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A Report on El Paso Resident Behaviors and Attitudes Toward Active Travel

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**Center for International
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in cooperation with:

**El Paso Metropolitan
Planning Organization**

PROJECT TITLE:

**Visualizing the El Paso
Multimodal Travel Behavior
Analysis: From Theory to
the Field**

AUTHORS:

Ipek N. Sener, Ph.D.

Assistant Research Scientist
Texas A&M Transportation
Institute

Chris Pourteau

Senior Research Editor
Texas A&M Transportation
Institute



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Executive Summary

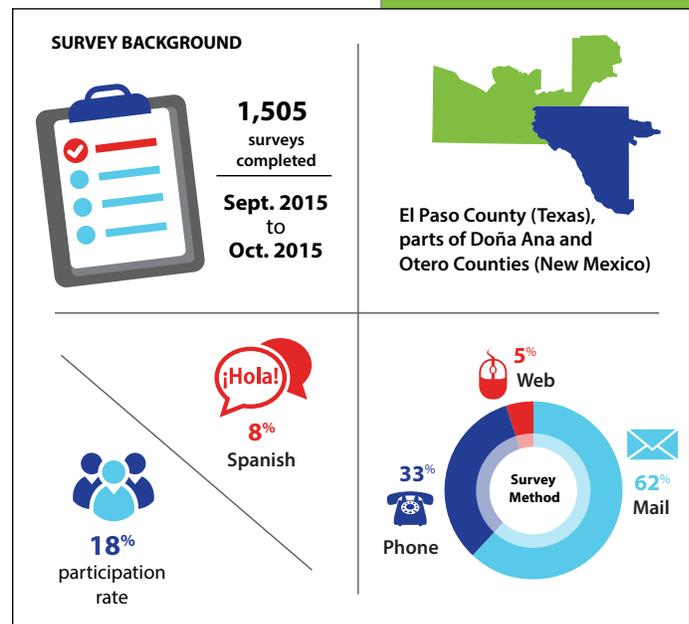
Project Background

Policy makers are placing an increased emphasis on reducing automobile dependency (and problems associated with it, like congestion and increased air pollution). To increase mobility options, we need strategies to develop multimodal transportation systems that offer alternatives to single-driver/single-vehicle dependence. The El Paso Metropolitan Planning Organization (MPO) engaged the Texas A&M Transportation Institute (TTI) to develop methodologies, data, analysis, and tools for integration into a regional multimodal transportation plan. TTI researchers developed a survey of the El Paso region to better understand residents' behaviors and motivators for choosing their favored modes of transportation, especially alternative modes.

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Specifically, TTI looked at the regional transportation infrastructure, as well as the travel patterns and preferences of El Paso residents. This report presents residents' assumptions, attitudes, and interests regarding their travel modes, particularly focusing on active travel like walking and biking. Do demographics play a role in a person's attitude toward active travel? How important is the condition of the local infrastructure (e.g., sidewalks) when El Paso residents choose whether or not to walk? Is connectivity across neighborhoods (e.g., bike lanes continuing across traditional neighborhood boundaries) important to influencing crosstown cycling? How does a person's self-perception (e.g., happiness, physical fitness) impact his or her travel mode of choice? Are active travel choices practical for a person who lives on one side of the city but works on the other? These are the kinds of questions examined in this study.

The study area included all of El Paso County, Texas, and parts of Doña Ana and Otero Counties, New Mexico.



Pedestrians tend to be younger and have lower household incomes, while bicyclists are associated with being male, younger, and having a higher income.



Researchers used an address-based sample to get a representative sample of individuals age 18+ in survey area. The survey instrument was designed for simultaneous administration via phone, mail, and web formats. The average telephone interview lasted no longer than 20 minutes.

The survey questionnaire focused on eight core areas:

- Residence/neighborhood.
- Work/school.
- Lifestyle.
- Biking habits.
- Walking habits.
- Public transportation habits.
- Well-being.
- Demographics.

A total of 1,505 surveys were completed, with the majority coming via mail (62 percent), followed by phone (33 percent) and web (5 percent). The overall participation rate was approximately 18 percent. Approximately 8 percent of all surveys were completed in Spanish, with the remainder completed in English. (The appendix to this report looks at TTI's survey methodology and the specific descriptive survey results documented.)

Researchers performed bivariate descriptive analyses to better understand travel mode characteristics of survey respondents for both work (commute) and non-work travel. Mode split patterns were examined by demographic characteristic, attitudes, and well-being. The TTI team also explored residents' attitudes toward active travel and determined specific residents' perceived deterrents and incentives regarding active modes. Participant responses were aggregated by home zip code and mapped to identify differences in the spatial patterns of active travel in the region. Several multivariate models were also developed to better understand active travel behavior and preferences.

Understanding Pedestrians

Pedestrians tend to be younger and have lower household incomes, while bicyclists are associated with being male, younger, and having a higher income. Amenities (e.g., green spaces, rest areas, and playgrounds) and aesthetics—as well as a safe walking environment, whether that be safety from local crime or traffic—are primary motivators for pedestrians. A lack of nearby attractive destinations and sidewalks, as well as the threat of inclement weather, proved to be strong deterrents.

Connecting Walking and Transit

When feasible, constructing a local transportation system that emphasizes the best of all modes creates choice and flexibility for residents. It's worth noting that residents who rely regularly on walking also ride transit. Why? Because transit trips often include walking segments at the beginning and end of each ride to reach destinations. Thus, by incentivizing transit use, policy makers and planners can improve walking rates (achieving a sum greater than the whole of the parts for promoting each mode).

Understanding Bicyclists

Researchers found a significantly high level of willingness to bike on bicycle lanes or off-roads paths across the region, though cycling rates were low (indicating the importance of latent demand for bicycling). For non-cyclists, connected bicycle lanes, amenities, and aesthetics were the primary motivators to begin cycling, while the inability to carry items (e.g., groceries) presented a significant deterrent. However, these factors were not significant for existing cyclists, who were primarily concerned with route distance and safety in traffic.

Researchers recommend that the MPO target both groups to improve cycling rates in the region by encouraging interventions that diminish adoption barriers, such as promoting bike-friendly neighborhoods, bicycle boulevards, and bicycle facilities (e.g., secure bike racks) at work and other destinations. Education and training programs targeting willing non-cyclists can also increase confidence in biking as a viable alternative travel mode in El Paso by helping willing residents overcome beginner fears. Since cyclists who already cycle recreationally showed they'd be more likely to cycle to work, etc., the MPO should consider promoting recreational cycling to enhance the popularity of this lifestyle choice as it more generally tries to increase cycling across the region.

Personal Experiences Shape Attitudes

Given that almost one-fifth of workers live just within four miles of their respective workplaces, great potential exists for improving rates of active travel in El Paso. Financial incentives, educational programs, and improved workplace amenities for walking and cycling would all help encourage active travel among workers. But it's not just about building more sidewalks or bike lanes—how residents perceive their neighborhoods, their personal health, and their limitations (e.g., physical barriers for the elderly) are just as important.

Safety

Earlier studies reported mixed findings on the influence of perceived traffic safety and crime on active transportation rates. In El Paso, safety—both related to street crime and traffic safety—is a significant concern for cyclists and frequent non-work pedestrians. Coordinating efforts to reduce crime in neighborhoods (as well as increase traffic safety) can build public confidence in both walking and cycling as viable, safe alternatives to driving.

Life Satisfaction

Ironically, active travelers—those who walk and cycle the most—reported lower levels of happiness, especially those residents over 50 (biking) and 60 (walking). Decision-makers should keep this in mind as they craft policy. It's likely that the physical limitations associated with more active travel modes make walking and biking less feasible for older travelers. More accessible travel alternatives, like transit or paratransit, should be considered in any regional plan aimed at promoting alternative modes to older residents.

It's not just about building more sidewalks or bike lanes—how residents perceive their neighborhoods, their personal health, and their limitations (e.g., physical barriers for the elderly) are just as important.

How Do Residents Prefer to Travel?

>80%: Single-occupant travel for work trips

>60%: Single-occupant travel for non-work trips

Generally speaking, people's attitudes about themselves and transportation better indicated variations in travel choices than did demographics.



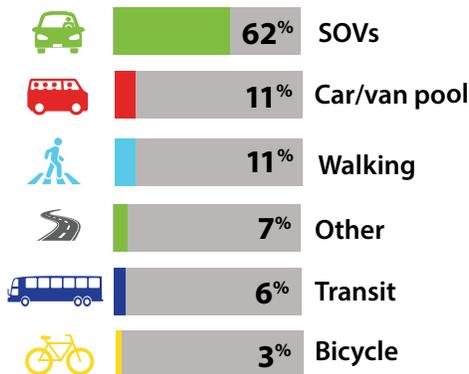
What Residents Think of Their Travel Options Today

Researchers queried residents about how they preferred to travel in the region. Specifically, they looked at the various travel modes and the characteristics of residents' travel (such as distance respondents traveled for commute and how many days per week respondents chose how they traveled). Modes specifically examined were:

- Bicycle.
- Carpool.
- Single-occupant vehicle (SOV).
- Transit.
- Walk.

Texas is a big state and Americans, by and large, value self-reliance and independence, even when it comes mobility. So it's no surprise that, overall, respondents prefer to drive their own vehicles to and from work and, for the most part, for non-work trips (e.g., shopping, leisure) as well.

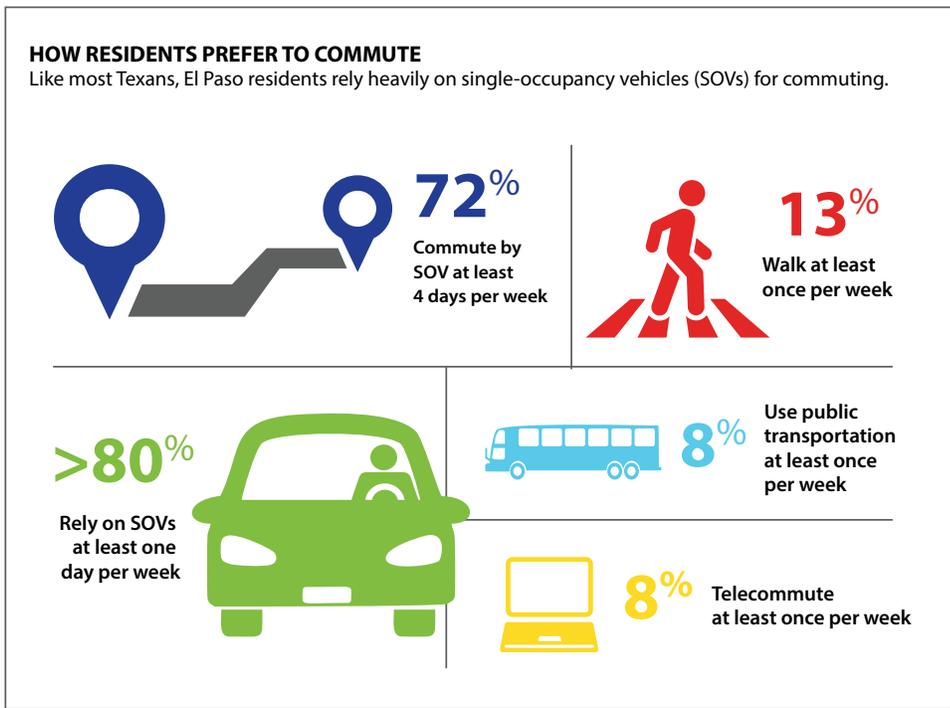
HOW RESIDENTS PREFER TO TRAVEL FOR NON-COMMUTE TRIPS



The less motorized the mode, the less distance respondents seemed to be willing to travel using it. For example, bicyclists and pedestrians tended to travel the shortest distances, though the median trip distance for commuters walking every day was 5 miles. The longer the commute, the more likely a resident chose a motorized mode such as carpooling. Commuters traveling by carpool more than 3 days a week traveled 20 miles or more.

Do Demographics Make a Difference?

Researchers segmented the respondent market by age, gender, ethnicity, household income, and attitudes about relevant topics important to the travel decision-making process. Generally speaking, people's attitudes about themselves and transportation better indicated variations in travel choices than did demographics.



Findings by Age

Researchers segmented respondents by the following age groups:

- 18–29.
- 30–39.
- 40–49.
- 50–59.
- 60–69.
- 70+

Again, the most popular travel mode was SOV for both work and non-work trips regardless of the respondent’s age. However, respondents 18 to 29 years old were most likely to choose other modes (bicycle, carpool, transit, and walking) over other age groups for work trips. For non-work trips, carpooling and transit were still popular choices for 18 to 29 year olds, but walking and biking were less so. Very few selected walking as a frequent non-work mode, and none selected cycling. Both results are lower than any other age group.

Findings by Gender

Modal choices were nearly identical between men and women, though a slightly higher percentage of women preferred walking compared to men. Researchers recommend further studying why walking is more popular with women to determine a potential marketing strategy for promoting walking to men.

Findings by Ethnicity

Researchers examined various ethnicities, but sample sizes were too low to reach conclusions for most. However, preferences of Hispanic and Caucasian respondents (sampled at a level that yields reliable results) revealed little difference related to travel modes of choice. Hispanic respondents demonstrate higher rates of walking and transit use for both work and non-work trips than their Caucasian peers.

Do Demographics Matter?

Not much. Although younger respondents favored more active travel modes for work trips, gender and ethnicity don’t play a significant role in choosing a mode. However, lower-income residents are more likely to choose options other than driving their own vehicle for both work and non-work travel.

Do Attitudes Matter?

Absolutely. How a resident perceives their neighborhood—safe or unsafe, for example—heavily influences the travel mode he or she chooses. And the importance they place on healthy lifestyles directly correlates with their likelihood of choosing active travel modes like walking and biking.

Findings by Household Income

Low-income respondents relied most often on alternative travel modes, especially walking, and least often on SOV use. Walking and transit use were more prevalent for the lowest income brackets. Bicycling for non-work trips was a consistently unpopular choice regardless of income level.

What Does This Mean?

Younger commuters are more likely to choose alternate modes, especially active modes, for work trips. To encourage residents to take advantage of transit, for example, Sun Metro might consider varying promotions/marketing strategies to target other age groups as well. Gender and ethnicity play no significant role in why residents choose a given mode. However, the lower a family's household income, the more likely they are to choose walking or buses to get where they're going.

Do Attitudes Make a Difference?

Researchers also assessed respondents' attitudes toward their neighborhood environment, personal health, and transportation and how those attitudes correlate with modal choices.

The Neighborhood Environment and Travel Mode Choice

Residents in eastern El Paso rated their neighborhoods higher in terms of adequate sidewalks or road shoulders. However, the central/university neighborhood—despite having higher frequency walkers and bikers—rated as the #6 in terms of inadequate sidewalks or shoulders.

Eastern residents were more likely to agree that “there are connected bicycle routes beyond the neighborhood.” While central residents agreed more strongly that they had shops or restaurants within walking or bicycling distance, zip code areas located in New Mexico were rated lowest for having connected bicycle routes.

Unlike with walkers, the neighborhood environment correlated more strongly with residents choosing to bike for non-work activities. Frequent bicyclists tend to live in neighborhoods they rate as attractive, having adequate sidewalks or shoulders, as well as shops or restaurants within walking/bicycling distance.

Work Trips

Respondents who walk more frequently to work were least happy with neighborhood sidewalks or roadway shoulders (i.e., they felt the pedestrian infrastructure was inadequate). This points up the idea that those who use a particular part of the transportation infrastructure—in this case, pedestrians and sidewalks—are more likely to appreciate the state of that infrastructure. As such, they provide a primary source of information for any agency looking to improve it.

Commuters who used cycling at least once a week to get to work rated their neighborhoods the least safe from crime and traffic. This could be another indicator of their being more acutely aware of traffic and crime-related issues.



Non-Work Trips

Transit users, bicyclists, and pedestrians tended to agree that more shops and restaurants existed nearby in their neighborhoods. By and large, transit users believe they have good local transit services to call on. Bicyclists were more concerned than other groups about inadequate sidewalks or road shoulders in their neighborhoods, which makes sense since they rely on properly maintained facilities for their safety.

