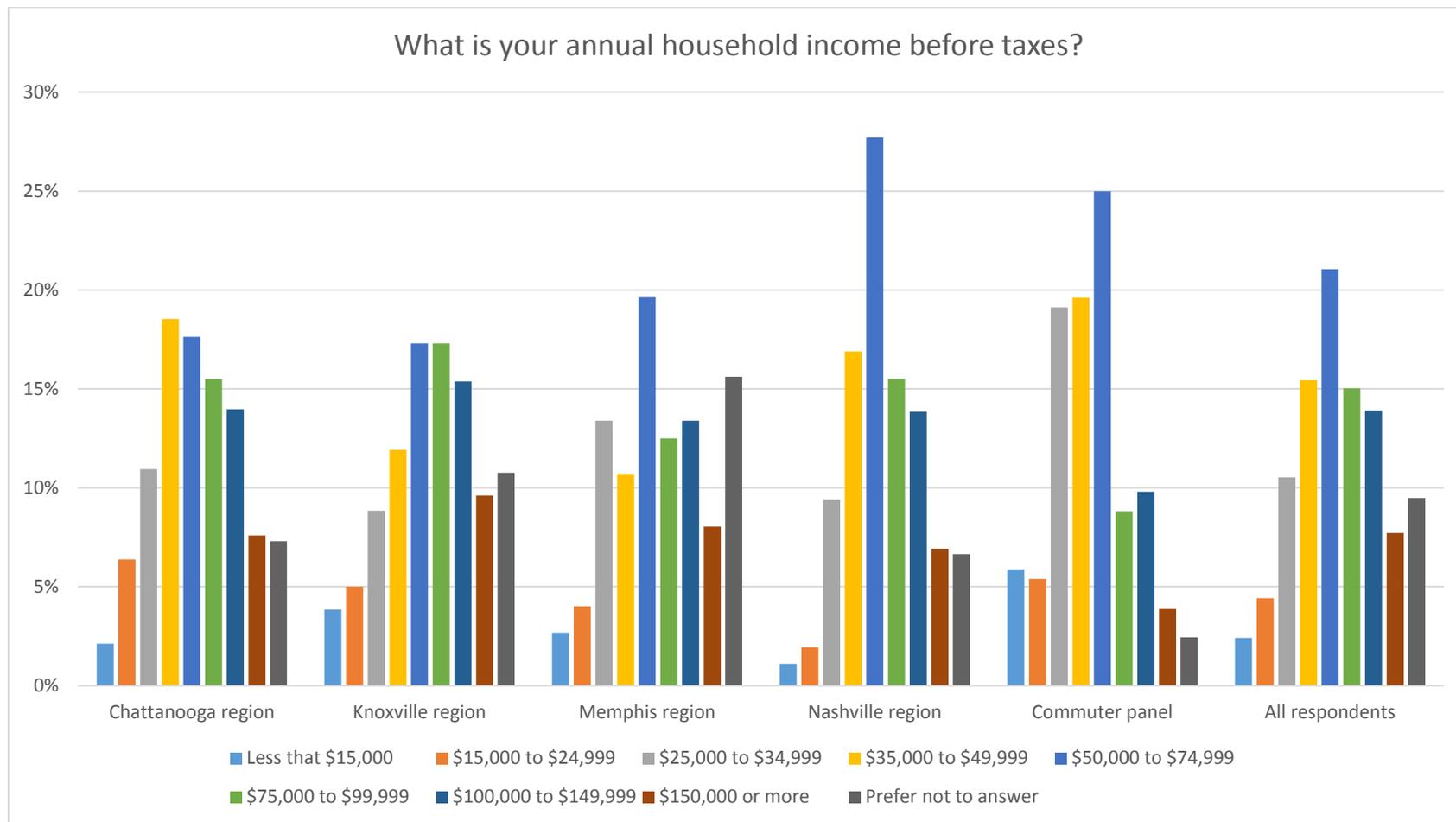
Work location

Respondents were asked whether they work in a rural, suburban, or urban area or if they work from home.



