New Jersey Department of Transportation

Bicycle Activities and Attitudes Survey, Fall 2016

Outcome and Process Evaluation

Report, December 2016

Conducted for:

New Jersey Department of Transportation

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PART I

Introduction

EXECUTIVE SUMMARY

The New Jersey Bicycle Activities and Attitudes Survey was administered by staff from the Voorhees Transportation Center (VTC) and the Bloustein Center for Survey Research (BCSR) in the fall of 2016. This survey was conducted on behalf of the New Jersey Bicycle and Pedestrian Resource Center (BPRC), which is supported by the New Jersey Department of Transportation and the Federal Highway Administration. The survey was designed to provide information on bicycling habits, preferred bicycling environments, attitudes toward social issues, and demographic characteristics of New Jersey residents. A similar survey on bicycle use was administered in 2008 and 2009, and the current survey was intended to provide data on current bicycle use. Since the last survey was administered, the BPRC and other organizations have promoted increased bicycle use, and the current survey was also intended to see how general attitudes may have changed due to these efforts.

The VTC staff composed the first draft of the survey and planned the original administration of the survey. These plans were refined with assistance from BCSR staff. The survey's promotional materials were distributed to 53 sites in New Jersey, in addition to marketing online through social media. The survey itself was administered online from September 16th to November 29th in 2016. Further details about the administration process are listed below.

PLANNING AND IMPLEMENTATION

The principal investigators (PIs) for this project specified how the survey should be implemented. The survey would primarily be conducted online; respondents would be informed of the survey through the distribution of promotional materials. The primary distribution method involved graduate students distributing intercept cards to pedestrians. These flyers included information in English and Spanish about the project and a link to the website where the survey could be taken, along with a unique identification code. Printed surveys were available for respondents who did not want to, or could not complete an online survey. Additionally, packets of 50 intercept cards were distributed to bicycle shops. Bicycle hangers, or cards which could be hung on parked bicycles, were also used.

The survey materials were distributed in municipalities which were selected due to their higher than average rates of bicycling. Additionally, the research team ensured that the entire state was represented during the outreach effort. The research teams used American Community Survey data to determine which municipalities had the highest number of bicycle commuters. Additionally, the team used data previously collected by VTC in the "Bicycling to Rail Stations in NJ" report to determine locations with large numbers of parked bicycles.

A secondary distribution method was an online advertisement placed on the social media website Facebook, which was linked to the BPRC page. The advertisement was originally run with a photograph of people bicycling, with text inviting the public to take the survey. A second run used an image which resembled the pedestrian intercept flyer. In both instances, the advertisement was only visible to New Jersey residents over the age of 18 who indicated on their profile page an interest in bicycles, trail, or

commuting. Based on the chosen parameters, Facebook ran the advertisement on the appropriate pages for a total of 27 days.

SURVEY DEVELOPMENT

The PIs composed the first draft of survey questions. These questions were refined through pilot testing by the entire research project staff and additional staff from the VTC. The final draft of the questions was approved by the entire project staff before the survey was administered. An independent vendor translated the survey into Spanish. Both versions were entered into the online survey program Qualtrics and tested for accuracy. The URL njbikesurvey.com was purchased so that the survey website could be easily remembered and accessed.

At the same time, an exact copy of the survey was developed in Qualtrics for anonymous users. This version of the survey was the one promoted through the Facebook advertisements.

SURVEY DISTRIBUTION

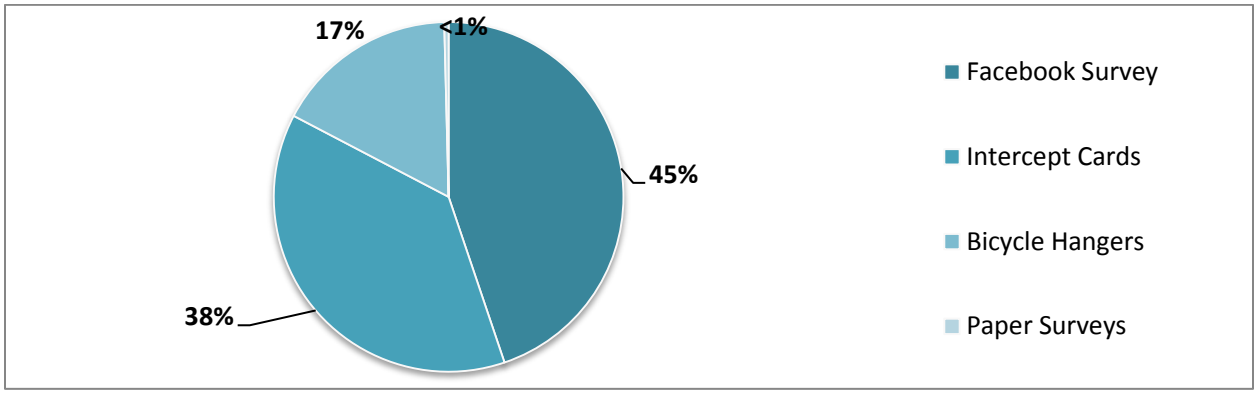
On Friday, September 16th, pilot testing of the survey distribution process began. Student employees received 100 each of the intercept cards, bicycle hangers, and printed surveys with return envelopes. The students went to several locations in New Brunswick and distributed materials where a large number of passersby were expected to be, following a standardized script protocol designed to increase interest in the survey. Bicycle hangers were also placed on parked bicycles. No problems were found with the pilot and the full survey was implemented.

Throughout the following weeks, students distributed additional materials in locations where large numbers of bicyclists and pedestrians were expected. These locations included areas throughout New Jersey, including the north (Jersey City), south (Collingswood), central (Princeton), and shore (Asbury Park) areas of the state. The map in Appendix A shows the municipalities where intercept cards were distributed and Appendix B shows the municipalities which received bicycle hangers. Appendix C shows the locations of bicycle shops that received flyers. Appendix D provides an example of how multiple intersections were targeted in municipalities by highlighting how surveying was conducted in shore communities.

OUTCOME EVALUATION

The survey returned a total of 1,928 individual respondents who consented to the survey and answered at least one item on the instrument. The returned responses were examined by promotional materials used to access the survey. More than four fifths of the sample (83%) used the Facebook ad or intercept cards to access the survey. The remaining 17% of the sample mostly used bicycle hangers to access the survey, and a handful of respondents used paper surveys. The figure below provides additional details.

Survey Response by Promotional Material (n=1,928)



REPORT OUTLINE

The following tables and figures are organized by the order in which the related questions appeared in the survey. Section I covers bicycling activity and attitudes toward bicycling in general. Section II concerns perceptions of whether various streets and paths are safe for bicyclists. Section III covers general attitudes toward social issues. Finally, Section IV covers demographic information.

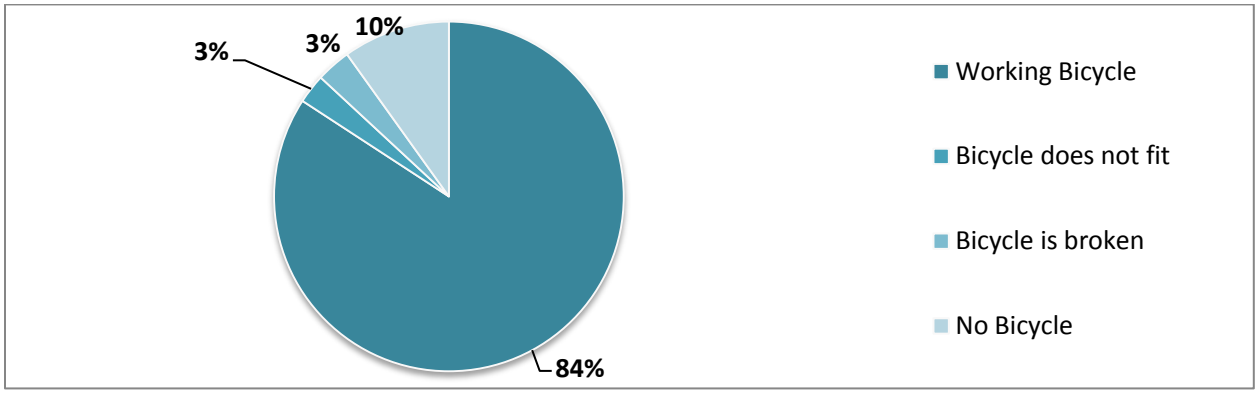
PART 2

SURVEY DATA

SECTION 1

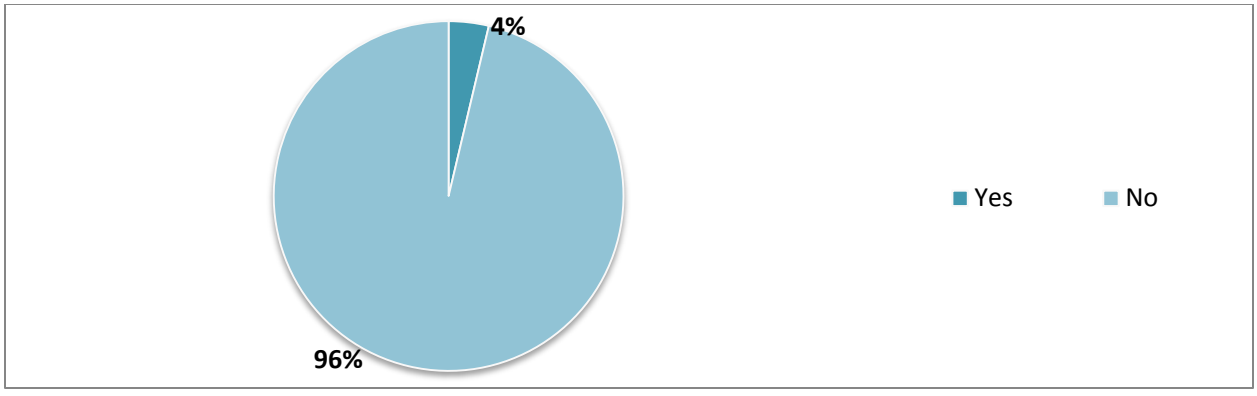
This section of the survey includes questions about bicycle use. The first question determines whether the respondent owns a working bicycle. As seen in Figure 1.1, more than four fifths of the respondents (84%) currently have a working bicycle, with about one sixth of the respondents (16%) owning a bicycle they cannot use or not owning a bicycle at all.