Conclusions and Recommendations

How a person views their neighborhood—safe or unsafe, for example—influences how attractive a given travel mode appears to them. A single mother who sees crime as a problem (or perceives sidewalks as dilapidated and dangerous) will likely choose a mode other than walking or biking several blocks to reach the grocery store. Those who use a particular aspect of the transportation system—bicyclists who rely on properly maintained roadway shoulders for safe cycling or pedestrians in need of adequate sidewalks—are likely more aware of any infrastructure problems that might exist.

Being aware of these perceptions can help agencies prioritize infrastructure enhancements and shape key messaging in specific neighborhoods. It can also help agencies determine where teamwork can happen to positively influence active travel choices. For example, a neighborhood deemed unsafe might be a candidate for the police department to deploy more foot patrols, which can help residents feel safer. Coordinating such efforts with agencies responsible for maintaining the local transportation infrastructure can yield greater returns for all involved as residents, who now feel safer, choose more active travel options.

How Personal Health Influences Perception and Choice

Work Trips

Surveys show that respondents willing to walk or bike to work maintain more active, healthier lives in general. Those who frequently rely on walking to get to work are less in favor of building more highways to relieve congestion. Most respondents thought improving transit should be the focus of efforts to meet our future transportation needs. This indicates residents understand that we cannot simply add road capacity to relieve congestion; other options, like transit, need to be explored.

How a person views their neighborhood—safe or unsafe, for example—influences how attractive a given travel mode appears to them.

There was no measurable difference of well-being across modes related to work (commute) travel, but looking at non-work modes is more revealing.

Non-Work Trips

Residents who frequently bicycle indicate the highest degree of participation in other physical activities (e.g., visiting parks or following a regular exercise routine). Not surprisingly, frequent transit users expressed the opinion that “transit should be the focus for future transportation infrastructure.”

Conclusions and Recommendations

Residents care most about the travel modes important to them in other aspects of their lives. For example, respondents who emphasize healthier lifestyles—and exercise frequently in other ways—are more likely to choose active travel modes like walking or biking. Stakeholder agencies can use this fact to design active travel campaigns that appeal to personal preferences already existing in target audiences.

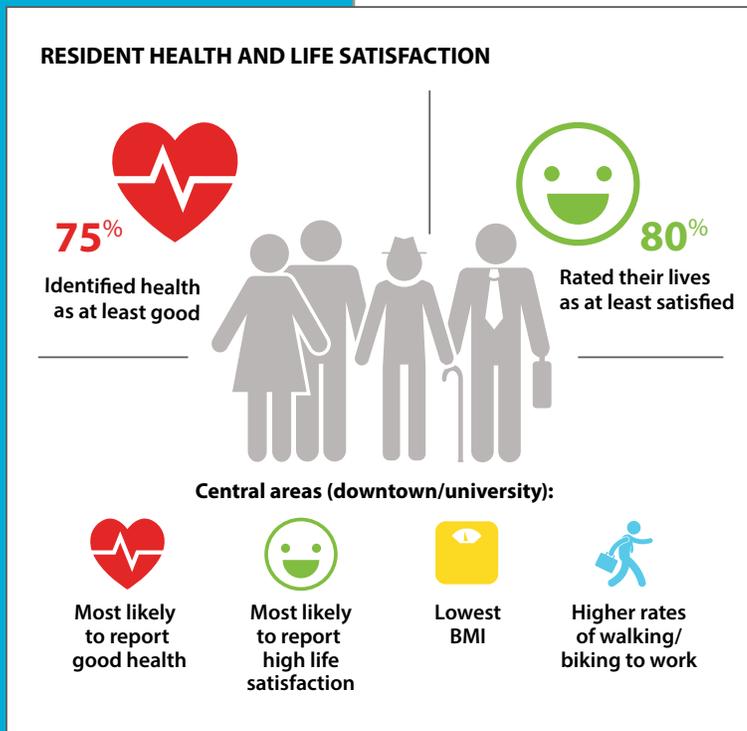
For example, a campaign might suggest one short walk twice a week as a way of getting residents already health-oriented in other areas of their lives to choose an active travel mode over SOVs. Emphasizing that exercise is both healthy and practical—and doesn’t require a gym membership—can appeal to the common sense of residents already predisposed to making healthier choices in their everyday lives.

Understanding Respondents’ Self-Perceptions about Their Well-Being

Researchers asked several questions to better understand respondents’ perceptions of their own well-being to determine if and how these perceptions might impact travel mode choice. Topics included self-reported health levels, self-reported life satisfaction, and respondents’ weight and height (used to calculate their body mass index, or BMI). There was no measurable difference of well-being across modes related to work (commute) travel, but looking at non-work modes is more revealing. For example, while non-commute bicyclists consider themselves the healthiest group, non-commute transit users had the lowest self-reported health levels. On the other hand, bicyclists were most dissatisfied with their lives overall, though they also had the highest proportion of respondents who were satisfied. These extremes likely reflect the difference between people who choose to bicycle and people who have no other

choices. Finally, vehicle drivers reported being most satisfied overall.

How these preliminary conclusions might affect strategies to promote active travel is unclear, and this suggests the need for additional research in the emerging area of health and transportation. But, for example, knowing that bicyclists are least satisfied with life can provide insight into how to create positive, motivational strategies for more widely adopting cycling as a travel mode.





What Residents Think of Active Travel

Researchers specifically surveyed respondents' attitudes toward walking and biking and assessed responses by various different characteristics such as age, gender, household income, and location within the El Paso Metropolitan Planning Organization (MPO) region. They also looked at how individual attitudes toward active travel were affected by respondents' perceptions of their neighborhood environments. Surveyors asked residents to rate their responses on a Likert scale of 1 to 5 (where 1=strongly disagree and 5=strongly agree).

Walking

Where do people walk more in the El Paso region? In terms of non-work trips, respondents situated along the U.S.-Mexico border tended to walk more. Walking to work is concentrated near downtown and the university. This finding demonstrates the connection between density and walkability: the denser the area is with more connected and nearby attractions, the more likely people are to walk.

By and large, attitudes about walking were consistent across age groups, as well as gender and ethnicity. Respondents were asked to rate five assumptions about walking:

- Walking means I don't have to worry about parking.
- Walking exposes me to air pollution more than driving.
- Walking is good for my health.
- Whenever possible, I walk instead of drive.
- Walking takes too much time.

All groups strongly agreed that walking is good for health, and most (especially the 18–29 year olds) appreciated that walking meant they wouldn't have to worry about parking. The 18–29 years olds also more strongly expressed the opinion that "walking takes too much time." Lower-income respondents more often indicated they preferred walking to driving but noted their exposure to more air pollution than when driving.

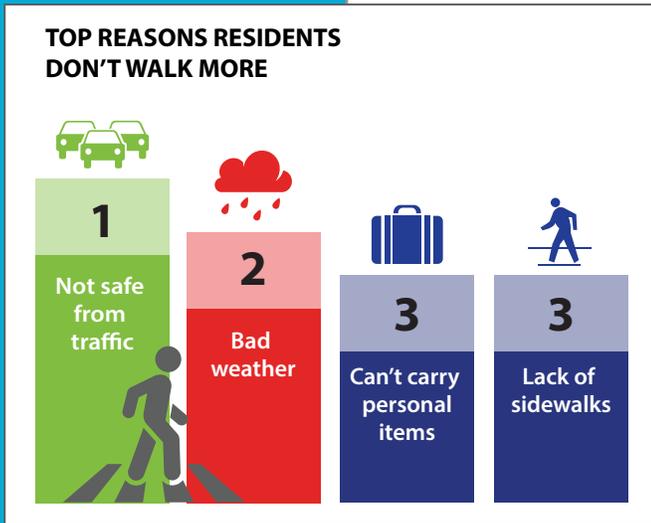
Walking: What Residents Think

It's a healthy thing. And parking isn't a problem. But time is valuable, and walking, of course, takes more time than other modes. It also exposes the walker to more air pollution. But the lower the respondent's income, the more likely they are to choose walking over driving whenever possible, despite acknowledging this health risk.

Transit use positively correlates to walking to work. Thus, strategies to increase transit use could serve the dual purpose of encouraging walking if properly framed for the public.

Life Satisfaction and Walking

Researchers found a negative relationship between life satisfaction and frequent walking. In other words, if the respondent was less happy with their life, they are more likely to walk. Though true across the board, this is notably the case for respondents 60+ years of age. One possibility for this negative correlation could relate to the increased physical demands of walking on the elderly.



Deterrents and Incentives for Walking

Traffic safety was the top concern. However, a lack of nearby attractive destinations and sidewalks, as well as the threat of inclement weather, were also strong deterrents. As the MPO is already realizing through its public meetings and this study, “lack of sidewalks” translates to “lack of connectivity.” Connecting neighborhoods to destinations beyond the neighborhoods themselves—as with the linear park recently developed paralleling Independence Drive, Yarbrough Drive to Whittier Drive in southeast El Paso—encourages residents to walk across neighborhood boundaries.

Those already walking frequently are motivated by better amenities (e.g., green spaces and playgrounds) and aesthetics along their way. For those not walking frequently now, having

more amenities and more walkable businesses were the most frequently cited incentives for adopting a more active travel lifestyle.

Bicycling: What Residents Think

It’s healthy and less stressful than driving. More affluent respondents worried more about the time it takes, as well as wrinkling or soiling nice clothes. Younger (less than 60), lower-income residents are more willing to start using it as a mode.

The key is getting residents more comfortable with biking, and the MPO can do that by encouraging recreational biking habits by better connecting bike-friendly facilities across the city.

Biking

Those already embracing bicycling as part of their lifestyle can, roughly, be characterized as:

- Asian, male, and younger.
- Having a higher income and being employed.
- Have multiple vehicles and live in neighborhoods reflecting advanced education.

Respondents who indicated a willingness to give biking a try tend to live in less-educated neighborhoods and have lower self-reported health levels.

As with walking, residents living closer to downtown tend to rely on biking more often. Bikers tend to visit parks, playgrounds, or trails more frequently than non-bikers.

Also, similar to walking, differences in age, gender, and ethnicity mattered little to how local residents responded to questions on biking. Respondents were asked to rate seven assumptions about biking:

- Buying and maintaining bicycles are expensive.
- Bicycling is good for my health.
- Bicycling is less stressful than driving.
- Bicycling takes too much time.
- Bicycling means I don’t have to worry about parking.
- I wear nice clothes that will get wrinkled or dirtied bicycling.
- Whenever possible, I bicycle instead of drive.



The younger segment (18–29 year olds) indicated more of a willingness to bike instead of drive than did other age groups.

Again—as with walking—respondents most strongly agreed with the concepts that biking is both good for their health and meant they wouldn’t have to worry about parking as much as with driving. The younger segment (18–29 year olds) indicated more of a willingness to bike instead of drive than did other age groups. This reflects a growing trend regarding the younger generation for whom driving is less important than in past generations. When biking attitudes are assessed through the lens of household income, lower-income individuals are more likely to rely on cycling instead of driving and believe it to be a less-stressful mode than driving. Higher-income groups were more concerned about wrinkling or dirtying nice clothes.

Making Good Health a Habit

Understanding how comfortable residents are with biking now can help the MPO understand how to motivate them to more widely adopt this active travel mode. Researchers segmented respondents into five groups:

- Comfortable bicycling anywhere.
- Comfortable bicycling on a bicycle lane/ trail.
- Comfortable only on off-road bicycle paths.
- Not a bicyclist but would consider bicycling.
- Not interested in bicycling.

Of course, non-cyclists were more negative about biking in general. They were more concerned about cycling costs (like bike maintenance) and travel time. Those who already cycle to some extent proved more enthusiastic about the positive health effects of cycling and its lower stress levels compared to driving.

BICYCLING ORIENTATION



More enthusiastic cyclists believed more strongly in the **positive health effects of bicycling** and its lower levels of stress compared to driving.



Traffic safety was the most frequently cited deterrent to bicycling, except for those “comfortable bicycling anywhere.” The most comfortable cyclists selected **distance** as a deterrent slightly more frequently than safety.



The **provision of bicycle lanes** appeared to be the strongest motivator of bicycling among all groups currently cycling or interested in it.

The takeaway for the MPO is this: encouraging more residents to adopt recreational cycling by providing connections to parks, shopping, recreation facilities, etc., will, in the long run, motivate them to use this active travel mode elsewhere in their lives. Once these individuals get more fit and confident, considering cycling as a commuting option seems much more likely.

TOP REASONS RESIDENTS DON'T BIKE MORE



The #1 incentive for adopting cycling is the provision of more connected bicycle lanes. Respondents cited, albeit less strongly, more amenities, aesthetics, and businesses within cycling distance as most influential motivators.

Life Satisfaction and Biking

As with walking, bicycling also tended to associate negatively with life satisfaction. However, the age at which this inverse relationship appears for biking is 50+, 10 years younger than the same result for walking. This lends credence to the assumption that the more physical demands of the activity—in this case, the increased demands for biking versus walking—are the reason for this negative correlation.

Deterrents and Incentives for Biking

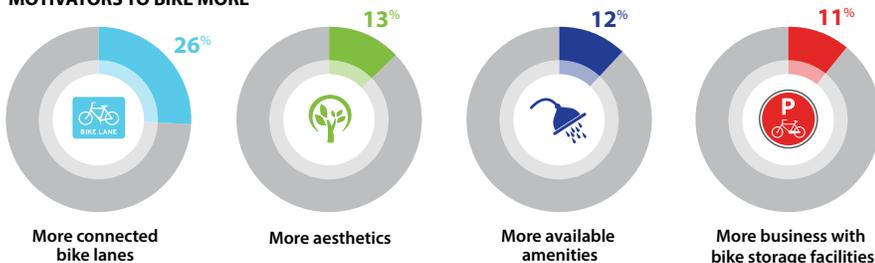
As with walking, traffic safety was the most frequently cited deterrent to bicycling, except for those “comfortable bicycling anywhere.” (Once again, this supports the theory that getting residents more comfortable with biking can encourage their adoption of it and allay their fears.) Distance seemed the biggest deterrent for the most comfortable cyclists. Otherwise, practical concerns—like not being able to carry items, inclement weather, and a lack of facilities at their destination to secure their bikes—were commonly cited deterrents across comfort level groups, including those interested in giving biking a try.

The #1 incentive for adopting cycling is the provision of more connected bicycle lanes. Respondents cited, albeit less strongly, more amenities, aesthetics, and businesses within cycling distance as most influential motivators.

One interesting finding—researchers saw across the study area a high willingness to bike, as well as a high comfort level with biking, with especially higher rates of both nearer the university. This bodes well for the MPO in encouraging the future, wider adoption of biking as an alternative travel mode.

However, the disparity between comfort level with biking and how often people actually bike points to the need for the MPO to provide an enhanced cycling environment: more bike lanes connecting neighborhoods, for example.

MOTIVATORS TO BIKE MORE



When providing more bike lanes, the MPO should consider concentrating on developing one bicycle corridor at a time rather than add piecemeal lanes across the region. By completely developing a corridor, connectivity between destinations is naturally improved, and improved connectivity between neighborhoods (and between

neighborhoods and businesses) will incentivize cyclists to more frequently use this mode.



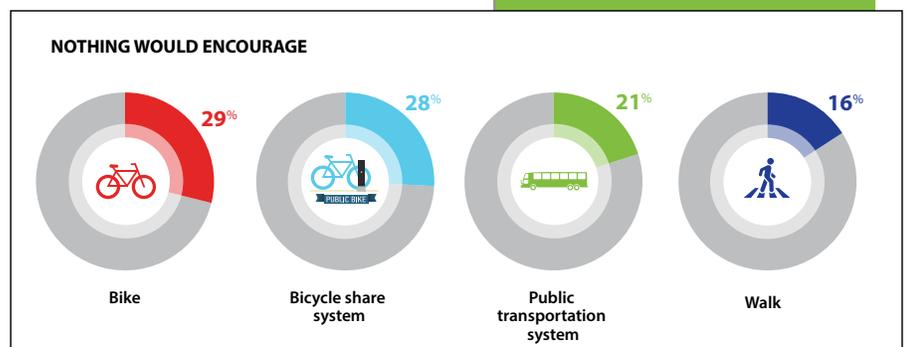
Summary of Survey Findings on Alternative Travel Modes

Travel behavior in Texas is strongly influenced by reliance on personal autos. The 2014 Texas Transportation Poll suggests that more than 9 of 10 Texans rely primarily on a personal auto as their primary means of transportation. The findings of the El Paso Multimodal Survey support this estimate. This strong reliance typically marginalizes use of alternative modes like bicycling, walking, and public transportation. While some respondents indicated that nothing would encourage them to use alternative modes of travel, a significant portion of the respondents indicated willingness to use these modes. The first step in designing effective alternative travel programs and interventions is to better understand the barriers and motivators to adopt these alternative modes.