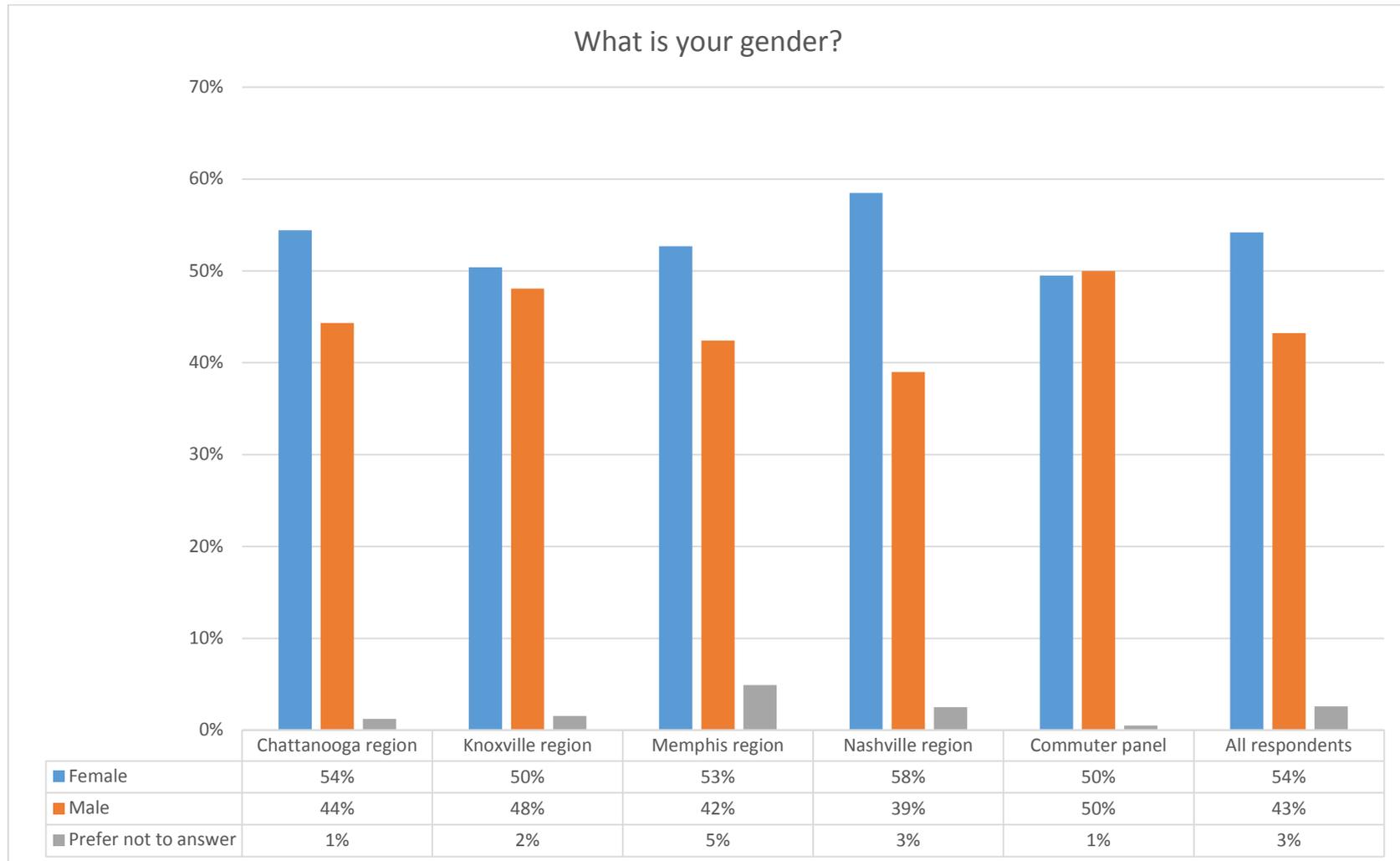
Household income

Overall, survey respondents appear to be more wealthy, on average, than the typical household in Tennessee. However, this is expected as only respondents who said they were employed were asked to complete the survey.