Figure 1.1: Bicycle Ownership (n=1,927)



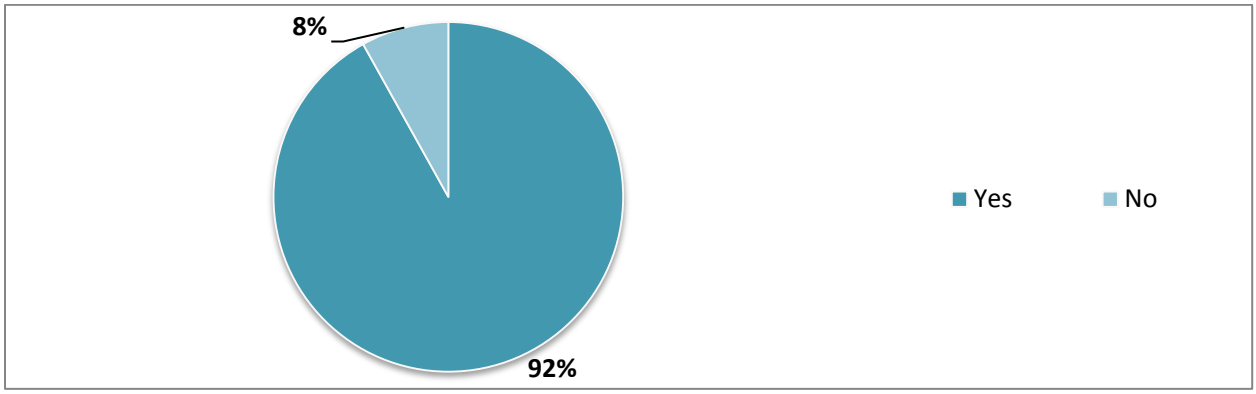
The next question asked if respondents had any physical limitations restricting their use of a bicycle. An overwhelming majority (96%) responded that they did not have any such limitations. The results are shown in Figure 1.2.

Figure 1.2: Physical Limitations Restricting Bicycle Use (n=1,923)



The results were also similar for Question 3, which asked if respondents had ridden a bicycle in the last 12 months. More than 90% of the sample indicated they had bicycled within the past year. Figure 1.3 shows the results for this question.

Figure 1.3: Bicycling Activity in the Last 12 Months (n=1,926)



For Question 4, respondents who indicated that they had used a bicycle within the last year were asked where they traveled using their bicycles. Table 1.1 shows the results for this question. Each destination was answered separately, and many respondents recorded travelling to multiple destinations. Tables 1.1a through 1.1c show the response to this question by survey access mode. The main differences among these groups were that respondents using bicycle hangers to access the survey were more likely to bicycle to work or to a public transit station and less likely to bicycle for exercise and recreation, compared with the other groups and the total sample.

The most popular purpose for bicycling was for exercise or recreation. More than two thirds (67%) of those who indicated that they bicycled for these reasons did so at least once each week and less than 5% indicated they never bicycled for exercise or recreation. The second most popular purpose was travel to work or school; more than a third of the respondents (37%) traveled at least once a week by bicycling for this purpose. The other options received generally similar responses, with a range of 45-70% of respondents indicating they either never traveled for the reason given or only traveled a few times a year.

Table 1.1: Destinations

Bicycle Travel	Never	A few times a year	About once a month	About once a week	A few times a week
For Exercise or Recreation (n=1,730)	4%	14%	15%	21%	46%
To Work or School (n=1,625)	47%	11%	5%	6%	31%
To a Grocery Store (n=1,628)	40%	23%	12%	14%	12%
To Any Other Store (n=1,641)	32%	25%	15%	14%	14%
To a Park or Playground (n=1,648)	20%	26%	20%	17%	18%
To a Restaurant, Bar, or Café (n=1,625)	38%	23%	15%	12%	12%
To Visit Friends or Family (n=1,627)	34%	26%	16%	11%	13%
To a Public Transit Station (n=1,628)	53%	15%	6%	6%	20%

Table 1.1a: Destinations (Facebook)

Bicycle Travel	Never	A few times a year	About once a month	About once a week	A few times a week
For Exercise or Recreation (n=804)	1%	8%	16%	22%	53%
To Work or School (n=751)	52%	14%	6%	7%	22%
To a Grocery Store (n=744)	47%	24%	11%	10%	7%
To Any Other Store (n=752)	37%	30%	14%	11%	9%
To a Park or Playground (n=756)	20%	27%	21%	17%	16%
To a Restaurant, Bar, or Café (n=747)	41%	26%	14%	11%	8%
To Visit Friends or Family (n=744)	34%	30%	16%	11%	9%
To a Public Transit Station (n=739)	66%	17%	4%	4%	9%

Table 1.1b: Destinations (Intercept Cards and Paper Surveys)

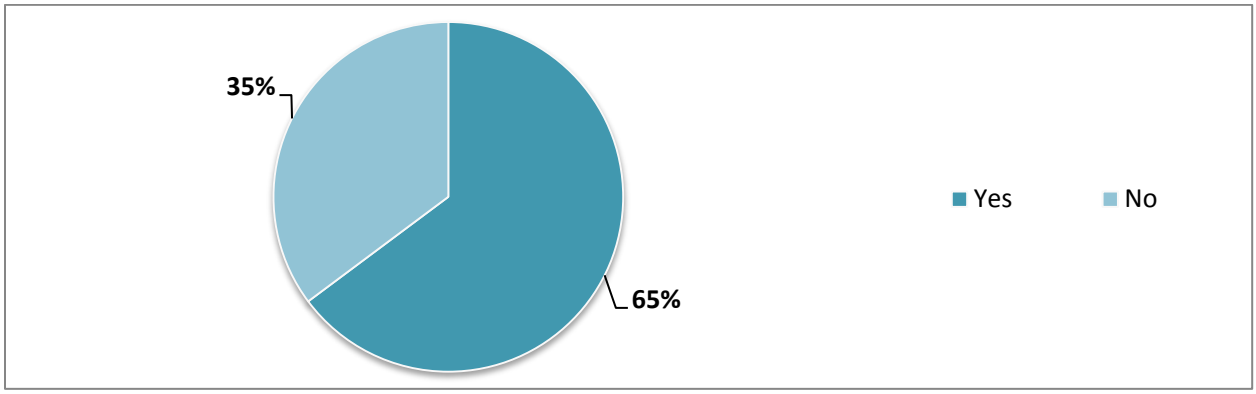
Bicycle Travel	Never	A few times a year	About once a month	About once a week	A few times a week
For Exercise or Recreation (n=611)	6%	21%	13%	20%	40%
To Work or School (n=565)	55%	11%	4%	6%	24%
To a Grocery Store (n=569)	43%	23%	9%	12%	12%
To Any Other Store (n=575)	37%	23%	12%	12%	15%
To a Park or Playground (n=581)	21%	28%	17%	14%	19%
To a Restaurant, Bar, or Café (n=567)	46%	22%	11%	10%	11%
To Visit Friends or Family (n=575)	38%	25%	12%	10%	15%
To a Public Transit Station (n=570)	61%	14%	6%	6%	12%

Table 1.1c Destinations (Bicycle Hangers)

Bicycle Travel	Never	A few times a year	About once a month	About once a week	A few times a week
For Exercise or Recreation (n=315)	6%	15%	19%	21%	39%
To Work or School (n=309)	20%	5%	4%	6%	65%
To a Grocery Store (n=315)	15%	18%	22%	24%	22%
To Any Other Store (n=314)	11%	17%	23%	23%	26%
To a Park or Playground (n=311)	16%	18%	24%	22%	20%
To a Restaurant, Bar, or Café (n=311)	18%	17%	24%	17%	24%
To Visit Friends or Family (n=308)	24%	19%	21%	16%	20%
To a Public Transit Station (n=319)	9%	10%	9%	9%	62%