Travel behavior in Texas is strongly influenced by reliance on personal autos, but a significant portion of respondents were interested in alternative travel modes.

Biking

Approximately 1 of 20 respondents use a bicycle at least once per week on their work or school commute, and typical bike use for non-work trips drops to approximately 3 percent of respondents. While a significant segment of the population may never be convinced to use a bicycle for either commute or non-commute trips, the data suggest that bike use might increase among the balance of the population if certain key areas are addressed.

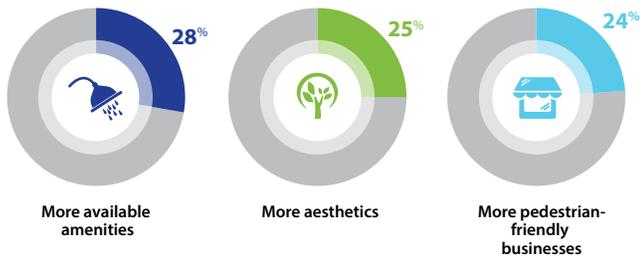


Connectivity is a key issue that should be addressed. A majority (53 percent) disagreed that “there are connected bicycle paths beyond the neighborhood,” and the need for more connected bicycle lanes was identified as the most influential motivator to bike more.

Safety is another key concern for those who might hesitate to depend more on biking as a means of transportation in the region. A significant portion of respondents stated that safer biking routes would motivate them to try alternative mode, and nearly two-thirds of respondents reported “not feeling safe from traffic” prevented them from bicycling more. Transportation policy that addresses connectivity and safety may be more effective if accompanied by outreach that reinforces the publicly held belief that “bicycling is good for health,” “bicycling means [you] don’t have to worry about parking,” and, to a lesser extent, “bicycling is less stressful than driving.”

Connectivity and safety are the key areas that should be addressed to encourage biking.

MOTIVATORS TO WALK MORE



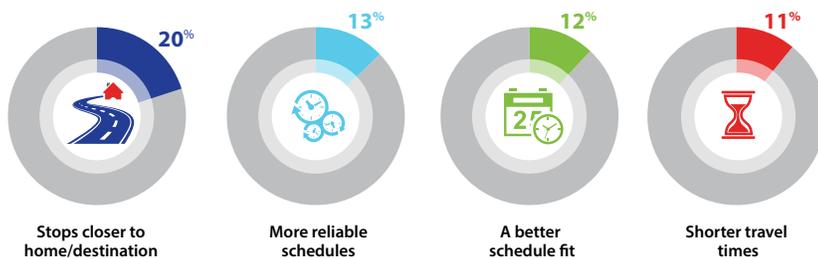
Many of the same attitudes and opinions observed for biking are also present with regard to walking.

Walking

Many of the same attitudes and opinions observed for biking are also present with regard to walking. Walking is clearly more popular than biking, with 13 percent of respondents walking at least once per week on their work or school commute, and the same proportion reporting typically walking for their non-work trips. Again, the public sees **safety** as a significant barrier to increase walking activity. Nearly three of four respondents agreed that “safer walking routes” would motivate them to consider alterna-

tive modes, and “not feeling safe from traffic” prevents a majority from walking more. The data suggest that **modification of the built environment** may increase walking in the region in a significant way. These modifications include “more available amenities”,¹ “more aesthetics”,² and “more business with walkable environments.” Similar to biking, public outreach highlighting the benefits of walking (primarily health benefits and removing the need for parking) may increase the efficacy of transportation policy changes that are made to increase walking.

MOTIVATORS TO USE PUBLIC TRANSPORTATION SERVICES MORE



The findings of the El Paso Multimodal Survey suggest that regional residents see value in regional public transportation.

Public Transportation

Eight percent reported using public transportation at least once per week on their work or school commute, and an equal proportion reported typically taking public transportation on their non-work trips. It is somewhat paradoxical that 7 of 10 respondents have never used any of the listed public transportation services identified in the survey, while more than three-fourths

agree that “transit should be the focus for future transportation infrastructure.” In addition, **having stops closer to home or another destination** was the most influential factor for residents to consider using public transportation services more.

These findings, while seemingly inconsistent, are similar to those of the 2014 Texas Transportation Poll, where only 6 percent of registered voters reported using public transportation as their primary means of travel, yet a majority supported investing more public tax dollars in public transportation. While further research is needed to better understand the underlying reasons for high levels of public transportation support, the findings of the El Paso Multimodal Survey suggest that regional residents see value in regional public transportation. The data also suggest that respondents may be more apt to use transit, if a stop was closer to their origin and/or destination, if they had improved access to park and ride facilities, and/or if they perceived transit service as more reliable.

¹Open green space, playgrounds, rest areas, etc.

²More trees, colorful lighting, etc.

SUMMARY STATISTICS: RESIDENTS AND ALTERNATIVE TRAVEL MODES

BIKING

6%

Bike to work/school
(at least once/week)



63%

Would bike more
if they felt safer
in traffic

32%

Willing to bike if
more connected lanes existed

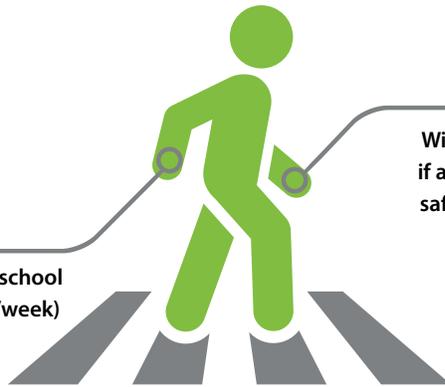
84%

Agree that biking
is healthy

WALKING

13%

Walk to work/school
(at least once/week)



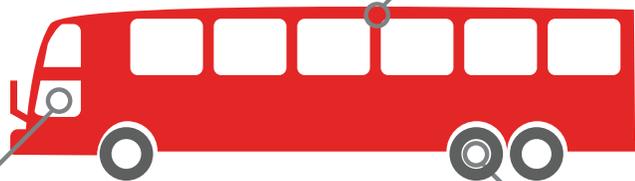
72%

Willing to walk more
if a larger number of
safer walking routes
existed

TRANSIT

71%

Agree that transit should
be the focus for future transportation
infrastructure development



69%

Never used public
transportation

8%

Take public transportation
to work/school (at least once/week)

While some respondents indicated nothing would encourage them to use alternative travel modes, a significant portion of them indicated a willingness to use these modes.

The first step in designing effective alternative travel programs and interventions is to better understand the barriers and motivators to adopting these alternative modes.

Researchers used an address-based sample to get a representative sample of individuals age 18+ in the El Paso metropolitan area.

Appendix: A Brief Synopsis on Data Collection and Survey Results³

Background

TTI's behavioral analysis approach required inputs on the behaviors or motivations for using or not using the various modes of transportation studied, especially walking and cycling. To gather these inputs, researchers developed a population sample survey for the El Paso MPO region. The specific study area included all of El Paso County, Texas, and parts of Doña Ana and Otero Counties, New Mexico.

This appendix:

- Summarizes the methods used to design and implement this survey.
- Provides details on how the data were processed prior to analysis.
- Describes the information collected by the instrument via descriptive statistics.

Survey Methods

Researchers designed the survey instrument for administering simultaneously in phone, mail, and web formats, with an average telephone interview length of no more than 20 minutes. The questionnaire focused on eight core areas:

- Residence/neighborhood.
- Work/school.
- Lifestyle.
- Biking habits.
- Walking habits.
- Public transportation habits.
- Well-being.
- Demographics.

Once researchers finalized the instrument and the El Paso MPO approved it, the survey contractor programed it in English and Spanish.

Researchers used an address-based sample to get a representative sample of individuals age 18+ in the El Paso metropolitan area. The address-based sample was matched to phone number to the extent possible, resulting in a survey sample where 100 percent of all sample records have a mailable address and approximately half have a phone number. The half with a phone number were actively recruited (mailed a letter directing them to an online survey or mailable survey, followed up with a phone recruitment call), while the other half were passively recruited (mailed a letter and directed to an online survey or asked to participate via mail).

³The information presented in this Appendix was reproduced from the final report of the El Paso multimodal research project. Please refer to the final report of the project for details: Aldrete R.M., A. Sánchez, T. Carlson, I.N. Sener, D. Galicia, C. Shailesh, T. Geiselbrecht, C. Simek, B. Ettelman, R.J. Lee, and M. Braughton. "Alternative Transportation Modes and Technology Applications for Multimodal Transportation Planning in the El Paso Region." Technical Report, prepared for the El Paso Metropolitan Planning Organization, June 2016.

Survey Implementation

Assuming an overall 20 percent response rate for this project, the survey contractor sampled a total of 9,564 addresses within the survey region, 65 percent of which was matched to a phone number. Two mailings were conducted during the data collection period. The first mailing took place on August 28, 2015, and was administered to 7,500 addresses. The second took place on September 25, 2015, and was administered to 8,500 addresses, of which 7,500 acted as a reminder to the initially mailed addresses. Telephone numbers were dialed from September 5, 2015, through October 16, 2015, with up to five attempts made to each, prior to the sample being considered dead. A total of 1,505 surveys were completed, with the majority coming via mail (62 percent), followed by phone (33 percent) and web (5 percent). The overall participation rate was approximately 18 percent. Approximately 8 percent of all surveys were completed in Spanish, with the remainder completed in English. Table A-1 shows a distribution of surveys by survey week and mode.

Table A-1. Completed Surveys by Mode.

Week	Mail Completes	Phone Completes	Web Completes	Total Completes
11-Sep-15	211	84	21	316
18-Sep-15	469	188	23	680
25-Sep-15	543	356	26	925
2-Oct-15	772	411	32	1215
9-Oct-15	893	434	32	1359
16-Oct-15	932	499	74	1505
% of Total	62%	33%	5%	100%

Data Processing

Researchers reviewed the survey dataset for inter-variable logic, skip patterns, reasonableness of data ranges, etc. Upon verifying the accuracy and completeness of the data, survey data weighting began. More information on survey data weighting can be found here: <http://www.applied-survey-methods.com/weight.html>.

A review of key demographic variables often used for survey data weighting (e.g., income, age, ethnicity, education) revealed some item non-response. Missing values or cases where respondents had refused to provide this information were imputed using linear regression and hot-deck imputation. More information on survey data imputation can be found here: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3130338/>.

After researchers tried multiple weighting schemes, the combination of age, ethnicity, and education yielded the best results. Table A-2 presents a comparison of the weighted survey data and U.S. Census data for the survey area. With the exception of the following demographic segments, the difference between the U.S. Census distribution and the weighted survey distribution is ± 5 percentage points: Hispanics (slightly over represented), whites (slightly under represented), household size = 1 (slightly under represented), and household size = 4+ (slightly over represented).

Ten respondents provided so little demographic information, that imputation for these cases was not possible. As such, these cases were assigned a weight of zero, essentially removing their influence on the survey results.

Definition:

Data weighting is the process of creating statistical adjustment factors that can be applied to the data to help overcome the effects of various forms of survey bias (including, but not limited to, non-response and self-selection).

After researchers tried multiple weighting schemes, the combination of age, ethnicity, and education yielded the best results.

Table A-2. Comparison of Weighted Survey Data to U.S. Census Data.

Demographic	Weighted Survey Data	U.S. Census Data for the Survey Area
Gender		
Male	47%	49%
Female	53%	51%
Age		
18–24	22%	17%
25–34	16%	20%
35–44	16%	18%
45–54	17%	17%
55–64	12%	14%
65+	17%	14%
Ethnicity		
Hispanic	87%	82%
White	8%	13%
Black	2%	3%
American Indian	1%	0%
Asian	1%	1%
Native Hawaiian	0%	0%
Other/Mixed Race/Non-Hispanic	1%	1%
Education		
Less than high school diploma	23%	25%
High school graduate, diploma or equivalent	27%	25%
Some college, no degree	28%	26%
Associate's or technical degree	6%	6%
Bachelor's degree	11%	12%
Graduate or professional degree	5%	6%
Income		
Less than \$15,000	15%	18%
\$15,000–\$24,999	18%	14%
\$25,000–\$34,999	15%	13%
\$35,000–\$49,999	13%	16%
\$50,000–\$74,999	15%	17%
\$75,000–\$99,999	9%	9%
\$100,000–\$124,999	4%	6%
\$125,000–\$149,999	4%	2%
\$150,000 or more	7%	5%
Tenure		
Own	66%	62%
Rent	34%	38%
HH Size		
1	11%	21%
2	28%	26%
3	19%	19%
4+	42%	34%



Univariate Descriptive Statistics of the Survey Data⁴

Residence/Neighborhood

The first section of the survey presented respondents with a series of questions on their specific home location and residential neighborhood. Figure A-1 suggests a fairly even distribution for the length of time respondents have lived in their home residence. Half of all respondents (50 percent) have lived in their current residence 15 or fewer years, and 49 percent have lived in their current residence at least 16 years.

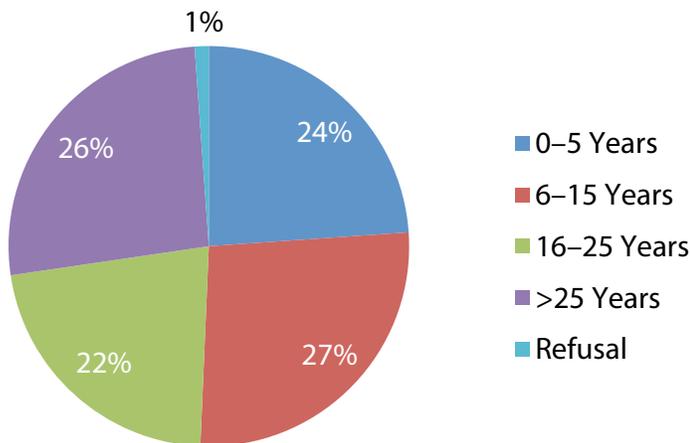


Figure A-1. Time at Current Residence (N=1,495).

Respondents were next presented a list of 11 neighborhood specific statements and, using a scale from 1 to 5, asked to assess their level of disagreement (1) or agreement (5) with each. Figure A-2 shows that “neighborhood is safe from crime for walking/biking” received the highest agreeable proportion of respondents (60 percent). This was followed closely by “there are shops and/or restaurants within walking or bicycling distance” (58 percent agreement) and “there are parks or trails to walk, run or bike” (57 percent agreement). Conversely, a majority of respondents (71 percent) disagreed with the idea that “there are dedicated bicycle storage facilities.” Important to note that simply building more bike lanes won’t, alone, result in increased cycling. If facilities like bicycle parking and storage aren’t built as well, cycling won’t grow because cyclists can’t, for example, store their bicycles safely when connecting with a transit line.

⁴The information presented hereafter includes the key characteristics of the survey data, and all descriptive statistics are based on the weighted survey data.

Half of all respondents (50 percent) have lived in their current residence 15 or fewer years, and 49 percent have lived in their current residence at least 16 years.

Lessons Learned: Bikes Require More Than Lanes

Simply building more bike lanes won’t result in increased cycling. For instance, if bicycle parking and storage aren’t built as well, cycling will likely not grow because cyclists can’t store their bicycles safely when connecting with a transit line.