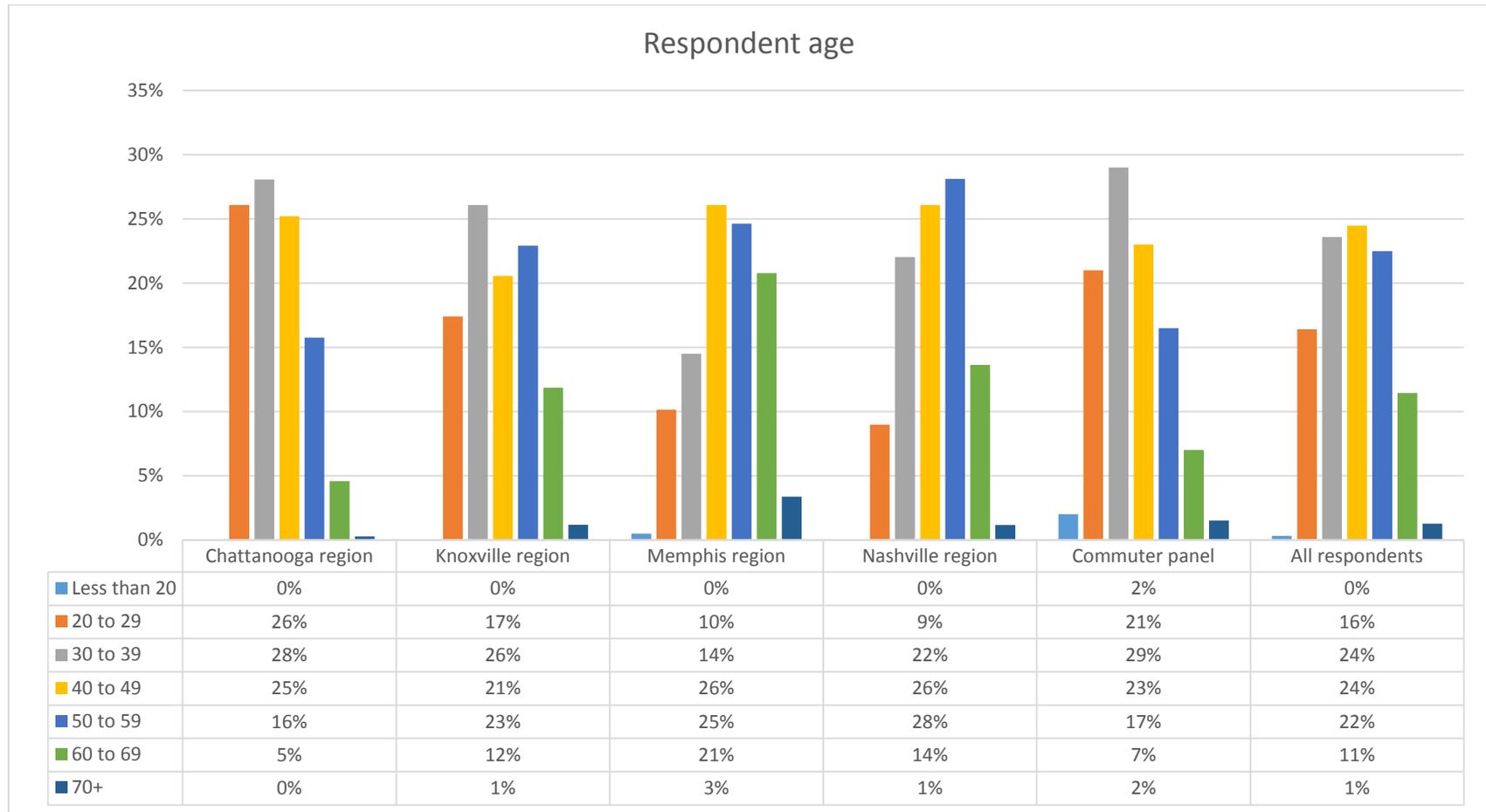
Gender

Overall, respondents were more likely to be female than male. However, this variation was not seen in the commuter panel.



Age

The following figure shows the age ranges of individuals who responded to the survey. Young and older individuals are mostly absent from the group as only individuals who are currently employed were asked to complete the survey.