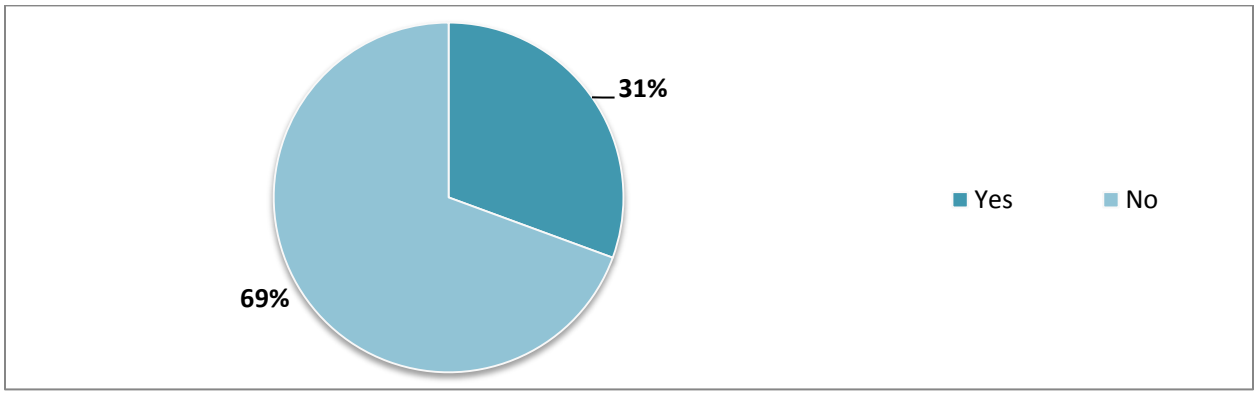
The next questions concerned situations where the respondent does not use a bicycle. For Question 5, respondents were asked if they used a bicycle in the dark. About two thirds of the respondents (65%) indicated that they did use a bicycle at night or when it was dark. The results are in Figure 1.4.

Figure 1.4: Use of a bicycle at nighttime or when it is dark out (n=1,736)



Question 6 asked if respondents avoided using a bicycle where they lived for reasons other than bad weather. The number who admitted they avoided bicycling was just over 30% of the sample, as seen in Figure 1.5.

Figure 1.5: Avoidance of bicycle use in your neighborhood or town, other than bad weather (n=1,742)



In Question 6a, respondents who admitted they avoided bicycling were asked if a list of reasons for not bicycling applied to them. Many respondents listed more than one reason for avoiding bicycling, so each reason is considered separately from the others. Reasons related to traffic were selected the most often as regular reasons for not bicycling. The results are in Table 1.2.

Table 1.2: Reasons that prevent you from using a bicycle

Reasons for Not Bicycling	Always	Sometimes	Never
There are too many hills in my area (n=508)	5%	26%	70%
Traffic is too fast and I don't feel safe (n=521)	33%	53%	14%
Too many large intersections (n=517)	22%	47%	31%
Too much traffic(n=522)	27%	49%	24%
I need to carry a heavy or large item (n=511)	15%	57%	28%
Most places are too far away (n=512)	12%	59%	30%
I worry about crime (n=510)	9%	21%	71%
Often travel with people who are not bicycling (n=510)	12%	55%	33%

Question 7 asked all respondents which types of streets and paths they used for bicycling. Four fifths of the sample (80%) indicated they used streets with a bicycle lane or shoulder. Table 1.3 shows the results in more detail.

Table 1.3: What part of the street do you typically ride on? (n=1,735)*

Streets/Paths	Used
On a street with a bicycle lane or shoulder along the street (n=1,380)	80%
On an off-street bicycle path (n=916)	53%
On the street in the traffic lanes (n=1,077)	62%
In a park with no traffic(n=737)	42%

* The percentages are based on the total number of respondents who selected at least one of the answer choices. Respondents could select more than one answer choice for this question or choose not to respond, so the percentages do not add up to 100 percent.

Question 8 asked all respondents to select all applicable reasons that they stopped using a bicycle. The most popular responses involved traffic (18%) and no longer having the time for bicycling (15%). Table 1.4 shows the results in detail.

Table 1.4: Reasons for not bicycling (n=1,625)*

Reasons for Not Bicycling	Yes
I was hit by a motor vehicle (n=90)	6%
I was frightened by the traffic in my area (n=290)	18%
My bicycle was broken (n=214)	13%
I moved to an area where I could not bicycle (n=101)	6%
I purchased a car (n=145)	9%
I no longer had the time to bicycle (n=238)	15%
My neighborhood had too much crime and I felt unsafe (n=51)	3%
I was no longer physically able to bicycle (n=49)	3%
I have never used a bicycle (n=17)	1%
I have always used a bicycle and have never stopped using one (n=907)	56%
Other (n=190)	12%

* The percentages are based on the total number of respondents who selected at least one of the answer choices. Respondents could select more than one answer choice for this question or choose not to respond, so the percentages do not add up to 100 percent.

Questions 9 and 10 asked how many friends and family members used a bicycle for different purposes. Most respondents indicated that the majority of their friends and family members did not use a bicycle, but recreation and exercise was a more popular reason for bicycling than commuting and shopping. Table 1.5 outlines the responses in more detail.

Table 1.5: Bicycle Use by Family and Friends

How many of your friends or family members use a bicycle for:	All of them	Most more than half)	Some (less than half)	None of them
Recreation or exercise (n=1,883)	8%	21%	60%	11%
To get to work, school, or for shopping (n=1,857)	2%	5%	52%	42%

Question 11 asked respondents to select situations they considered inappropriate for bicycle use. Table 1.6 has more detailed information. Nearly half of the sample (47%) considered bicycling inappropriate

for travelling to a professional meeting; this situation was considered inappropriate by the most respondents. Nearly half of the sample (46%) also indicated that using a bicycle was appropriate in any situation.

Table 1.6: When do you think it is inappropriate to use a bicycle? (n=1,866)*

Situation	Yes
To get to work (n=153)	8%
To go to the grocery store (n=172)	9%
To go to a professional meeting in formal dress (n=874)	47%
To go to a job interview (n=721)	39%
To go to a restaurant while on vacation (n=116)	6%
To arrive on a date (n=404)	22%
I think it is always okay to use a bicycle for any activity (n=866)	46%

* The percentages are based on the total number of respondents who selected at least one of the answer choices. Respondents could select more than one answer choice for this question or choose not to respond, so the percentages do not add up to 100 percent.

Question 12 asked respondents to answer whether they received a warning or traffic ticket from a police officer as a bicyclist. Most of the sample (89%) had not received a warning or ticket while bicycling. Figure 1.7 outlines the results.

Table 1.7: Warning or Traffic Ticket from Police Officer as a Bicyclist (n=1,871)*

Situation	Yes
Yes, and it was because I disobeyed a traffic law (n=94)	5%
Yes, but I was obeying all traffic laws (n=71)	4%
Yes, but it was in another state, not in New Jersey (n=107)	6%
No (n=1,660)	89%

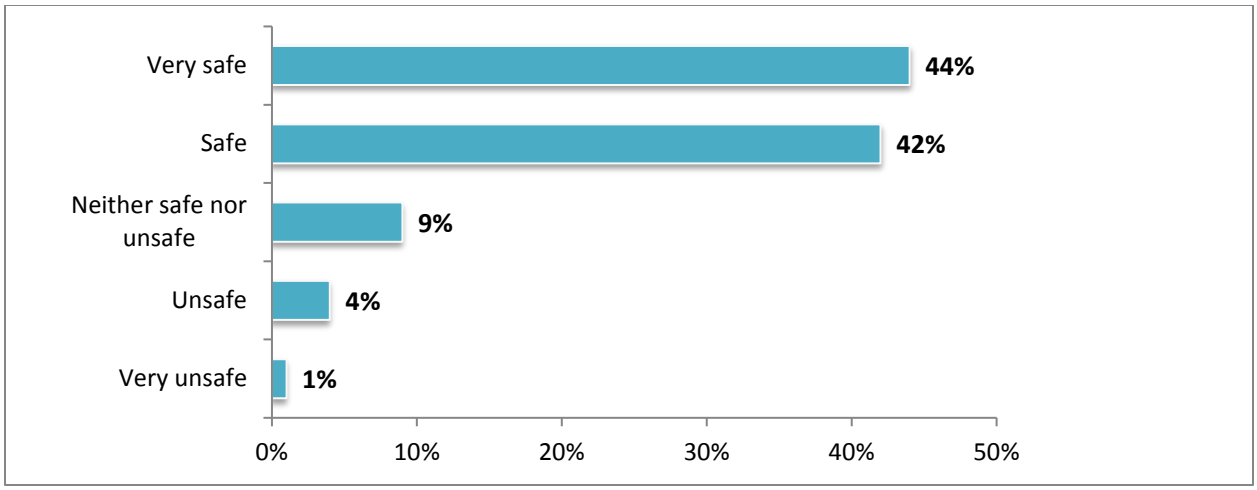
*The percentages are based on the total number of respondents who selected at least one of the answer choices. Respondents could select more than one answer choice for this question or choose not to respond, so the percentages do not add up to 100 percent.