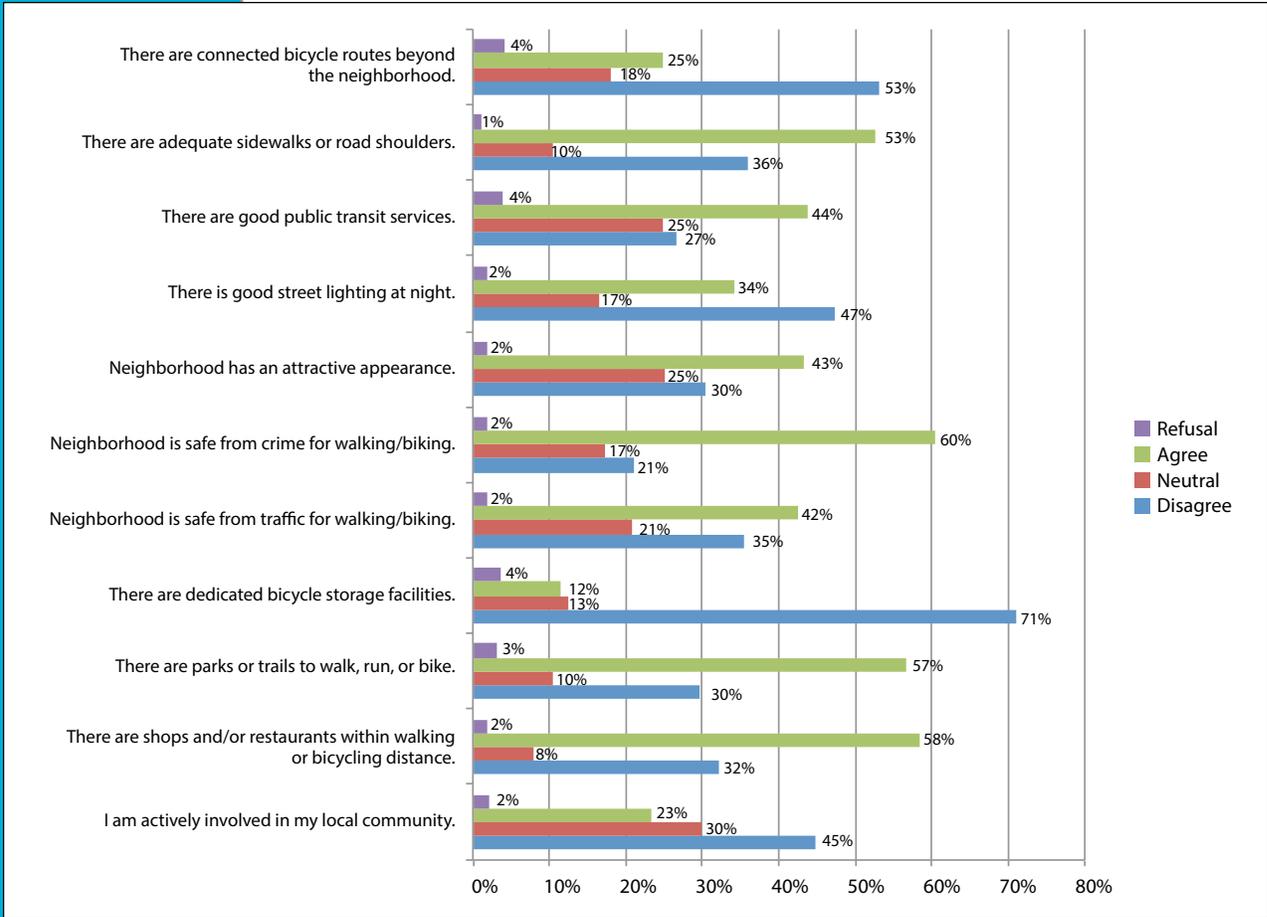


Figure A-2. Opinion of Neighborhood Attributes (N=1,495).

Work/School

Researchers asked respondents to select employment descriptors from a list that described their current situation. Figure A-3 presents a distribution of all responses, with the majority of responses either “employed full time” (33 percent) or “retired” (23 percent).

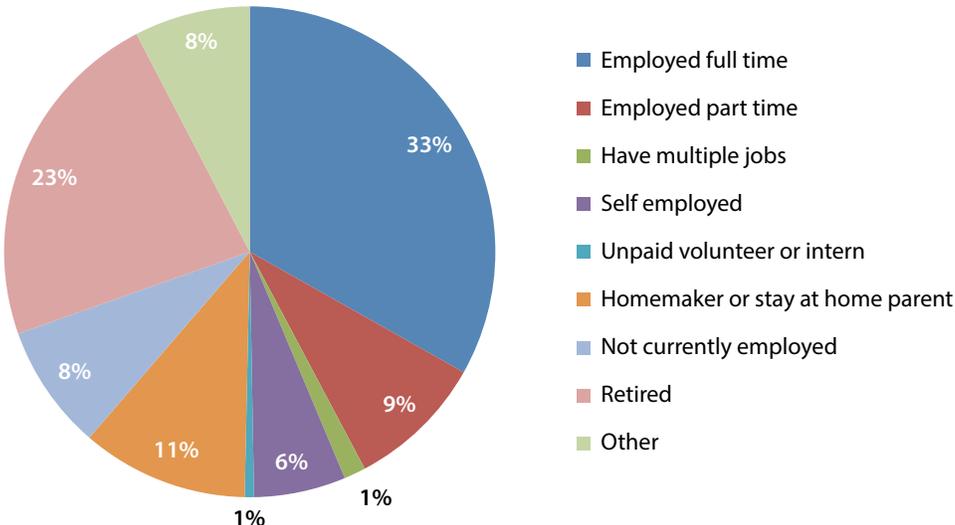
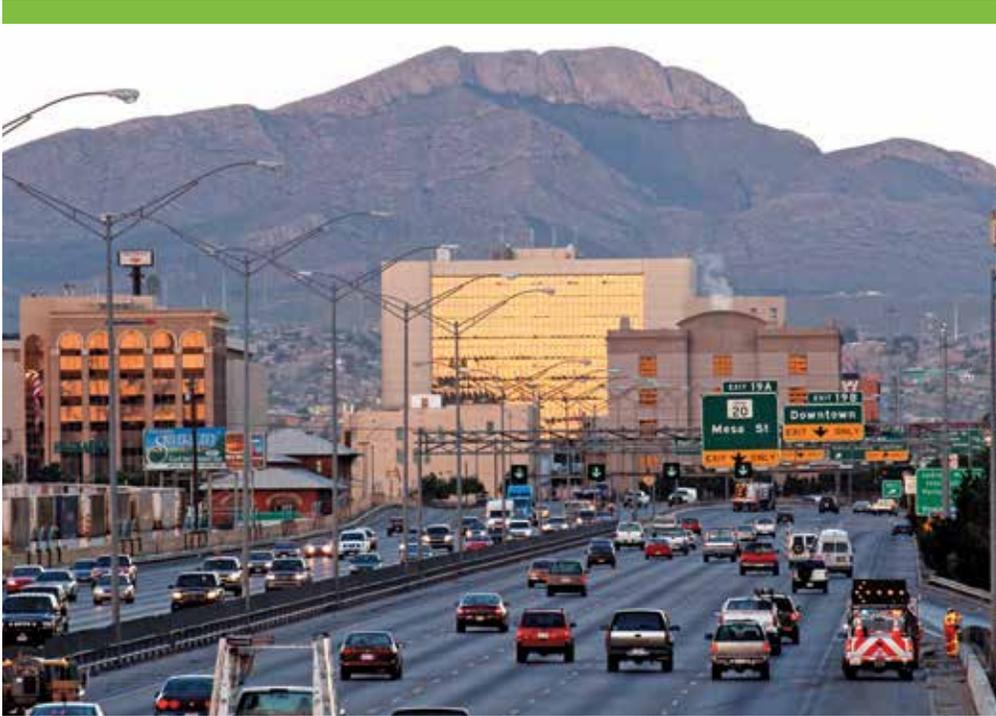


Figure A-3. Respondent Status (N=1,506 Responses).



Employees and students often use many modes (either independently or in combination with one another) to travel to and/or from work and/or school.

Employed respondents (full or part time) and students were asked to provide some details about their work or school commute. Figures A-4 and A-5 present a summary of work travel (or commute) distances and times, respectively. For commute distance, approximately half of employed respondents (48 percent) have a commute of 15 miles or less, compared to 61 percent who report school commutes of this distance. For commute time, approximately two-thirds (64 percent) of employees report travel times to work of a half hour or less, while slightly more than three-fourths (77 percent) of students report travel times to school of this duration.

Employees and students often use many modes (either independently or in combination with one another) to travel to and/or from work and/or school. Respondents were presented eight different modes and asked how many times per week they used each mode on their commute. Figure A-6 suggests that, like the vast majority of Texans, El Paso regional respondents are highly dependent on the single occupancy vehicle (SOV) as their means of commuting. Seventy-two percent reports SOV as their commute mode at least 4 days per week, and more than 8 of 10 rely on this mode at least one day per week. Thirteen percent reported walking to or from work or school at least once per week, and 8 percent reporting using public transportation or telecommuting with the same frequency on their commute.

Lessons Learned: Preferred Commute Modes

SOV was the most often mentioned commute mode at least once per week.

81%: SOVs

13%: Walking

8%: Transit

8%: Telecommute

72%: SOVs at least 4 times per week

Figures A-4 and A-5 present a summary of work travel (or commute) distances and times, respectively.

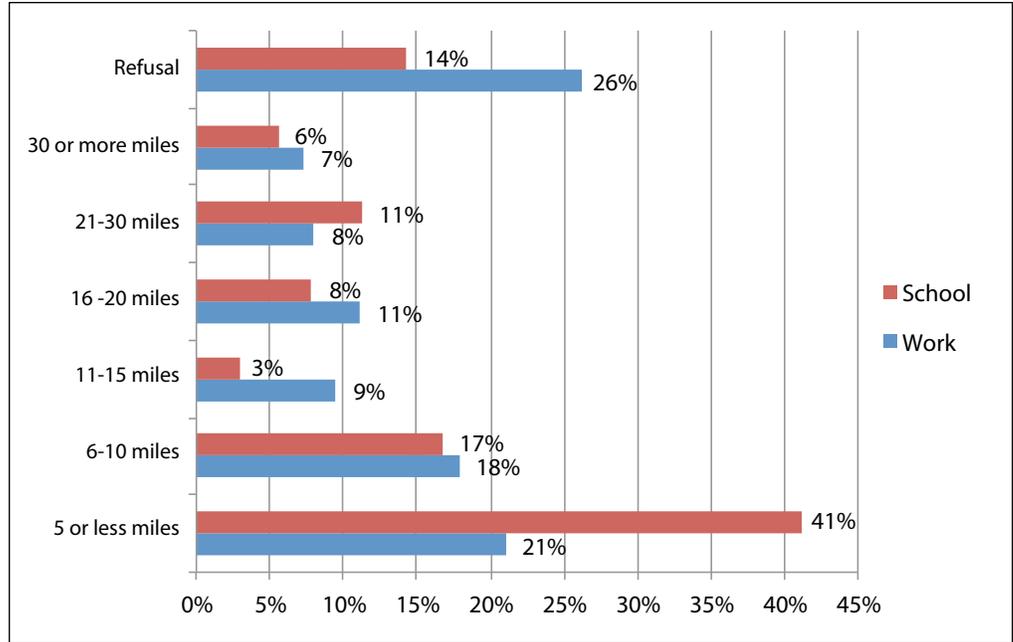


Figure A-4. School or Work Commute Distance (N=239 and N=742, Respectively).

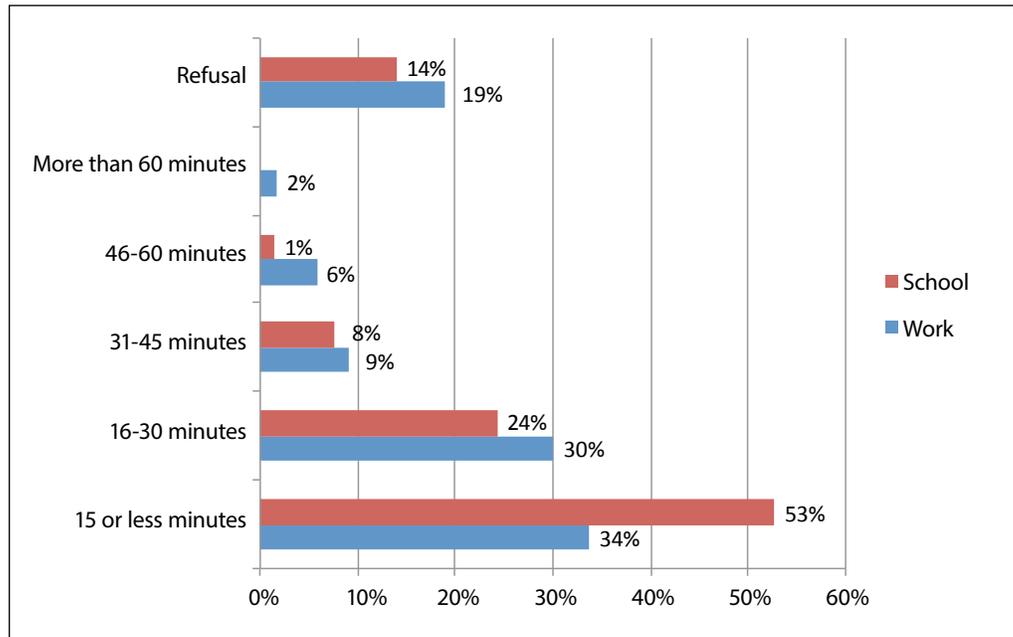


Figure A-5. School or Work Commute Time (N=239 and N=742, Respectively).

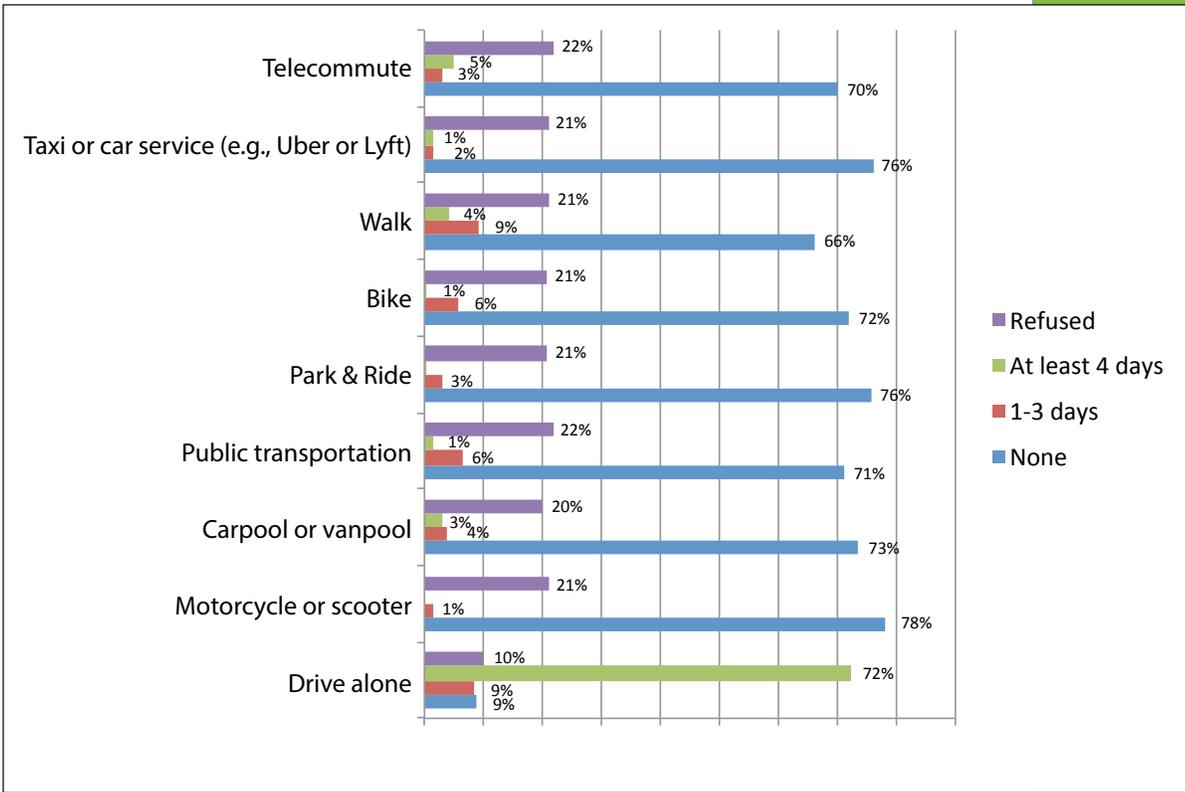


Figure A-6. Frequency of Use for Various Modes – School or Work Commute (N=873).