Appendix A: "Other" Responses

In the past, what travel mode did you use to commute to work? (Check all that apply.) [Other, please specify...] [text]
Commuter and Heavy rail in DC Metro Area
Took a taxi
TRAIN

Why did you stop taking transit to work? [Other, please specify...] [text]
Brentwood stopped funding the 91X stop at Concord Road
Brentwood stopped funding the 91X stop at Concord Road
Bus became unreliable, stalled on the regular, late picking up passengers. Getting home at ridiculous times.
buses did not run frequently enough in the afternoon nor did they keep to the schedule
employer issued vehicle
I changed jobs and needed a car for the new position
I lived in Washington DC and there were good transit options
I still ride the bus sometimes
I was provided a company car
Moved to Nashville, where the current transit system is poor
My bus was discontinued much to my chagrin
My ride buddy retired
new york city public transportation
Not convenient
The amount of time on the bus was greater than my commute.
The KAT Bus route was cancelled
The RTA route was ended that serviced Brentwood TN 91x
The transit authority cancelled the route
Transit schedule did not fit the times I needed to travel

We stopped having a bus available for Y-12
Williamson County moved the bus stop south and I can get to work quicker than backtracking to go to the bus stop
WORKING HRS. LAST BUS LEAVES AT 4:40 NEED TO BE IN OFFICE UNTIL 5

Why did you stop carpooling to work? [Other, please specify...] [text]
Attend Classes after work.
bought another car, finally!
Carpool partner got different job.
I changed job location to another site.
I had license reinstated
I now live 60 miles from work
My chief will not approve a change in my work schedule to carpool--sad but true.
People I carpooled with retired.
The person that rode with me got their own car
work schedules do not match most days - still carpool at times

Why did you stop vanpooling to work? [Other, please specify...] [text]
Changed job location
Drive 60 miles to catch vanpool at commuter lot
My vanpool driver consistently drove under the speed limit and didn't know how to navigate through traffic. I could get to work much faster if I drove myself.
vanpool driver retired

Why did you stop walking or biking to work? [Other, please specify...] [text]
employer issued vehicle
I still ride my bike to work sometimes, but have been driving more this year.
Still walk a small portion once I get to work. Not able to park near my building.
Time constraints
Transit

Weather

When deciding how to commute to work, which of the following are important to you? (Select up to 3.) [Other, please specify...] [text]
Whether or not my spouse has to work
ability to carry supplies to work with
Ability to leave work for appointments during the day
accessibility
Additional rest opportunity since multiple people are in the vanpool and drivers alternate
Anyway to get to work on time
arrive at different times when needed
Avoiding rush hour traffic which decreases stress and less wrecks
Avoiding the parking problems downtown
Avoiding waste driving alone
Being able to change my schedule as needed
child drop off at school before work and pickup after school
Companionship!
conscious of meetings throughout rest of the day that will require travel to and from office
Dependability and regularly available (if using the bus for instance) and convenience
driving my own car is the only option i have for getting to work
Encountering less traffic
Encouraging a bike-friendly community of drivers
Experience the city at a reasonable pace.
Finding transportation for disabled carpool rider
flexibility in scheduling
flexibility, safety
Flexible schedule
Getting there safely
Getting to work safely in this mess of Memphis Traffic/Drivers
Having ability to travel to other destinations multiple times during the day.

how bad will traffic be
How far I have to go that day
How much my job requires me to carry. If I have a lot in tow, I can't bike or walk.
Husband and I work same place
husband wife - work at same place
I am visually impaired and don't drive so have to utilize public transportation
I do not like driving in rush hour.
I don't drive myself so van pool is very much a blessing to me.
I enjoy riding my bike
I have a second job three days a week that I must go to straight from work
I have no choice but driving. There is not public transit available to my workplace.
I have no other options but to drive myself or have wife drop me off but I have a car why no
I must be on duty by 0700. arrival time is paramount all other considerations are moot
I road TMA van for a long time. Almost every driver drives too fast and hyperanxious.
I take my 75 pound geriatric dog with me to work everyday. If I didn't I would bike everyday.
If I drive, I have to pay to park downtown.
if I have to take/pick up kids
In case of emergency....87 miles travel each way when working
Job Requirements
LESS STRESS
less stress
less traffic
LESS TRAFFIC DUE TO LARGE NUMBER OF ROAD PROJECTS GOING ON EVERYWHERE
like to help out coworkers that are having car issues
Make it there in a timely manner
Minimal traffic!!!!
My only other option is to walk. Don't like to sweat in my work clothes.
My wife and I only have one car, so my decision is sometime based on her need for the car
My work requires the ability to haul photo booths