SECTION II

This section includes questions that require respondents to rate the safety of various streets and paths for bicyclists. Streets with visible bicycle lanes and paths with no expected motor traffic were rated as safe by most of the respondents. Streets which had no visible bicycle lanes or with noticeable traffic in their bicycle lanes were rated as unsafe. Figures 2.1 through 2.7 show the results for each image in more detail.

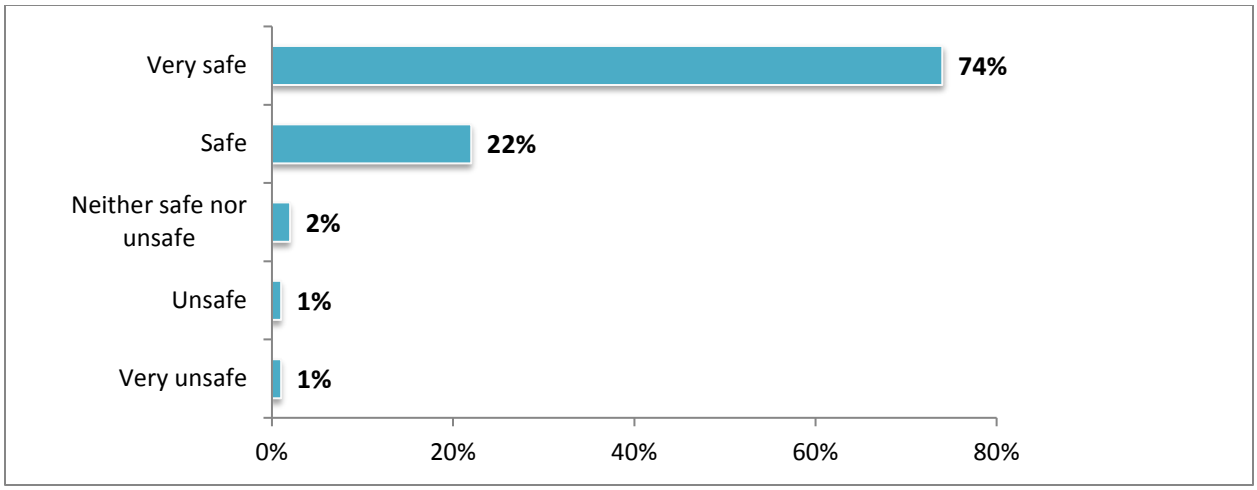
The first image shows a clearly marked bicycle lane without interference by traffic. More than four fifths of the sample (86%) rated this street as safe or very safe. Figure 2.1 has more details.

Figure 2.1 (n=1,871)



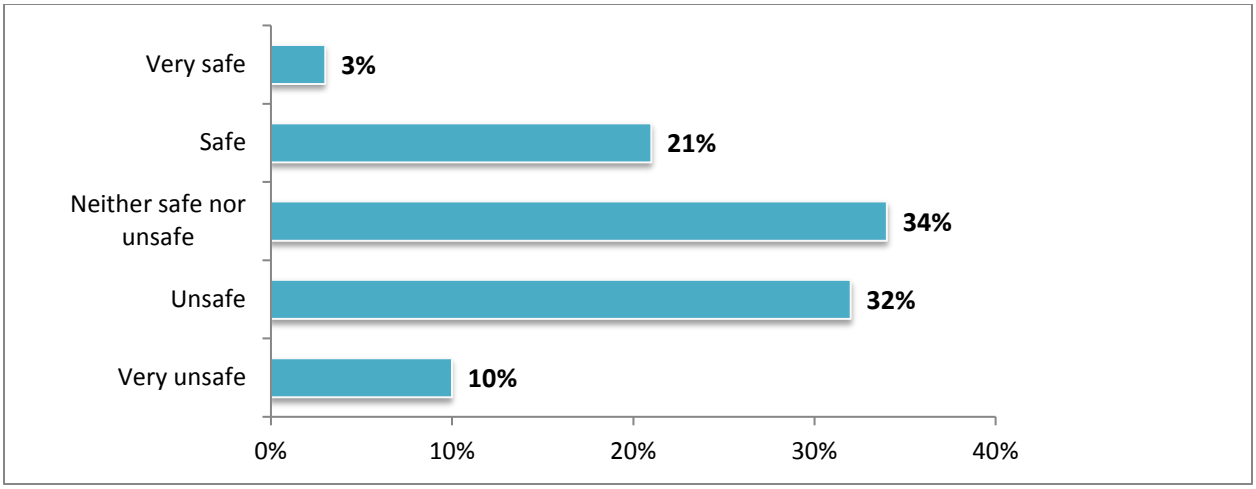
The second image depicts a bicycle path set apart from the main street. Its separation from traffic may have been why nearly three quarters of the sample (74%) rated it very safe. With the additional 22% who rated it safe, the proportion of the sample which approved of this bicycle lane is 96%. Figure 2.2 has more details.

Figure 2.2 (n=1,870)



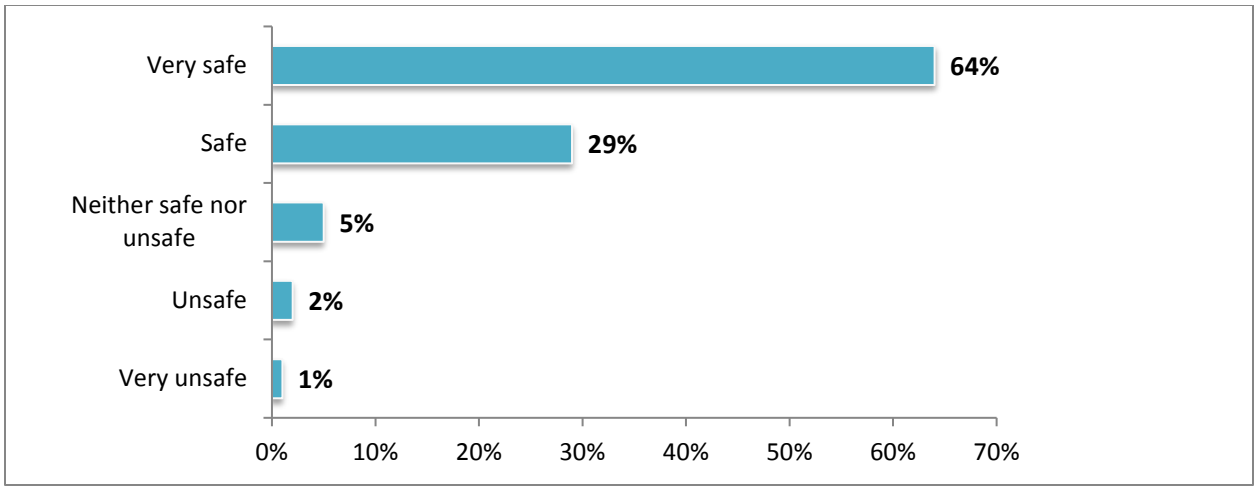
The third image shows a street without any marked bicycle lane and little traffic. Just under a quarter of the sample (24%) rated this street as very safe or safe for bicycling. About a third of the sample (34%) answered that the street was neither safe nor unsafe, and the remaining 42% rated it as very unsafe or unsafe. Figure 2.3 has more details.

Figure 2.3 (n=1,869)



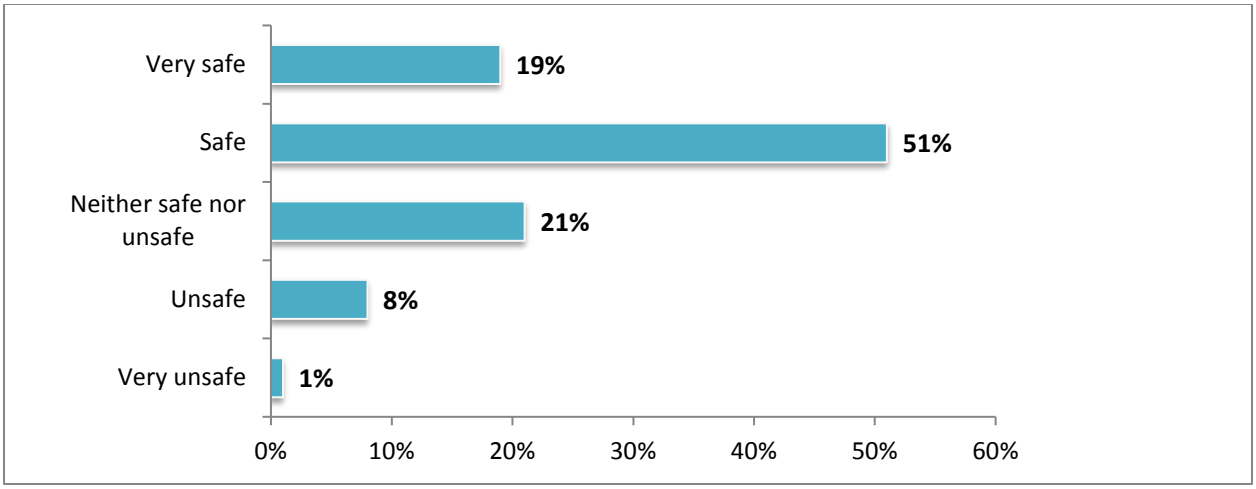
The bicycle path in the fourth image looks deserted and runs no risk of interference by automobile traffic. More than nine out of ten respondents (93%) rated this path as very safe or safe. Figure 2.4 has more details.