Researchers also asked participants some details about the stops they typically make when commuting to work or school. They were presented a list of stop types and allowed to select as many as needed to indicate their unique travel behavior. When these responses are analyzed “I do not make any regular stops during my commute” was most often mentioned (38 percent of all responses). Respondents specified stops for “beverage/food” in 27 percent of all responses, with “gym/exercise” and “child care” accounting for 8 percent of all responses, each. See Figure A-7 for further detail.

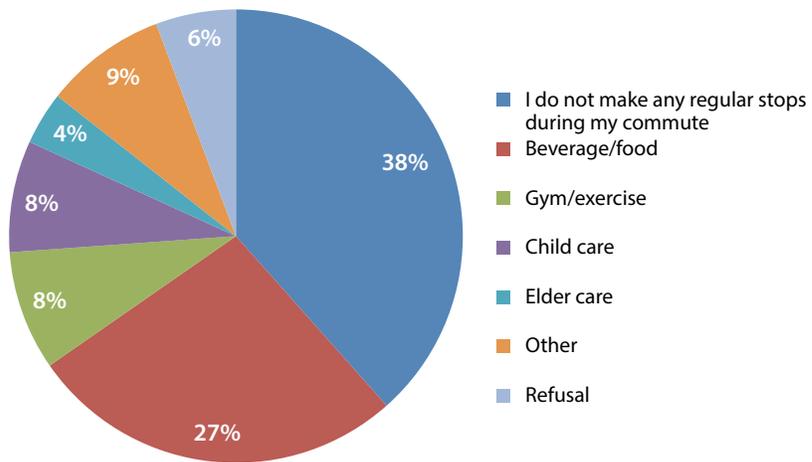


Figure A-7. Types of Stops on School or Work Commute (N=1,000 Responses).

Figure A-6 suggests that, like the vast majority of Texans, El Paso regional respondents are highly dependent on the SOV as their means of commuting.

When full- and part-time employees were asked about any commute-related benefits offered by their employer, 43 percent reported that flex time was an option. Eighteen percent stated that their employer allowed them to work from an alternative work location, rather than driving to a traditional work place, and only 4 percent were offered public transit assistance in the form of discounted or subsidized fares. See Figure A-8.

**Lessons Learned:
Commute Benefits**

- 43%:** Flex time is an option
- 18%:** Alternate work location allowed
- 4%:** Offered public transit assistance (e.g., discounted/subsidized fares)

When full- and part-time employees were asked about any commute-related benefits offered by their employer, 43 percent reported that flex time was an option. Eighteen percent stated that their employer allowed them to work from an alternative work location, rather than driving to a traditional work place, and only 4 percent were offered public transit assistance in the form of discounted or subsidized fares. See Figure A-8.

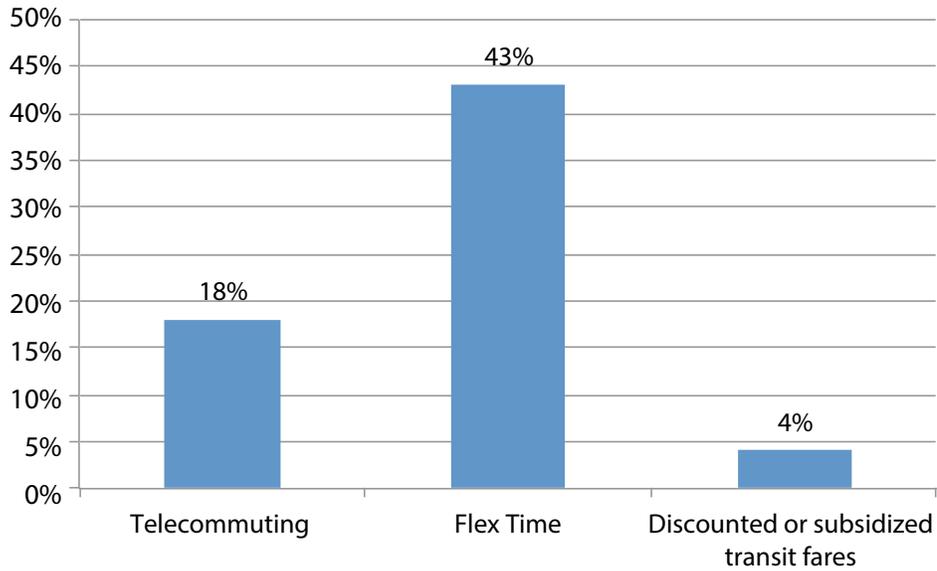


Figure A-8. Commute Benefits Offered by Employer (N=746).

Of the respondents permitted to telecommute, 40 percent reported doing so almost every day, and approximately 31 percent reported doing so rarely or never. This is somewhat indicative of an all or nothing employee culture toward telecommuting. See Figure A-9 for further detail.

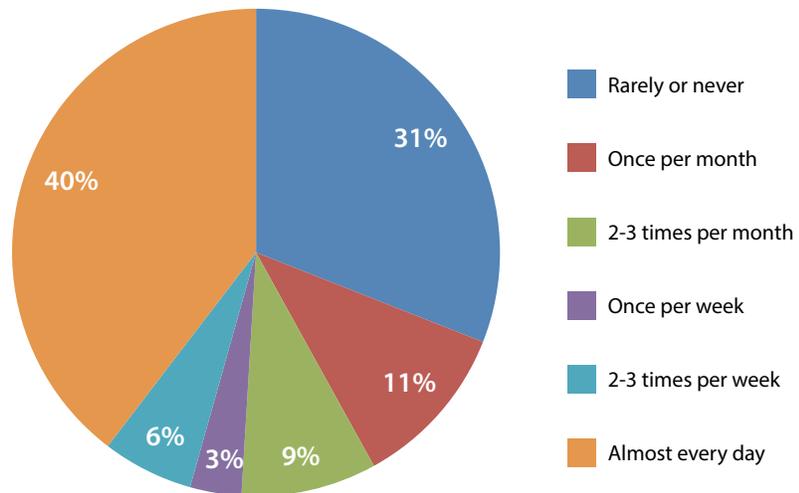


Figure A-9. Telecommuting Frequency (N=131).



When asked if they had an existing physical condition that prohibits their performing specific activities, biking was mentioned by 15 percent of all respondents.

As seen in Figure A-10, when asked if they had an existing physical condition that prohibits their performing specific activities, biking was mentioned by 15 percent of all respondents. Exercising was the next most mentioned (14 percent), followed by walking (10 percent) and taking public transit (7 percent).

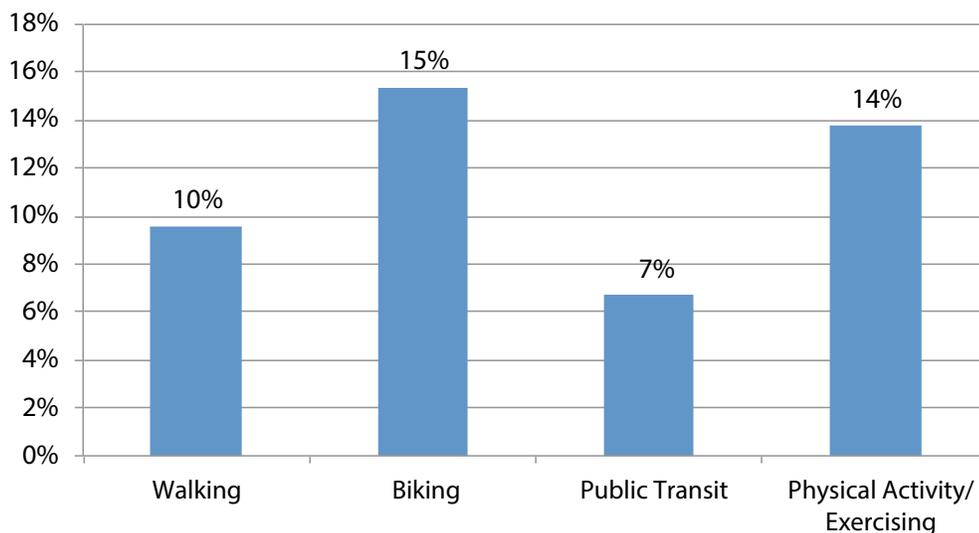


Figure A-10. Activities Prohibited by Existing Physical Condition (N=1,495).

On average, respondents were nearly twice as likely to engage in moderate rather than vigorous exercise. The average duration of moderate exercise was also longer than vigorous activity.

Lifestyle

Regular regimens of moderate exercise (e.g., fast walking, hiking, ballroom dancing, general gardening) or vigorous exercise (e.g., running, jogging, mountain climbing, competitive sports) can yield significant health benefits. Figure A-11 presents the monthly frequency of moderate and vigorous activities of survey respondents, while Figure A-12 presents the average duration of each moderate and vigorous activity episode. On average, respondents were nearly twice as likely to engage in moderate exercise (11.5 episodes per month) than vigorous (6.5 episodes per month). The average duration of moderate exercise was also longer (49.4 minutes per episode) than vigorous activity (35.7 minutes per episode).

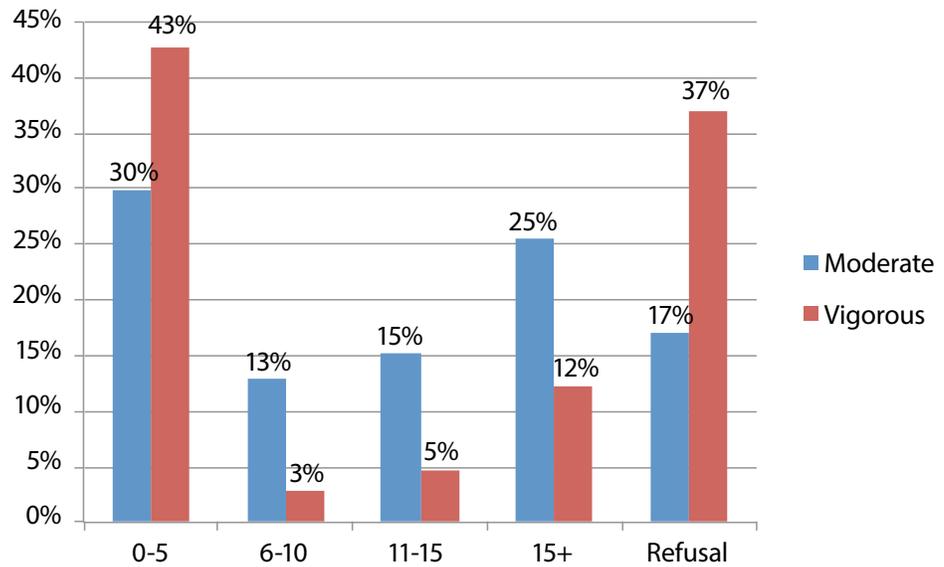


Figure A-11. Monthly Frequency of Moderate and Vigorous Activity Episodes (N=1,495).

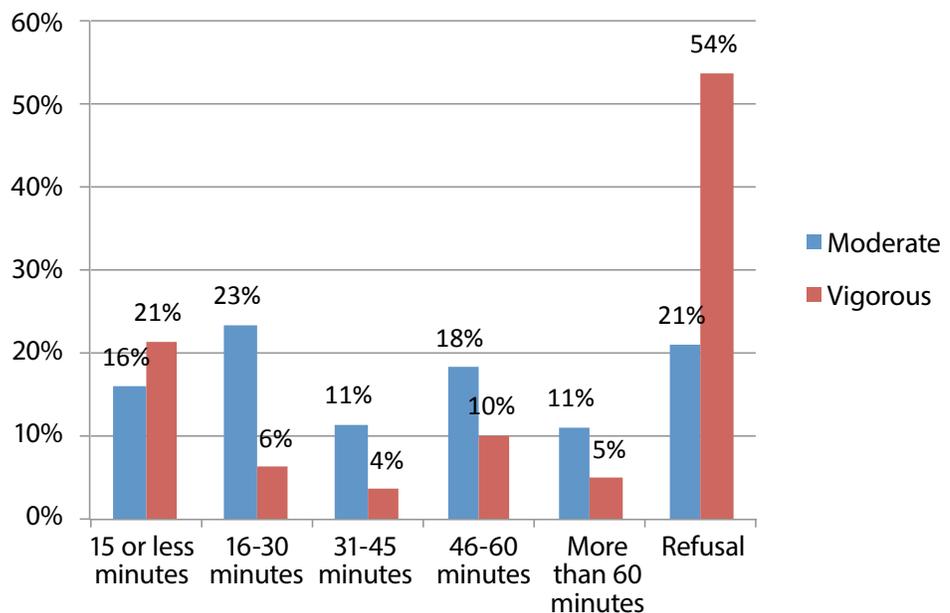


Figure A-12. Average Duration of Moderate and Vigorous Activity Episodes (N=1,495).

Researchers then presented respondents with a series of statements on some aspects of their lifestyle, including diet, physical activity, and travel behavior. Using a scale from 1 to 5, they were asked their level of disagreement (1) or agreement (5) with each. “Transit should be the focus for new transportation infrastructure” and “we need to expand or build new highways to reduce congestion” were the two statements that received the highest levels of agreement (71 percent each). Conversely, “I eat out frequently” and “I go to parks, playgrounds, golf courses, or hiking trails frequently” were the two statements that received the highest levels of disagreement (47 percent and 46 percent, respectively). “I eat healthy and pay attention to my nutrition” was the statement characterized by the highest level of neutrality (28 percent). See Figure A-13 for further details.

Lessons Learned: Transportation Infrastructure

- 71%:** New infrastructure development should expand transit options.
- 71%:** Expand/build new highways to reduce congestion.

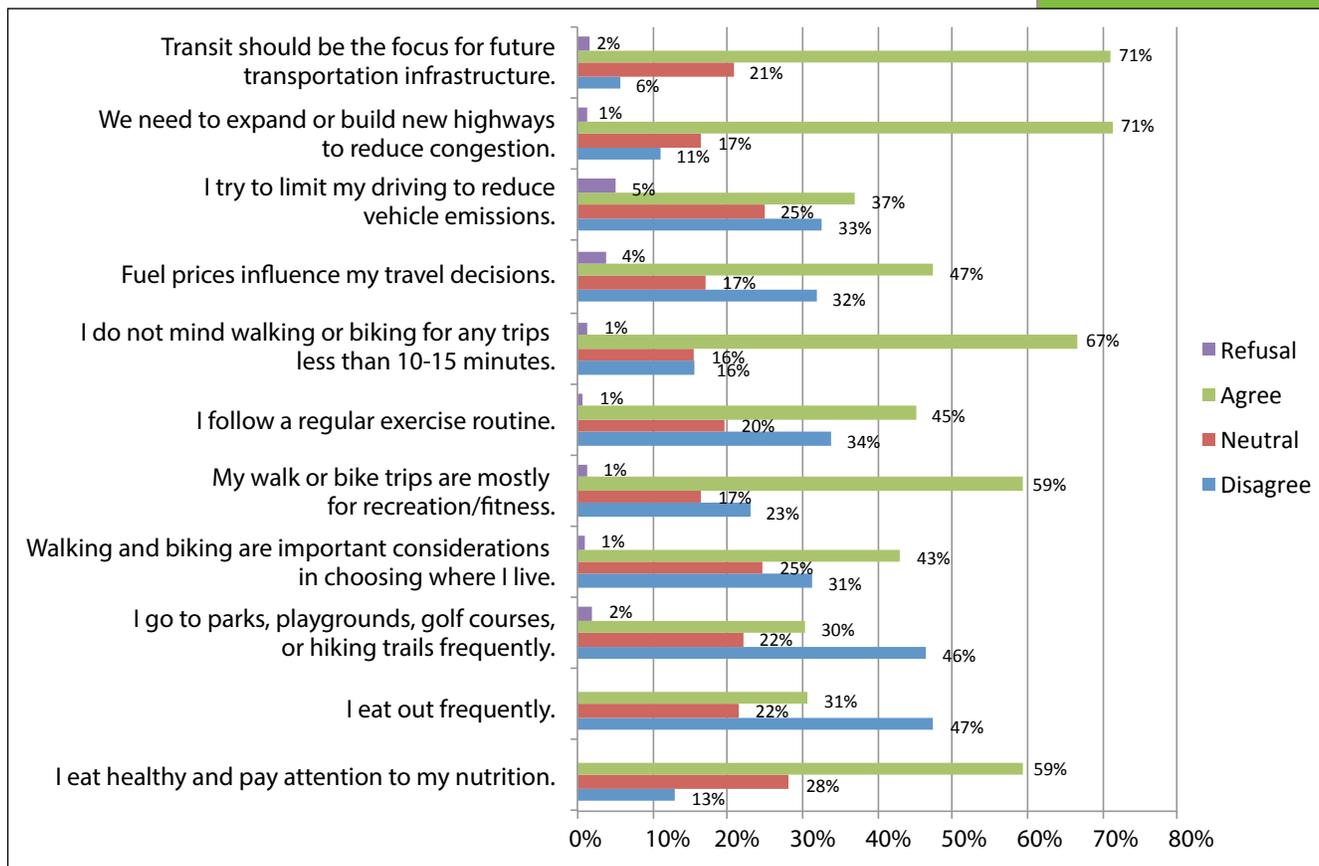


Figure A-13. Opinions on Diet, Exercise, and Travel (N=1,495).