N/ A
Need auto for work meetings
Need car to visit clients
Need to carpool children to school
No choice but to ride the bus
No one lives near me who is going my way. I have no choice but to drive alone.
no other options available
No other options found
No transit, dangerous to ride hike or walk force me to drive
Non-stressful commute
Not using my own car
nothing special
Other Drivers knowing rules of the Road, etc. Signaling changing lanes or turning in advance.
Out of traffic
Perhaps this goes with quality of life, the commuting via van pool is much less stressful and less exhausting than driving my own vehicle.
Personal Safety
personal safety
Personal Safety
remaining a one-car household
Rest
REST
Safer being with others on the road
Safer to be with other people on the road
safety
safety, less pot holes and alternate routes if train is approaching.

Safety. This is my primary reason for not cycling to work.
saving gas
There are no options except driving where I live. I live in Sevier county and work in Knox County
Traffic load
Traffic! More than saving time, I hate sitting in traffic.
Trolley Schedule
weather
weather conditions
Weather outlook

To your knowledge, which of the following programs does your employer offer at your worksite?
\$60 a month towards commuting costs (parking, transit, etc.)
\$60 per month for parking
60.00 a month for parking
Ability to work from home
Agency covers transit or parking up to a limit; typically doesn't cover all
am subject to change duty stations during the day and cannot carpool
auto allowance
Bike commuting payment in place of parking pass
City bikes discount price bike rack in front of workplace
Covers Roughly Half of Parking Cost
Discounted Bike Memberships
Electric Vehicle charging
Employer is member of Knox Smarttrips
Employer would say parking and help finding partners but not a benefit they provide.
Federal subsidy
for cycling, acknowledgement of wellness benefits
Free Bike Share Passes
free bus transportation

free parking is extremely limited, otherwise, you pay to park
free shuttle bus from downtown to work site
idk
money towards van pool
My employer charges an unreasonable fee for oversold parking passes.
N/ A
N/A
N/A
no programs that I am aware of. Plus very high parking rates.
none

None of the Above
None of the above, I live in a rural area. No bus in my area.
none of these
None, the VA in Murfreesboro talks the talk, but does not walk the walk. Superior sf (some) are in charge of your schedule and make it difficult for employees to participate in this great program. I have tried unsuccessfully twice to get a change.
not ava
Nothing
Nothing, Vanderbilt University's Development and Alumni Relations does nothing to help reduce traffic congestion during rush hour. In fact, they recently adopted policies that are counter to overall mass transit utilization.
Notification of opportunities to participate in various types of programs
Office vehicles to use for meetings
Once at work we have work vehicles to use to drive around the city if we need so we don't have to spend our own gas money.
Parking, bike riding, or transit reimbursement
partial reimbursement for parking
Pay for mileage
prizes
public transportation subsidy program
Reimbursed monthly parking
reimbursed van fees
Reimbursement for money paid to authorized transit companies
Reimbursement for parking garage use, metered parking, and public transit
reimbursement for transit
reimbursement for van cost
reimbursement from federal government
rent a bicycle program for an hour time length.

Self employed and We have none of these
SmartTrips and money incentives (in the form of monthly gift card) for each commute completed by alternative transportation.
SmartTrips provides some of the options listed, not necessarily employer provided.
There is a Ride Share Van available for use
UT has almost no effective TDM approaches. We do have a pre-tax transit (and parking) benefit, but the paperwork is too much of a pain
UT/ORNL Shuttle
We get "alternate transportation credit" every paycheck. This is for paying for parking, or pocketing it as incentive to not drive.
Work from home
Work from Home once a week.
you've got to be kidding!!!!