Figure 2.4 (n=1,869)



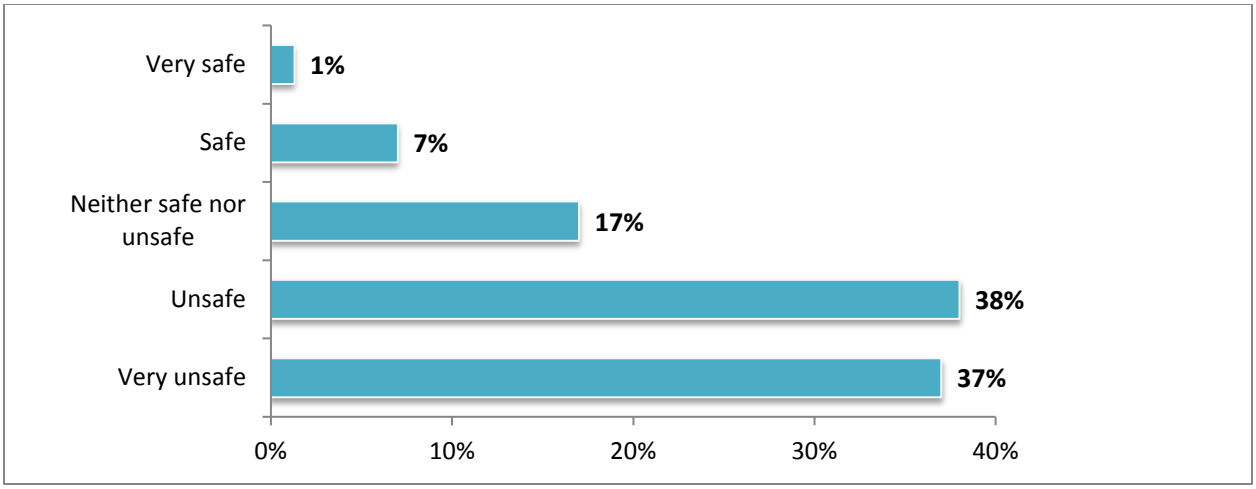
The bicycle lane in the fifth image is set apart from automobile traffic, but the border marking the lane is less distinct than the one in Figure 2.1. More than two thirds of the sample (70%) rated this lane as very safe or safe. Most of the remaining 30% were neutral about the bicycle lane's safety, with only 9% rating it as very unsafe or unsafe. Figure 2.5 has more details.

Figure 2.5 (n=1,868)



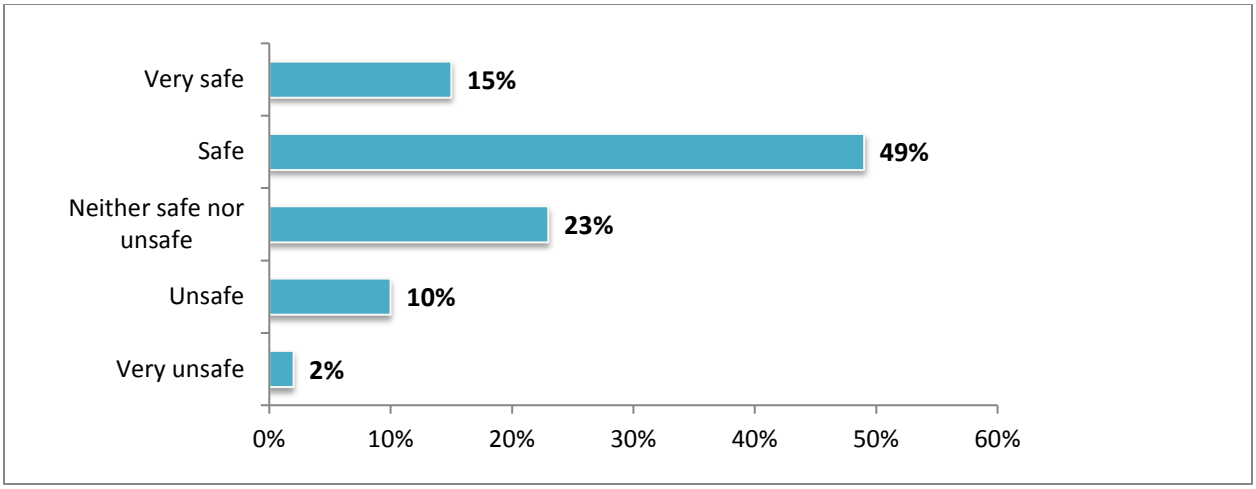
The sixth image depicts a bicycle lane with little to no border separating it from automobile traffic. In fact, cars are shown driving in the bicycle lane, even though it is being used by a bicyclist. Consequently, three quarters of the sample rated this lane as very unsafe or unsafe and only 8% of the sample considered it very safe or safe. Figure 2.6 has more details.

Figure 2.6 (n=1,864)



The seventh and final image shows a bicycle lane that is separated from traffic by a border and the use of a different color in the lane. It is on the left side of a one way street, which prevents interference from automobiles making a right turn, but it is in a busy urban environment. Nearly two thirds of the sample (64%) rated this lane as very safe or safe. About a quarter of the sample (23%) were neutral and the remaining 12% considered it very unsafe or unsafe. Figure 2.7 has additional details.

Figure 2.7 (n=1,865)



The last question in Section II asks respondents about whether additional funding should be given to initiatives to make cycling safer. Additional funding was supported by nearly the entire sample for each initiative. Table 2.1 has further results.

Table 2.1: Support for Funding Bicycling Improvement Projects

Bicycling Improvement Projects	Yes, we should increase funding	No, current funding is enough	No, we spend too much on bicycles
More bicycle lanes along roads (n=1,818)	87%	12%	2%
More protected bicycle paths along roads (n=1,829)	89%	10%	1%
More off-road trails for bicycles (n=1,797)	75%	24%	2%

SECTION III

This section asked respondents questions about their positions on various issues. Question 21 included statements about safety and attitude toward risk. Table 3.1 has more detailed results. Nearly the entire sample agreed that putting safety first was important (89%), that wearing a helmet was essential for bicyclists (79%), and that physical activity was enjoyable (95%). However, a sizeable minority of 43% agreed that they viewed risks as a challenge.

Table 3.1: Agreement with Statements

Statements	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
"Safety first" (n=1,841)	58%	31%	8%	2%	<1%
It is essential to wear a bicycle helmet when bicycling (n=1,845)	60%	19%	12%	6%	3%
I do not take risks with my health (n=1,840)	27%	37%	21%	13%	3%
I enjoy physical activity (n=1,838)	76%	19%	3%	1%	<1%
I prefer to avoid risky activities (n=1,843)	20%	35%	23%	17%	5%
I really dislike not knowing what is going to happen (n=1,842)	25%	31%	29%	11%	5%
I usually view risks as a challenge (n=1,843)	10%	33%	27%	18%	12%

Questions 22 and 23 ask the respondents to rate their agreement or disagreement with statements geared towards assessing social networks and political beliefs. Table 3.2 shows the responses to Question 22. Just 50% of the respondents agreed that most people they knew thought that traveling by bicycle for most trips was a good thing. Most respondents (68%) indicated familiarity with their neighbors and nearly two thirds (65%) agreed that their neighborhood provided a sense of community, but only 30% of the sample agreed that most of their friends lived in their community. Regarding social/political statements, 63% of the sample agreed that equitable distribution of wealth was beneficial to society, and only 15% agreed that societal problems were caused by the decline of the traditional family.

Table 3.2: Agreement with Statements

Statements	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Many people I know think that using a bicycle for most trips is a good thing (n=1,810)	18%	32%	30%	15%	5%
Living in my neighborhood gives me a sense of community (n=1,811)	26%	39%	22%	9%	4%
I know my neighbors (n=1,814)	24%	44%	15%	13%	4%
Most of my friends live in my community (n=1,814)	10%	20%	23%	28%	19%
Our society would be better off if the distribution of wealth was more equal (n=1,807)	36%	27%	21%	8%	8%
A lot of problems in our society come from the decline of the traditional family, where the man works and the woman stays home (n=1,810)	6%	9%	21%	14%	50%

Table 3.3 shows the responses to Question 23 of the survey. A clear majority of the sample agreed with each of the statements, with the exception of the statement about government interference with everyday life. The most agreed upon statement was about concern with environmental problems, with 90% either strongly or somewhat agreeing. Two other statements were agreed upon by over four fifths of the sample: the one about wanting to travel by bicycle more (85% agreeing) and the one about discrimination against minorities still being a serious problem (82%). Around two thirds of the sample (67%) agreed that successful businesspeople had the right to enjoy their wealth as they saw fit. More than half of the sample (55%) agreed that too many people expect society to do things for them that they should be doing for themselves. The only statement with less than majority agreement, which concerned excessive government interference, had only 37% agreement.