Lessons Learned: Safety and Mode Choice

72%: Respondents for whom “safer walking routes” are important in considering travel alternatives.

66%: Respondents for whom “more reliable transit service” is a concern.

As shown in Figure A-14, “safer walking routes” motivated 72 percent of all respondents either somewhat (24 percent) or a lot (48 percent) in considering travel alternatives. This was followed by “more reliable transit service,” which motivated 66 percent of all respondents either somewhat (29 percent) or a lot (37 percent). “More information about ride share programs” was identified by the highest proportion of respondent (42 percent) as having no effect on their motivation to consider alternative modes.

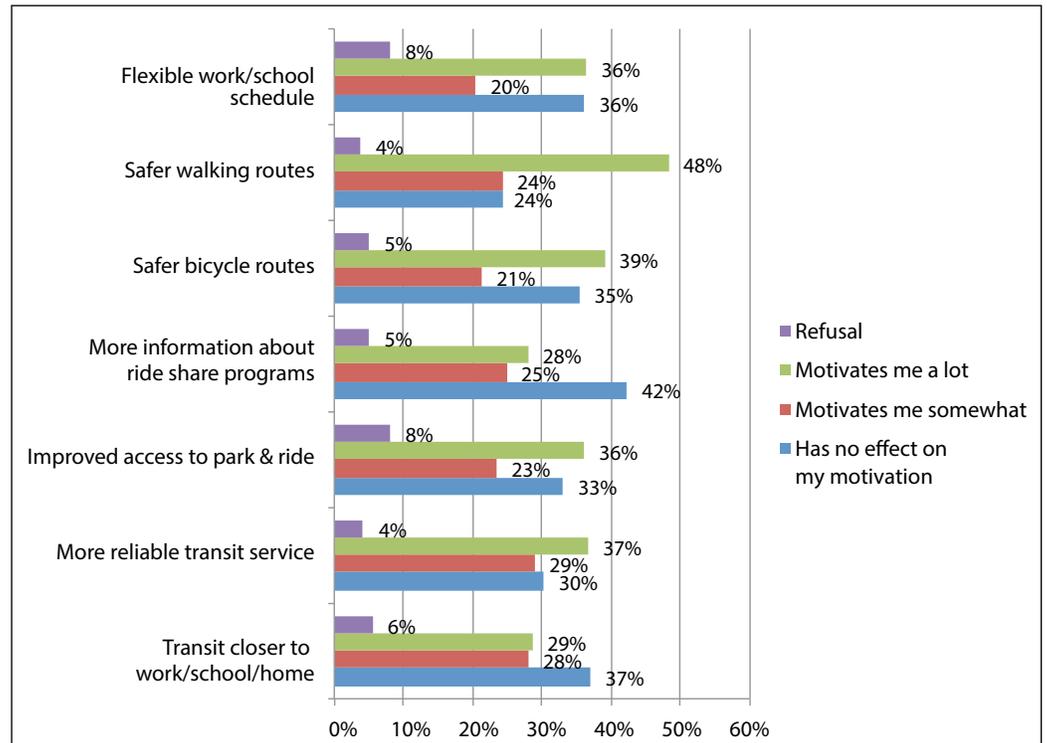


Figure A-14. Travel Alternative Motivators (N=1,495).

Similar to the pattern observed with commute mode choice, SOV (drive alone) was the most often mentioned non-work commute mode choice as well (62 percent of all responses). Walking (11 percent of all responses) and carpool or vanpool (11 percent of all responses) were the next most often mentioned responses. Public transportation was mentioned in 6 percent of all responses. See Figure A-15 for further detail.

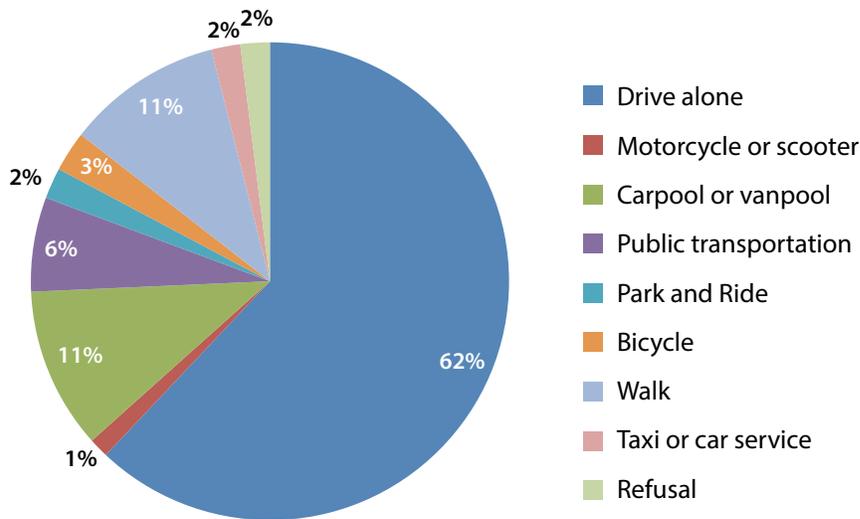


Figure A-15. Non-Work Trip Mode (N=1,827 Responses).

Biking Habits

Researchers next asked respondents about their bicycling habits. They were asked to select from a list of five bicycling-related statements to assess their attitudes toward bicycling. Roughly two-thirds of all responses were either “I am not interested in bicycling” (36 percent) or “I am not currently a bicyclist, but might consider bicycling in the future” (28 percent). Approximately one in five responses was “I like to bike, but only on trails or off main road bike paths. On road bike paths make me nervous.” See Figure A-16 for details.

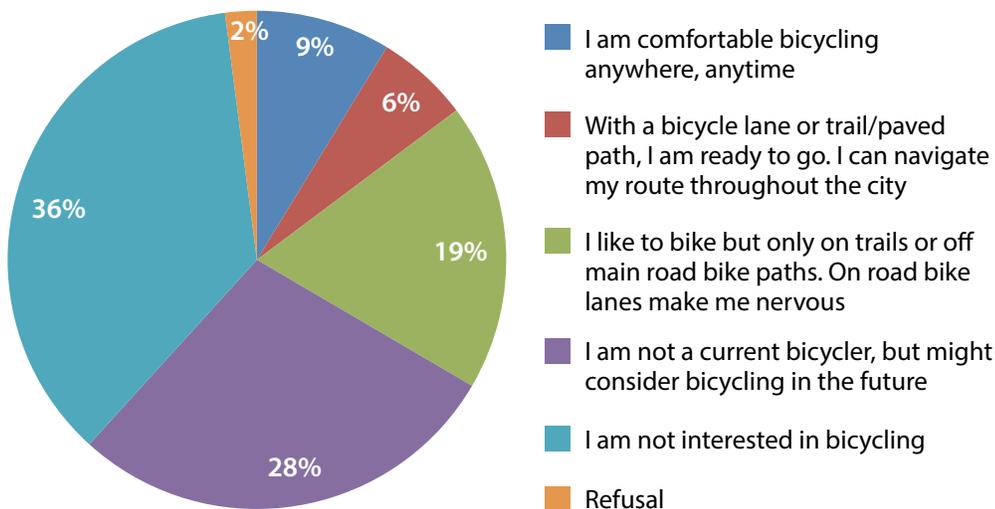


Figure A-16. Biking Habits (N=1,556 Responses).

Lessons Learned: Preferred Non-commute Modes

SOV was the most often mentioned non-work commute mode.

62%: SOVs

11%: Walking

11%: Carpool or vanpool

7%: Other

6%: Transit

3%: Bicycle

Lessons Learned: Is There Latent Demand for Bicycling?

28% of respondents indicated an interest in bicycling but are not current cyclists.

While a majority of respondents (84 percent) agree that bicycling is good for their health, a majority (54 percent) disagree that they choose bicycling instead of driving whenever possible.

While a majority of respondents (84 percent) agree that bicycling is good for their health, a majority (54 percent) disagree that they choose bicycling instead of driving whenever possible. Nearly half (47 percent) agreed that “bicycling means I don’t have to worry about parking.” More than one-third agreed that “bicycling is less stressful than driving” (38 percent) even though approximately one-third agreed that “bicycling takes too much time” (34 percent). See Figure A-17 for further details.

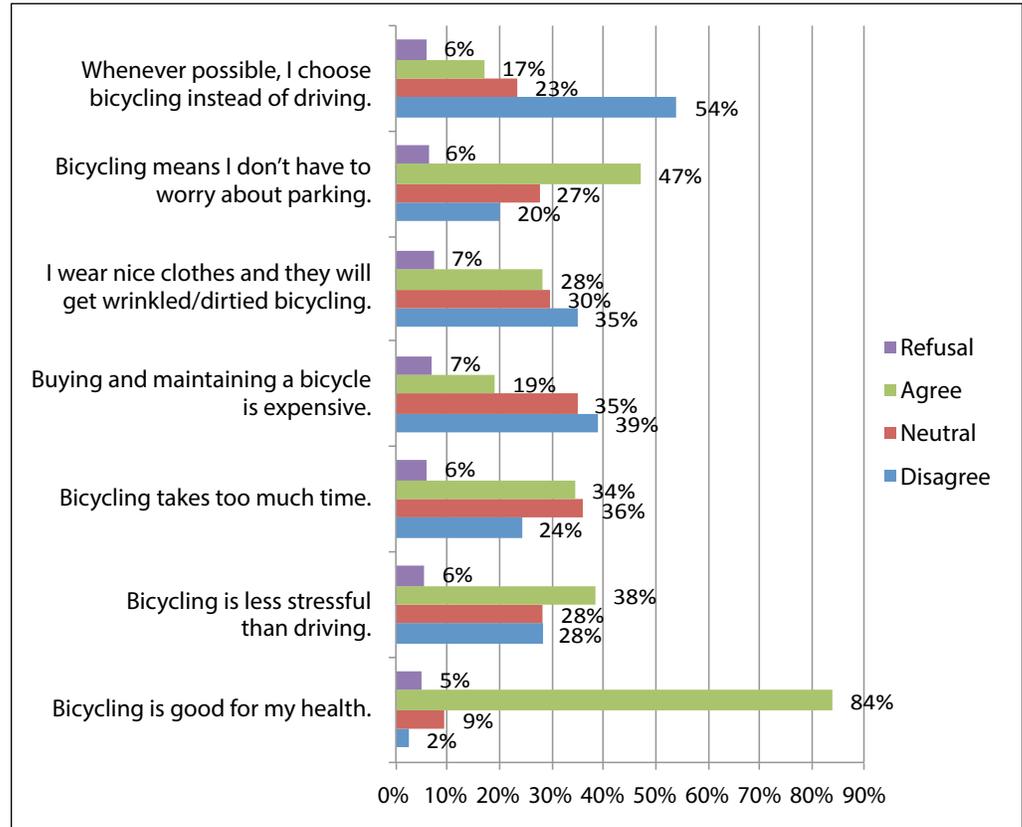


Figure A-17. Bicycling Opinions (N=1,495).

Individuals may choose not to increase the number of bicycle trips they make for a number of reasons. When respondents were asked to identify the top three reasons they do not make any (more) bicycle trips, “not feeling safe from traffic” (25 percent of all responses), “too far a destination from biking” (20 percent of all responses), and “unable to carry personal items” (15 percent of all responses) were the most prevalent. See Figure A-18 for other reasons why respondents choose not to make any (more) bicycle trips.

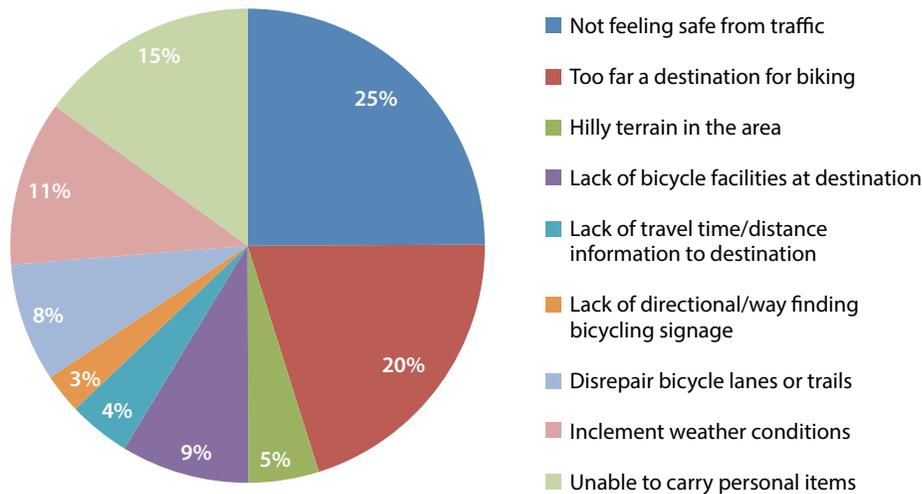


Figure A-18. Factors That Prevent More Biking (N=3,390 Responses).

When presented with a list of potential influencers and asked which might most influence them to bicycle more, nearly 3 of 10 responses suggested that “nothing would encourage me to bike more” (29 percent of all responses). “More connected bicycle lanes” was identified as a significant influencer (26 percent of all responses), and “more aesthetics” (13 percent of all responses), “more available amenities” (12 percent of all responses), and “more business with bicycle storage facilities” (11 percent of all responses) were mentioned with almost equal frequency. See Figure A-19 for further detail on potential biking influencers.

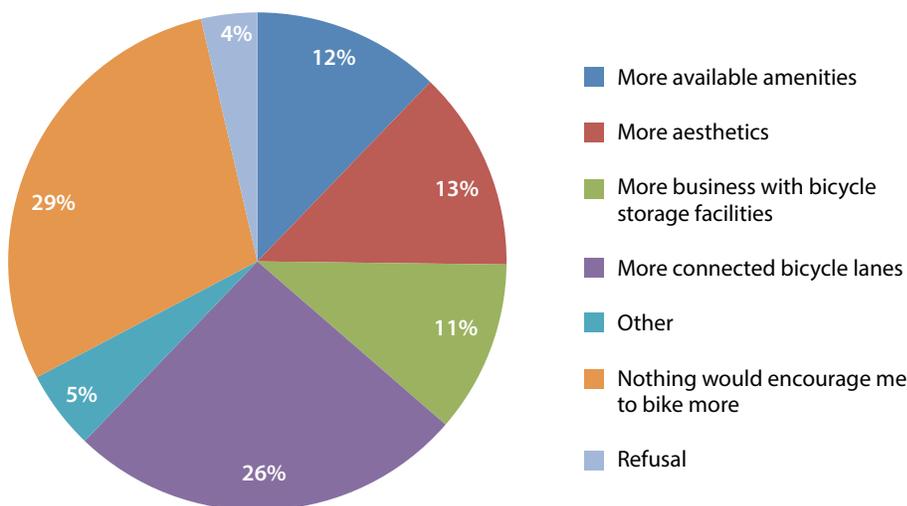


Figure A-19. Factors That Could Lead to More Biking (N=1,860 Responses).