Why did you stop walking or biking to work? [Other, please specify...] [text]
employer issued vehicle
I still ride my bike to work sometimes, but have been driving more this year.
Still walk a small portion once I get to work. Not able to park near my building.
Time constraints
Transit
Weather

Appendix B: Survey Instrument

1. Are you currently employed?

- Yes
- No → End survey

2. In a typical week, how did you travel to work? If you use more than one travel mode (e.g., walking to the bus stop and then taking the bus), report the travel mode you use for the longest distance of your trip.

	Do not work	Drive alone	Bus	Rail	Carpool	Vanpool	Walk	Bike	Uber/Lyft	Work from home	Other
Mon*											
Tues											
Wed											
Thur											
Fri											
Sat											
Sun											

*Note: days will be spelled out in the online survey.

3. [IF DROVE ALONE IS ONLY MODE] In the past, did you **regularly** commute to work using a travel mode other than driving alone, for example riding the bus, biking, walking, or carpooling?

- Yes
- No → Skip to 6

4. In the past, what travel mode did you use to commute to work? (Check all that apply)

- Transit (bus, rail)
- Carpooled
- Vanpooled
- Walked
- Biked
- Worked from home
- Other _____

5. Why did you stop INSERT SELECTED MODE to work? (elements of this question will change depending on the mode(s) selected)

- I changed jobs
- My work hours changed
- I moved
- I bought a car
- I lost my carpool partner
- I decided driving alone was more convenient
- I had a bad experience [on the bus] [biking] [walking]
- I feel safer driving alone
- My family life changed and required me to drive
- I need my car for work
- Transit fares increased
- Cheaper gas prices made it more affordable to drive
- I was injured/disabled and now need to drive
- Not sure
- Other _____

6. When you commute to work by _____, on average, how many minutes does it take you to get from your home to work? _____ [Question will be dynamic and ask about each reported commuter mode]

7. About how many miles do you travel from home to work (one way)? _____

8. What time do you typically **arrive** at work?

- Before 6:00 a.m.
- 6:00 a.m. to 6:59 a.m.
- 7:00 a.m. to 7:59 a.m.
- 8:00 a.m. to 8:59 a.m.
- 9:00 a.m. to 9:59 a.m.
- 10:00 a.m. or later

9. What time do you typically **leave** work?

- Before 3:00 p.m.
- 3:00 p.m. to 3:59 p.m.
- 4:00 p.m. to 4:59 p.m.
- 5:00 p.m. to 5:59 p.m.
- 6:00 p.m. to 6:59 p.m.
- 7:00 p.m. or later

10. When deciding how to commute to and from work, which of the following are important to you? (Select up to three options) [Answer options will be randomized]

- Protecting the environment
- Being able to make stops on my way to or from work (errands, daycare, etc.)
- Saving time
- Saving money
- Convenience
- Getting exercise
- Being able to multi-task (email, read, make phone calls, etc.)
- Having a good quality of life
- Other _____

11. Below is a list of programs and incentives that help reduce the need to drive alone to work. Using the provided scale, how likely is it that these programs and incentives would cause you to drive alone less than you do now?

	1 = Not likely to drive less	2	3	4	5 = Very likely to drive less
Discounts on transit passes					
Assistance finding a carpool partner					
Assistance finding a vanpool (vanpools are groups of 7 to 15 people who commute together in a van)					
A small cash payment every day you do not drive to work					
A chance to win in a prize raffle every day you don't drive to work					
Ability to buy a bus pass at work					
Ability to slightly modify your work schedule so that it matches a transit schedule					
Special parking if you carpool to work that is closer to entrances or protected from the sun					
A free ride home if you don't drive to work but need to leave for an emergency or sickness or have to work unscheduled over time					
Help finding a safe walking/bike route to work					
Training classes where you learn bicycle riding skills and/or how to maintain and repair a bicycle					