Table 3.3 Agreement with Statements

Statements	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
Discrimination against minorities is still a very serious problem in our country (n=1,776)	56%	26%	11%	4%	3%
The government interferes far too much in our everyday lives (n=1,779)	16%	21%	34%	20%	10%
I feel that people who are successful in business have a right to enjoy their wealth as they see fit (n=1,776)	28%	39%	21%	9%	3%
Too many people expect society to do things for them that they should be doing for themselves (n=1,776)	27%	28%	23%	14%	8%
I am concerned about environmental problems (n=1,779)	62%	28%	8%	1%	1%
I would like to travel by bicycle more than I do now (n=1,787)	53%	32%	11%	2%	2%

Question 24 asks respondents about whether they used a bicycle at different stages of their lives. As Table 3.4 shows, most respondents continued bicycling after all applicable milestones in their lives, with agreement totals ranging from 76% to 83%. The exception to this rule was the statement about bicycling after having children; just under half of the respondents (48%) confirmed that they continued bicycling, and an equal proportion answered that this milestone did not apply to them.

Table 3.4

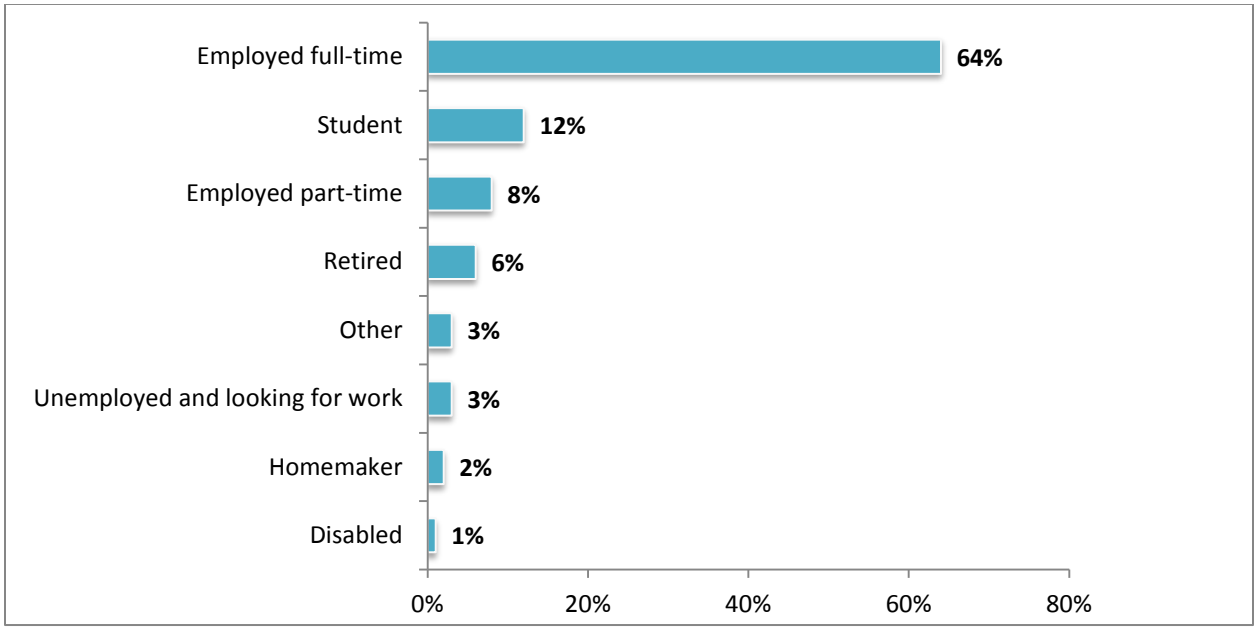
Statements	Yes	No	Not applicable
Did you bicycle during the time you were in High School (n=1,780)	77%	22%	2%
Did you bicycle after you moved away from your parent's home (n=1,779)	81%	10%	9%
Did you bicycle after you got your driver's license(n=1,779)	83%	11%	6%
Did you bicycle after you began your first full-time job(n=1,778)	76%	15%	9%
Did you bicycle after you had children (n=1,775)	48%	5%	48%

SECTION IV

The questions in this section ask respondents to provide demographic information.

Question 25 concerns employment status. Nearly three quarters of the sample were employed full or part time (72%). An additional twelve percent were students, and the rest were retired, unemployed, or not in the workforce for other reasons. Figure 4.1 has more details.

Figure 4.1: Employment Status (n=1,787)



Respondents who indicated they were employed or students were asked a follow up question, Question 4.25a, about whether their place of employment or education had facilities for bicyclists. Less than half of the sample indicated that secure parking or shower facilities were available, but secure parking was the more popular of the two amenities with 45% claiming parking was available. Table 4.1 has more details about the responses.

Table 4.1: Bicycle Facilities

Statements	Yes	No	Don't know
Secure bicycle parking (n=1,484)	45%	48%	7%
Shower facilities (n=1,462)	30%	63%	7%

Question 26 asked respondents how many adults and children live with the respondent. Nearly three quarters of the sample (73%) indicated they were the only adult or that they lived with one other adult.

More than six out of every ten respondents indicated that they did not live with any children. Figures 4.2a and 4.2b have more details about the responses.

Figure 4.2a: Number of Adults (n=1,733)

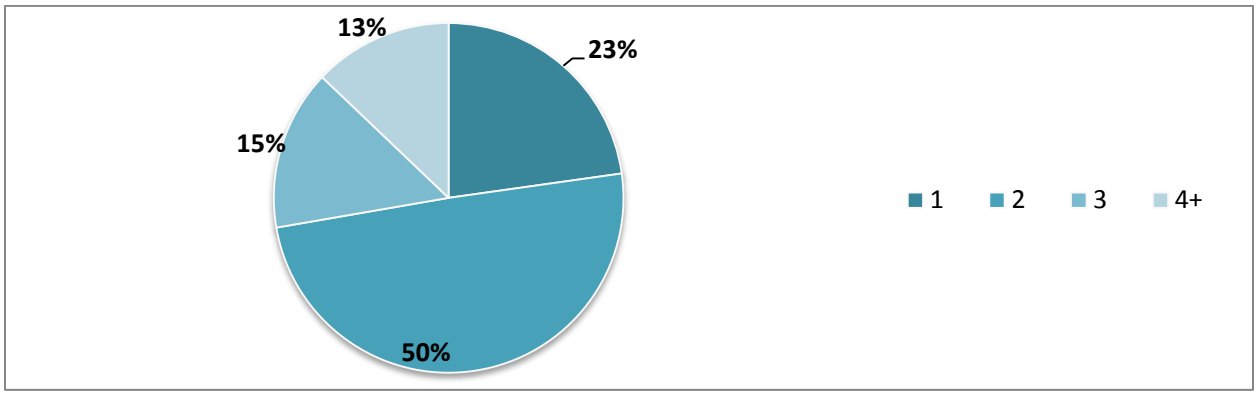
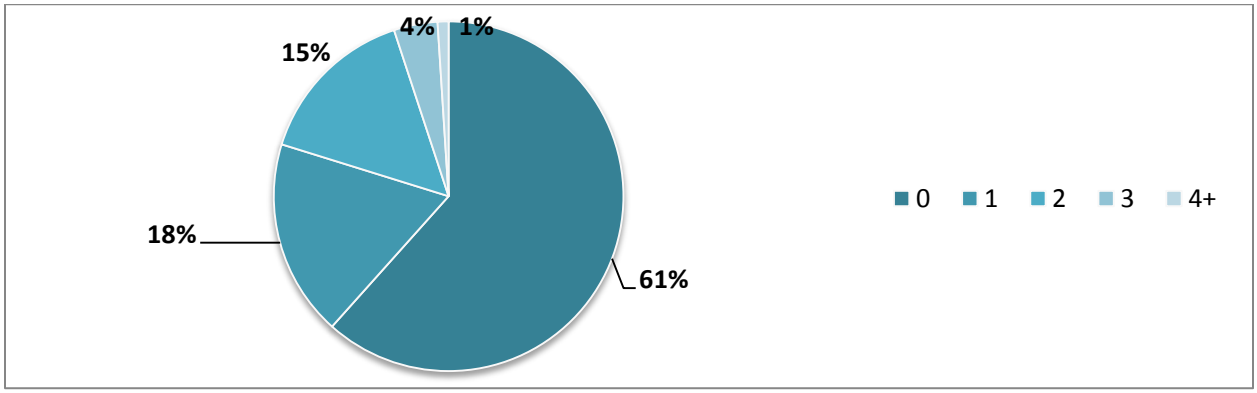
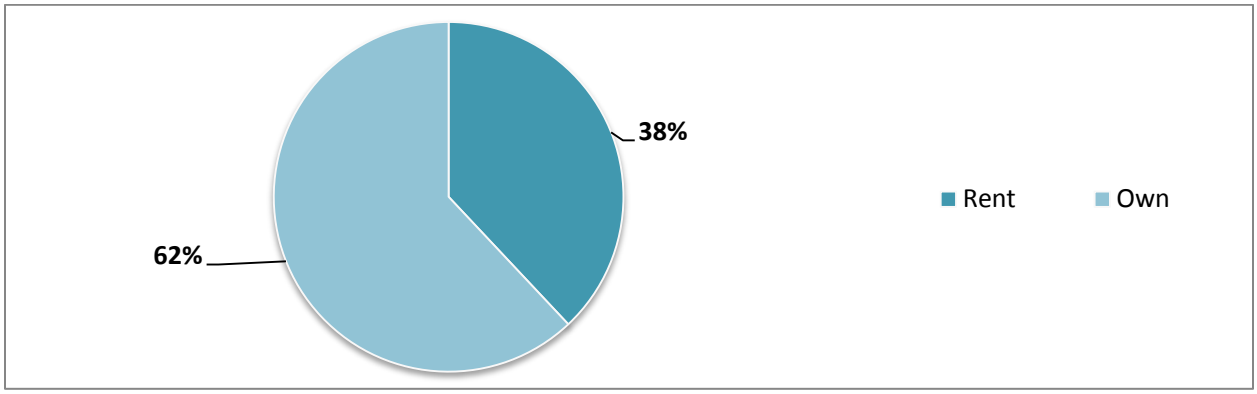