Top Reasons Residents Don't Bike More

1. Not safe from traffic
2. Destination too far
3. Can't carry personal items

Lessons Learned: Motivators to Bike More

- 26%:** More connected bike lanes
- 13%:** More aesthetics
- 12%:** More available amenities
- 11%:** More business with bike storage facilities

Lessons Learned: Attitudes Toward Bike Share Systems

28%: Won't use at all

23%: Good for health

18%: Saves transportation costs



Survey participants were told that a bicycle share system is a transportation program designed for short distance point-to-point trips, where an individual can pick up a bicycle at one station and return it to another. They were then presented a list of potential influencers and asked to identify which would most motivate them to use a bicycle share system.

Figure A-20 shows that the most often mentioned response (28 percent of all responses) was "nothing would encourage me to use a bicycle share system." "Increases your overall health levels and physical condition" was mentioned in 23 percent of all responses, while "saves you money on transportation costs" was mentioned in 18 percent of all responses. Since it is relatively new, these response may change once more people try the system. There are also plans to expand the system outside the downtown area.

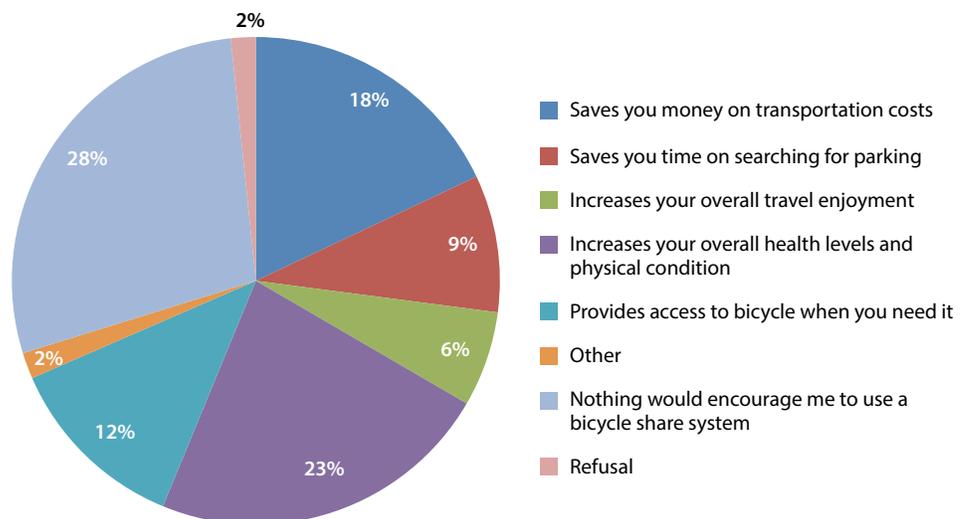


Figure A-20. Factors That Influence Use of Bike Share Systems (N=1,929 Responses).

Walking Habits

Researchers asked respondents about their walking habits. A strong majority of respondents (96 percent) agrees that walking is good for health, and that “walking means I don’t have to worry about parking” (72 percent). Nearly equal levels of agreement and disagreement were observed with the following statements: “whenever possible, I choose walking instead of driving,” “walking takes too much time,” and “walking exposes me to air pollution more than driving.” See Figure A-21 for further details.

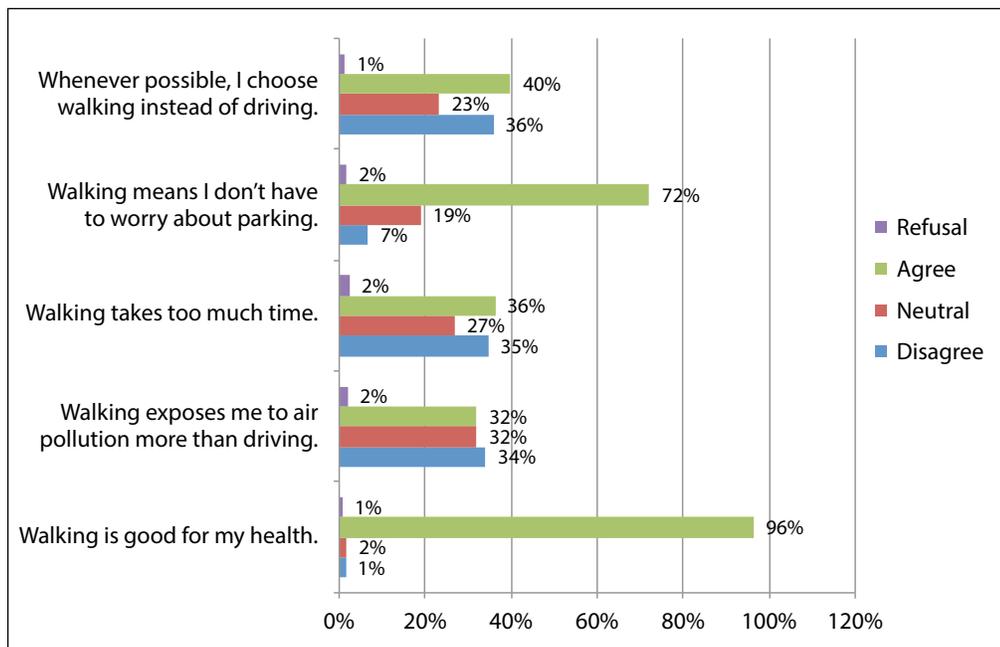


Figure A-21. Walking Opinions (N=1,495).

Individuals may choose not to increase the number of walk trips they make for a number of reasons. When respondents were asked to identify the top three reasons they do not make any (more) walk trips, “not feeling safe from traffic” (23 percent of all responses) and “inclement weather conditions” (18 percent of all responses) were the primary and secondary reasons. “Unable to carry personal items” (14 percent of all responses) and “lack of sidewalks to destinations” (14 percent of all responses) were tied for third most prevalent. See Figure A-22 for other reasons why respondents choose not to make any (more) walk trips.

Top Reasons Residents Don't Walk More

1. Not safe from traffic
2. Bad weather
3. Can't carry personal items and lack of sidewalks

**Lessons Learned:
Motivators to Walk More**

28%: More available amenities

25%: More aesthetics

24%: More pedestrian-friendly businesses

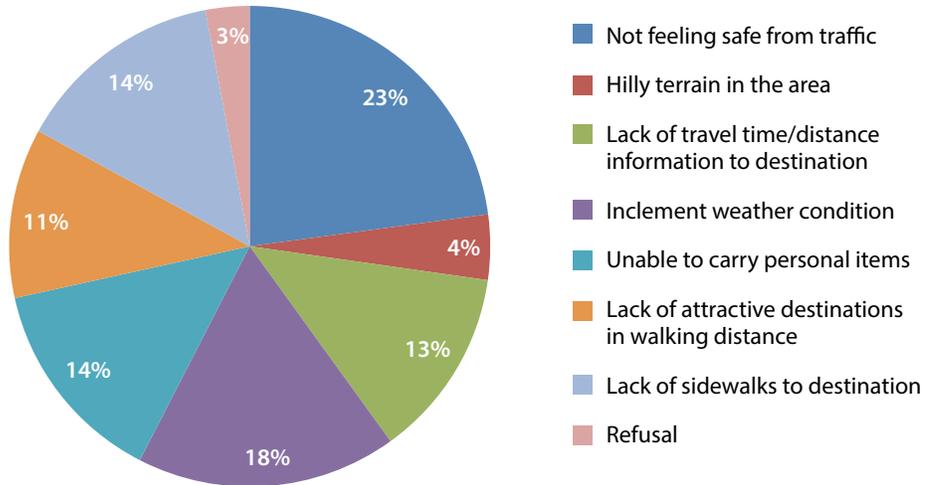


Figure A-22. Factors That Prevent More Walking (N=3,501 Responses).

When presented with a list of potential influencers and asked which might most motivate them to walk more, nearly 3 of 10 responses suggested that “more available amenities” (28 percent of all responses). “More aesthetics” was identified as a significant influencer (25 percent of all responses), as was “more businesses with a walkable environment” (24 percent of all responses). See Figure A-23 for further detail on potential walking influencers.

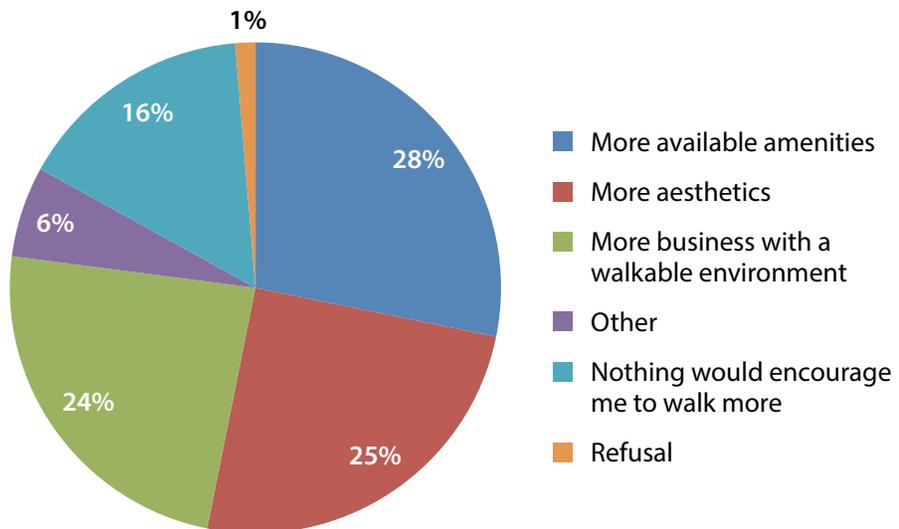


Figure A-23. Factors That Could Lead to More Walking (N=1,913 Responses).

Public Transportation Habits

Researchers then surveyed respondents about regional public transportation. Initially, survey participants were presented with a list of regional public transportation services and asked about their use of each. Figure A-24 suggests that nearly 7 of 10 respondents (69 percent) had not used any of the presented services. Among the listed services, Sun Metro Regular Bus Service was the most frequently used (25 percent of all responses).

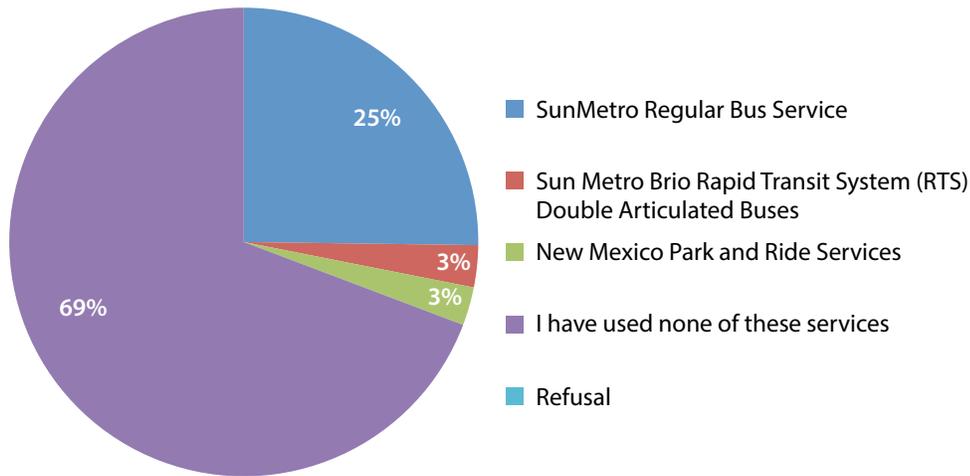


Figure A-24. Use of Regional Public Transportation Services (N=1,524 Responses).

Next, respondents were presented a series of statements about regional public transportation services. Using a scale from 1 to 5, they were asked to assess their level of disagreement (1) or agreement (5) with each. Figure A-25 suggests that “it takes longer than driving” was not only the statement that received the highest levels of agreement (60 percent) but also the lowest levels disagreement (9 percent). “It is not disability friendly” was not only the statement that received the highest levels of disagreement (42 percent) but also the lowest levels agreement (7 percent). This series of questions was characterized by fairly high levels of neutrality across the board (ranging from 20 percent to 46 percent). This may be a result of the high proportion of respondents that have never used any regional public transportation service (and lack knowledge thereof).

Lessons Learned: Do Residents Use Transit Options?

69%: Respondents who hadn't used any services (e.g., Sun Metro)

Lessons Learned: Motivators to Use Public Transportation Services More

20%: Stops closer to home/
destination

13%: More reliable schedules

12%: A better schedule fit

11%: Shorter travel times

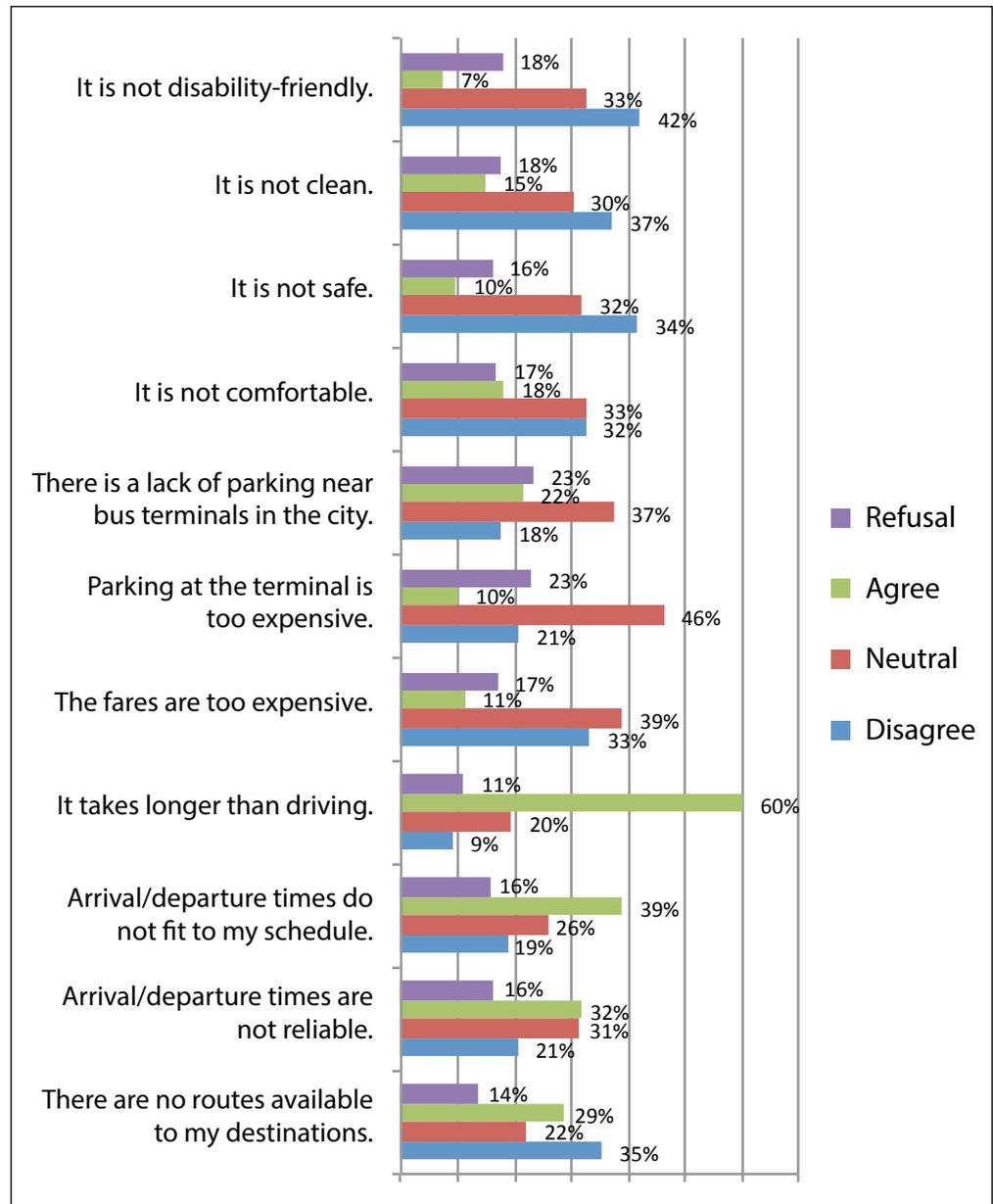


Figure A-25. Opinion of Regional Public Transportation Services (N=1,495).