12. To your knowledge, which of the following programs does your employer offer at your worksite?

- On site lunch/food options
- On site banking, child care, dry cleaning or other similar services
- Free transit passes
- Discounted transit passes
- Preferred parking for carpools and/or vanpools (spaces that are covered, closer to building entrances, or otherwise desirable)
- Ability to adjust the time when you arrive at or leave work by at least 15 minutes
- Help finding carpool partners
- Help finding vanpool partners
- Free parking
- Secure bicycle parking (bike lockers, bike room, etc.)
- Showers
- Changing areas
- A cash payment if you give up your parking space
- A free ride home if you don't drive to work but need to leave for an emergency
- Other _____

13. Do you work in any of the following metropolitan areas?

- Chattanooga region
- Clarksville region
- Knoxville region
- Memphis region
- Nashville region
- None of these areas → Skip to 15

14. Using the scale below, how familiar are you with the _____ program? It helps employees find ways to get to work other than driving.

- 1 = Not at all familiar
- 2
- 3
- 4
- 5 = Very familiar

15. If you needed help figuring out your transportation options to work, which of the following options is most appealing to you?

- An online tool or mobile app where you enter your home and work locations and receive a list of travel options that may include driving alone, carpooling, riding the bus/rail, walking, and biking.
- One on one help from a person who would tell you about your travel options including driving alone, carpooling, riding the bus, walking, and biking.
- Other _____

16. If you were to use an online tool or mobile app to learn about your commute options, which feature(s) would you like the tool to have?

- Cost estimates for each travel option available to me
- Travel time estimates for each travel option available to me
- Information on the environmental impacts of different trip options
- Maps showing travel routes
- Information on the cost of riding the bus
- Information on bike safety
- A list of travel incentives and discounts I may be eligible to receive
- Other _____
- I would not use an online tool

17. How likely is it you would use a mobile phone app that helps you find a carpool partner and automatically allows you to share the cost of driving with your carpool partner?

- 1 = Very unlikely
- 2
- 3
- 4
- 5 = Very likely
- Not sure, I need more information

18. If you were allowed to work from home, how many days per week do you think you would?

- I can already work from home
- Never – My job duties wouldn't allow me to work from home
- Never – Working from home does not appeal to me
- Infrequently
- 1 day a week
- 2 days a week
- 3 days a week
- 4 days a week
- 5 or more days a week

19. Thinking about your commute, have you ever done any of the following?

- Looked online for a carpool partner
- Looked online for a vanpool
- Asked my employer for help
- Searched online for bus options
- Called my local transit provider for information
- Asked my employer to provide discounted transit passes
- Asked my employer to let me work from home
- Researched bike route options online
- Other _____

- None of these

19A. Have you ever used Uber or Lyft for any of the following purposes?

- To get to or from work
- To get to or from a bus stop
- To get to or from a train station

20. Thinking about all of your travel (commute, errands, social, etc.) what do you think about the following transportation modes?

	1 = I'd only use it as a last resort	2	3	4	5	6	7 = I love traveling this way
Driving alone							
Walking							
Biking							
Carpooling							
Riding the bus							
Riding a train							

21. Which of the following social media services do you use regularly?

- Facebook
- Twitter
- YouTube
- Pinterest
- Instagram
- Vine
- LinkedIn
- Tumblr

22. What is your home zip code? _____

23. What is your work zip code? _____

24. Which of the following best describes your job? If you have more than one job please tell us about the one where you work the most hours.

- Construction
- Education
- Financial services
- Government
- Health services
- Leisure and hospitality
- Manufacturing
- Natural resources and mining
- Professional and business services
- Retail

- Trade, transportation and utilities
- Other _____

25. Which of the following best describes where you work?

- Urban area
- Suburban area
- Rural area
- I work from home
- Not sure

26. What is your annual household income before taxes?

- Less than \$15,000
- \$15,000 to \$24,999
- \$25,000 to \$34,999
- \$35,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 or more
- Prefer not to answer

27. What is your gender?

- Female
- Male

28. In what year were you born? _____

29. Contact information for anyone completing the survey who is not part of the online panel. That will allow us to offer an incentive.