Figure 4.2b: Number of children (n=1,406)



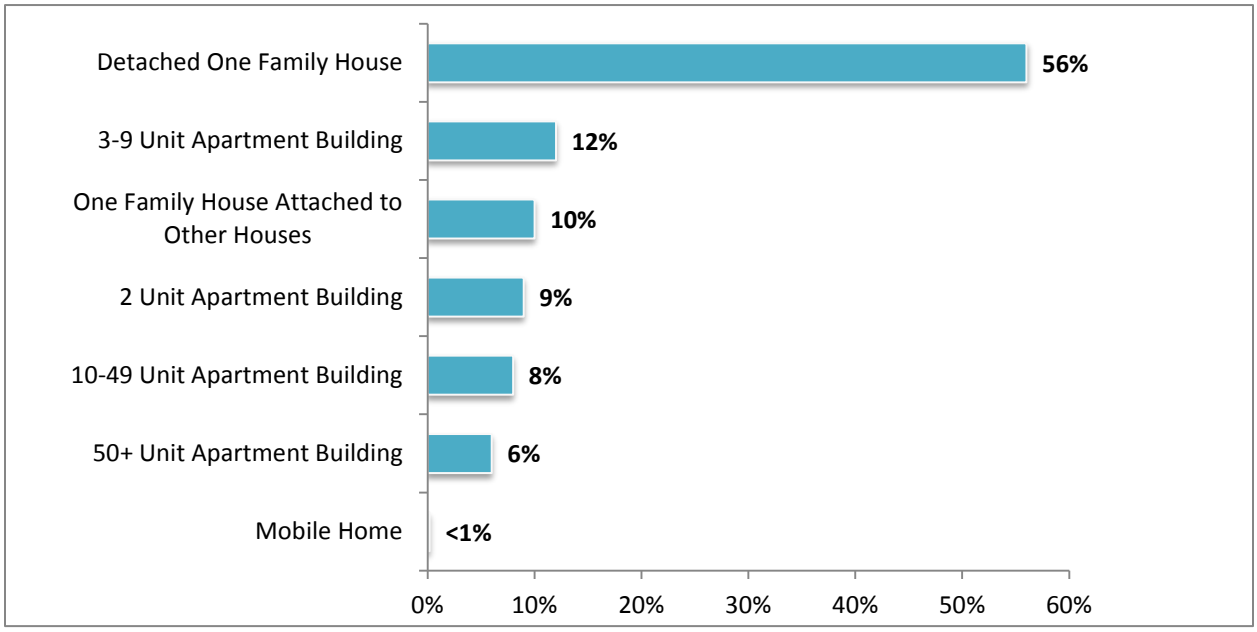
The next three questions were about the respondent's residence. Question 27 asked if respondents rent or own their primary residence. As Figure 4.3 shows, more than 60% of the sample indicated that they owned their residence.

Figure 4.3: Rent or Own (n=1,761)



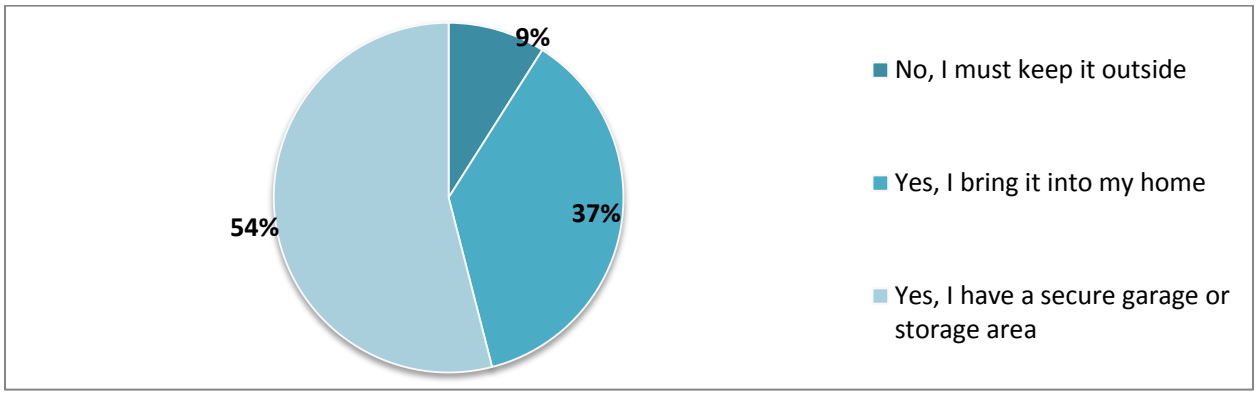
Question 28 asked respondents to describe the building they live in. Figure 4.4 shows that two thirds (66%) of the respondents live in a house, either attached or detached from other houses. Nearly all of the remaining one third live in an apartment building.

Figure 4.4: Residence Type (n=1,770)



Question 29 asked respondents if they would be able to store a bicycle in a protected area in their homes. More than nine in ten respondents (91%) indicated that they had the space to store a bicycle in their home or in a separate storage area, as Figure 4.5 shows.

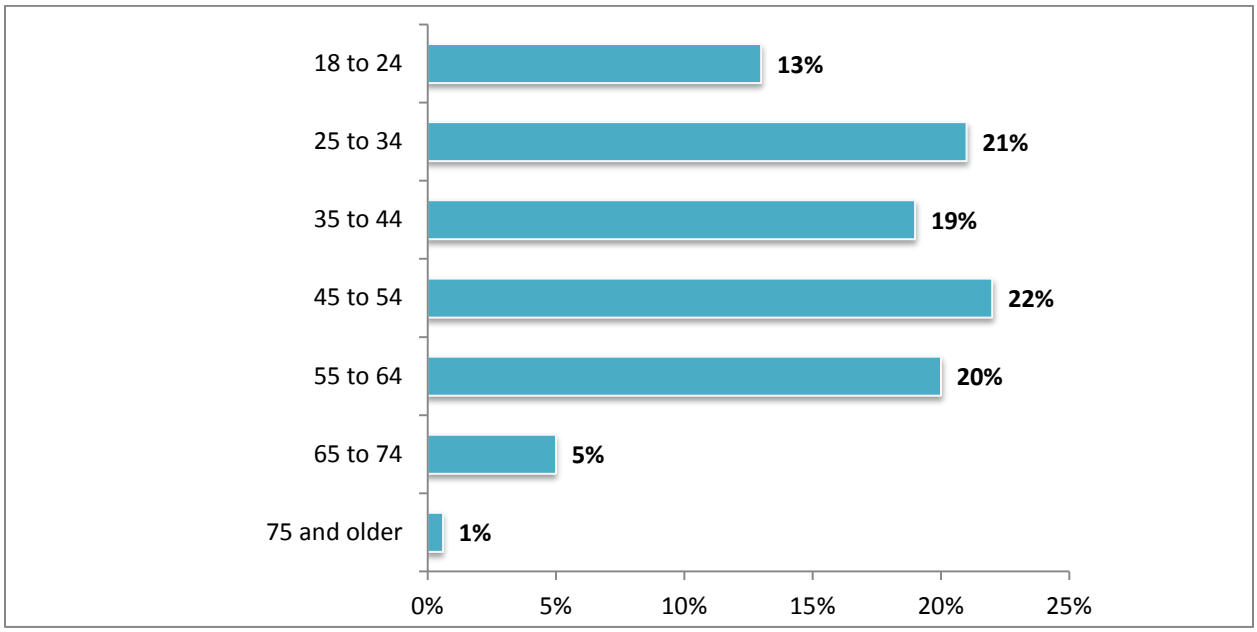
Figure 4.5: Bicycle Storage (n=1,768)



Questions 30 and 30a asked respondents about their age. First, respondents were asked to describe their birth year. Respondents who chose not to divulge their birth year were given a follow up question to determine their general age group. Totals by age group based on responses to both of these questions are combined in Figure 4.6. Most of the age groups from 25 to 64 are represented at nearly the same level, around 20% for each. Table 4.2 compares age groups by the promotional materials used

to access the survey. The intercept card or paper survey group had the highest proportion of younger respondents, but respondents aged from 25 to 44 were better represented in the bicycle hanger group.