When asked about factors that might influence survey participants to use regional public transportation services more, respondents mentioned that “nothing would encourage me to use public transportation more” in 21 percent of their responses. “A stop closer to home or [my] destination” was mentioned in 20 percent of responses, and “more consistent arrival and departure times” constituted 13 percent of all responses. See Figure A-26 for further details on factors that might influence participants to use regional public transportation services with greater frequency.

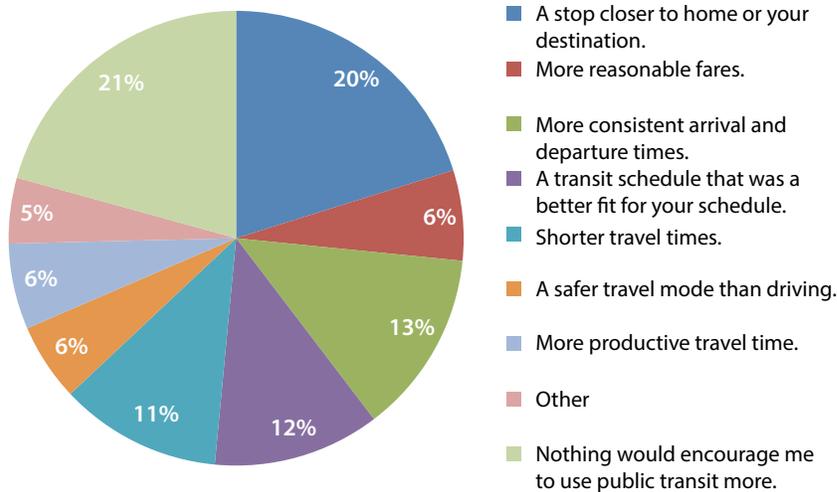


Figure A-26. Factors That Could Lead to Increase Use of Public Transportation (N=2,227 Responses).

Well Being

Participants were asked two brief questions on their physical and mental well-being. Figure A-27 suggests that one-third (33 percent) perceive their physical health as either excellent (9 percent) or very good (25 percent). Approximately 4 of 10 (41 percent) think their health is good, while the rest (25 percent) think their health is either fair (21 percent) or poor (4 percent).

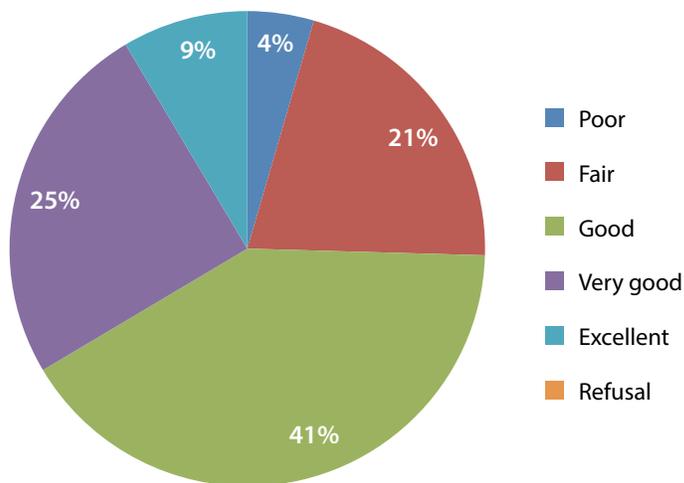


Figure A-27. Assessment of Physical Health (N=1,495).

Lessons Learned: Self-Perception of Well-Being

Nearly 25% of respondents consider their health “fair” or “poor.”

Lessons Learned: Weight Issues and Health

Nearly two-thirds (63 percent) of respondents are either overweight or obese.

When asked about their mental well-being, approximately 8 of 10 (79 percent) said they were at least satisfied with their personal life, while only 5 percent were dissatisfied. Fifteen percent were neither satisfied nor dissatisfied with their personal life. See Figure A-28 for details.

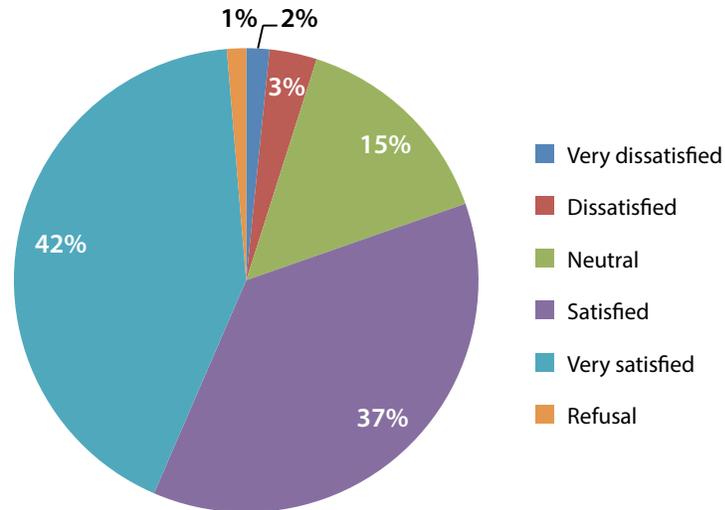


Figure A-28. Assessment of Personal Life (N=1,495).

Finally, researchers asked respondents for their weight and height. Using this information, the corresponding body mass index (BMI) was computed. More information on BMI can be found at http://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm. Figure A-29 shows the distribution of BMI categories. The results indicate that more than one-third (35 percent) of respondents were overweight. About 3 of 10 (29 percent) were normal weight and slightly less (28 percent) were obese. Six percent were underweight and 2 percent refused. See Figure A-29 for further details.

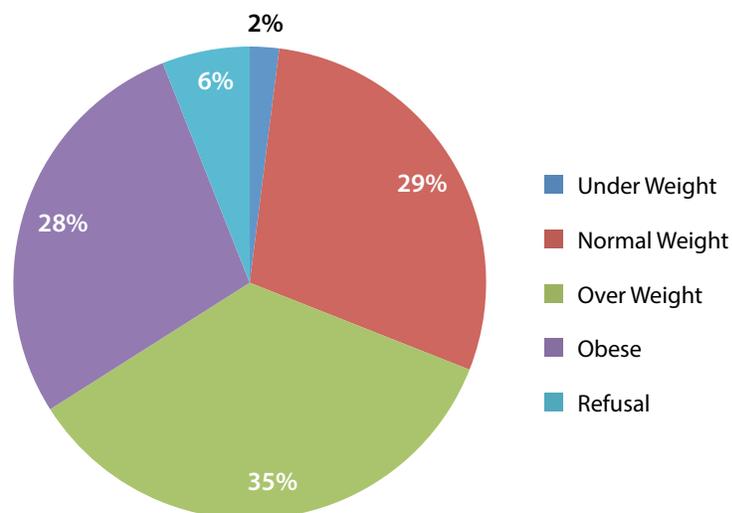


Figure A-29. Body Mass Index (N=1,495).



Demographics

The final section of the survey asked respondents to provide a wealth of demographic information about not only themselves, but also their households. Table A-3 presents a summary of the weighted survey demographic variables.

Figure A-30 presents details on technology and social media use. These estimates suggest that approximately three-fourths of the population use (rarely, sometimes, often, or all of the time) “text messaging” (75 percent), “other internet searching” (74 percent), or “e-mailing” (74 percent). The least used option was a smartphone or transportation app (54 percent of respondents never having used an app of this type). Knowing what media residents use (and don’t use) can help the MPO plan outreach to residents that is effective, reaches the most citizens, and likely to be understood. This could be useful in not only advertising active travel modes, but also in providing real-time information on all modes of travel and recommended strategies (e.g., not making non-commute trips during rush hour).

Lessons Learned: Residents and Electronic Communication

75%: Use texting

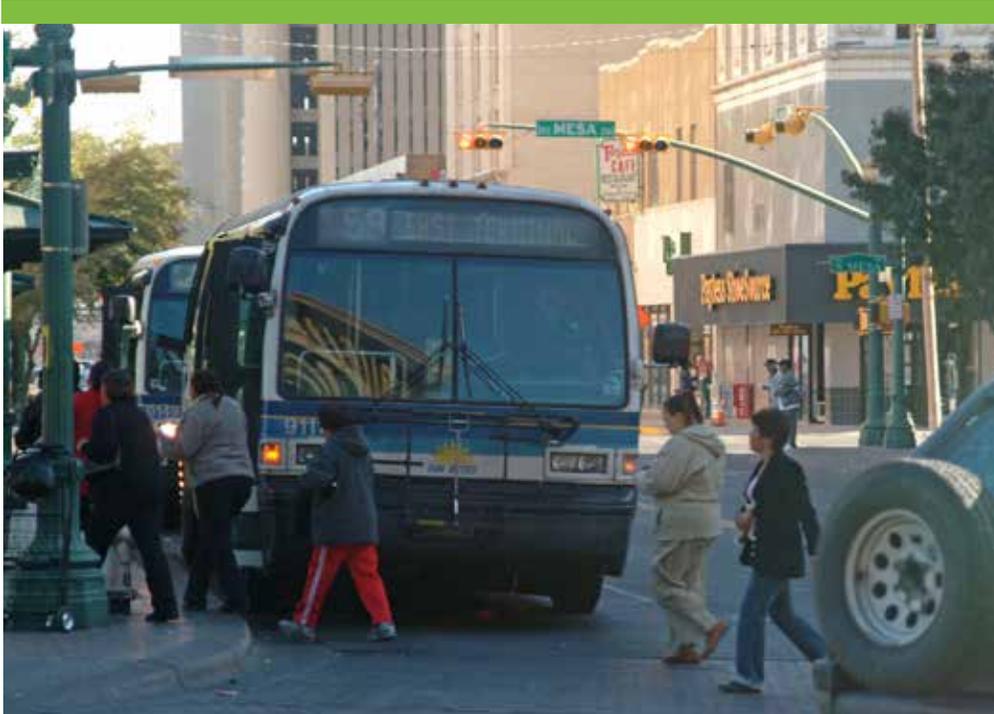
74%: Use Internet search engines

74%: Use e-mail

Table A-3 presents a summary of the weighted survey demographic variables.

Table A-3. Demographic Distributions of Survey Participants (N=1,495).

Gender		Relationship Status	
Male	47%	Single, never married	22%
Female	53%	Divorced	8%
Ethnicity		Married or domestic partnership	55%
Hispanic	87%	Separated	3%
White/Caucasian	8%	Widowed	8%
African American	2%	Refusal	4%
American Indian/Alaska Native	1%	Licensed Driver	
Asian/East Indian	1%	Yes	87%
Native Hawaiian/Pacific Islander	0%	No	13%
Mixed Race - Non Hispanic	1%	Household Vehicles	
Annual Household Income		0	3%
Less than \$15,000	15%	1	23%
\$15,000–\$24,999	18%	2	35%
\$25,000–\$34,999	15%	3+	34%
\$35,000–\$49,999	13%	Refusal	5%
\$50,000–\$74,999	15%	Tenure	
\$75,000–\$99,999	9%	Own	65%
\$100,000–\$124,999	4%	Rent	33%
\$125,000–\$149,999	4%	Refusal	2%
\$150,000 or more	7%	Household Size	
Educational Attainment		1	11%
Less than high school diploma	23%	2	28%
High school graduate, diploma or equivalent	27%	3	19%
Some college, no degree	28%	4+	42%
Associates or technical degree	6%	Household Workers	
Bachelor's degree	11%	0	14%
Graduate or professional degree	5%	1	33%
Age		2	28%
18–24	22%	3+	15%
25–34	16%	Refusal	10%
35–44	16%		
45–54	17%		
55–64	12%		
65–74	13%		
75+	4%		



The least used option was a smartphone or transportation app (54 percent of respondents never having used an app of this type).

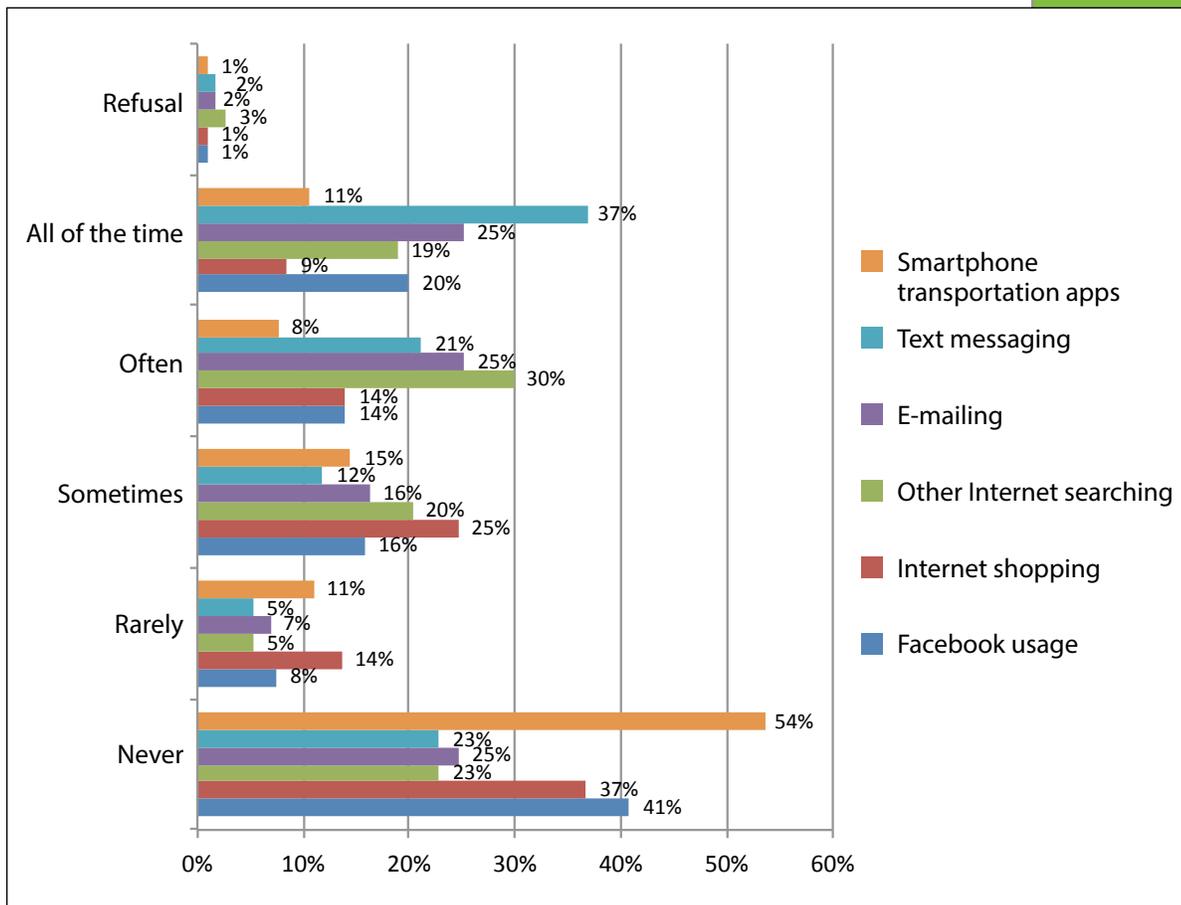


Figure A-30 presents details on technology and social media use.

Figure A-30. Technology and Social Media Use (N=1,495).

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From Theory to the Field

AUTHORS:

Ipek N. Sener, Ph.D.

Assistant Research Scientist

Texas A&M Transportation Institute

Chris Pourteau

Senior Research Editor

Texas A&M Transportation Institute