Figure 4.6: Age Group (n=1,757)*



*1,570 respondents provided their birth year and 187 respondents selected an age group instead.

Table 4.2: Age Group by Survey Promotion

Age Group	Facebook (n=774)	Intercept Card or Paper Survey (n=674)	Bicycle Hangers (n=309)
18 to 24	8%	18%	13%
25 to 34	19%	20%	28%
35 to 44	18%	17%	25%
45 to 54	26%	20%	16%
55 to 64	23%	19%	14%
65 to 74	5%	6%	3%
75 and older	1%	1%	1%

Question 31 asks about education level. Almost nine out of ten respondents had attended at least some college (89%), and nearly three quarters of the respondents (74%) had earned an associate's degree or higher. Figure 4.7 has additional details, and Table 4.3 has data comparing the results by survey promotion. As Table 4.3 shows, respondents who used the Facebook ads or bicycle hangers to access the survey had higher proportions of undergraduate and graduate degree recipients, and respondents who used intercept cards or paper surveys had a higher proportion of high school graduates.

Figure 4.7 Education Level (n=1,772)

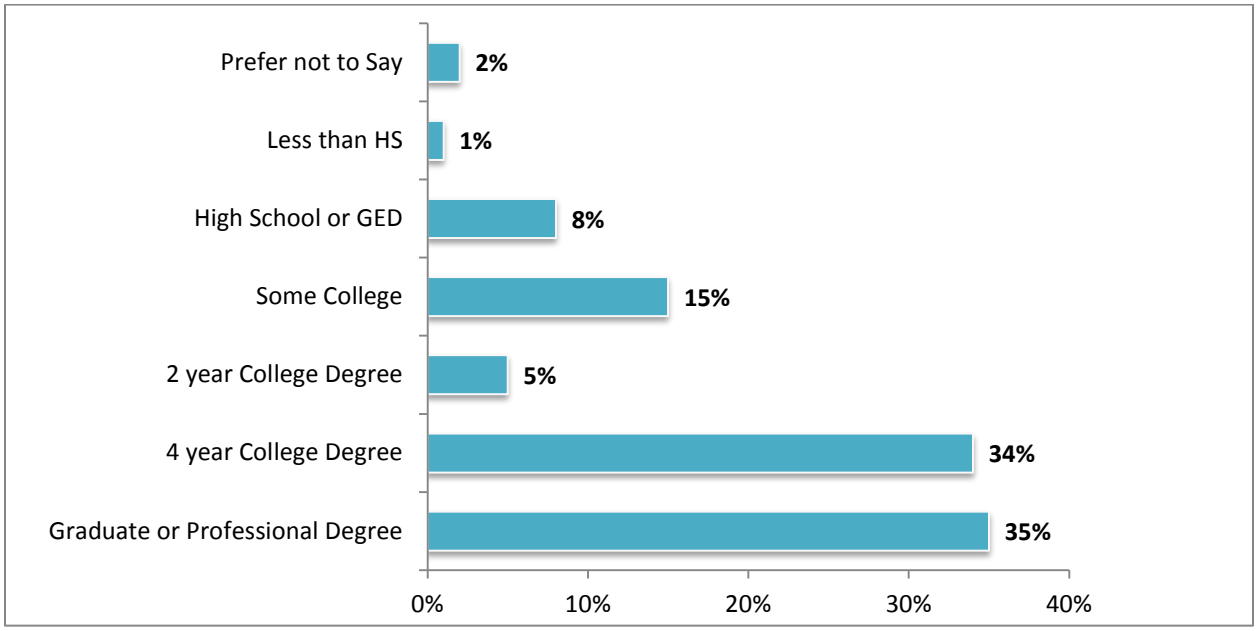
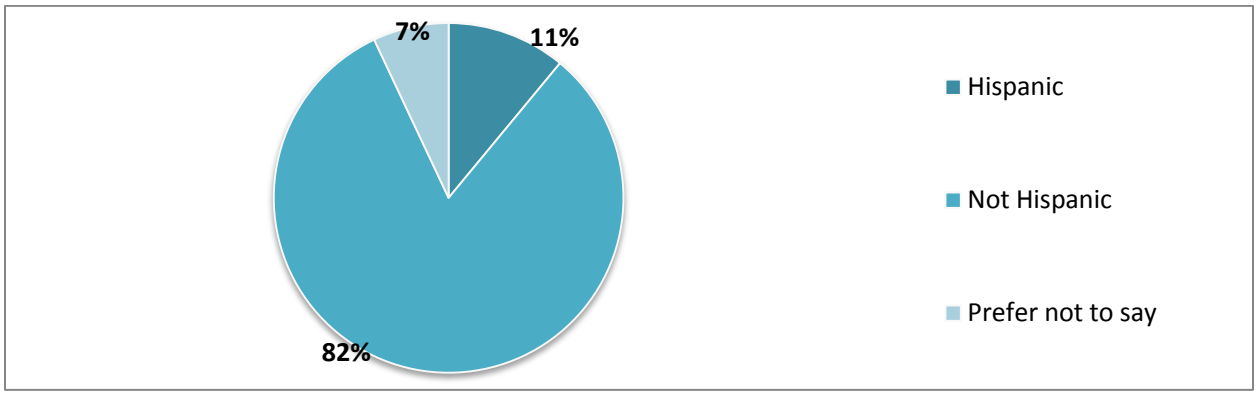


Table 4.3: Education Level by Survey Promotion

Education Level	Facebook (n=776)	Intercept Card or Paper Survey (n=686)	Bicycle Hangers (n=310)
Prefer not to say	2%	3%	2%
Less than High School	<1%	1%	1%
High School or GED	5%	12%	6%
Some College	15%	17%	12%
Two Year College Degree	5%	6%	4%
Four Year College Degree	36%	29%	35%
Graduate or Professional Degree	36%	31%	40%

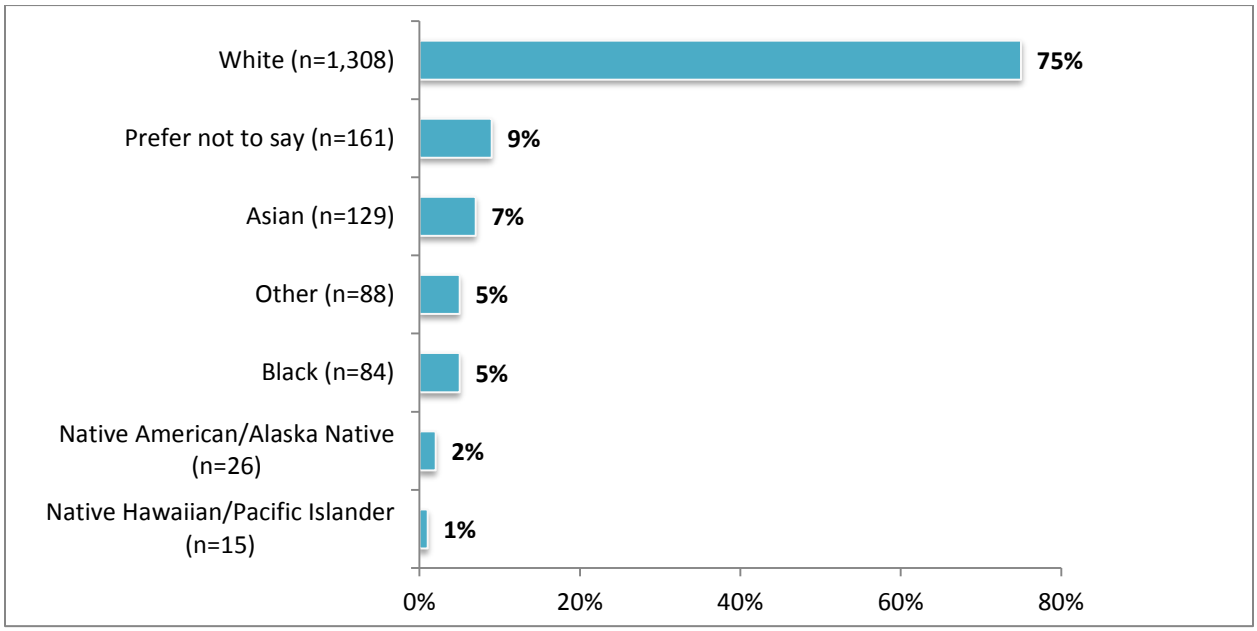
Questions 32 and 33 ask respondents to describe their race/ethnicity. Figure 4.8 shows that more than four fifths of the sample (82%) is not Hispanic.

Figure 4.8: Hispanic Ethnicity (n=1,750)



As Figure 4.9 shows, three quarters of the sample (75%) selected White as their race.

Figure 4.9: Race (n=1,751)*

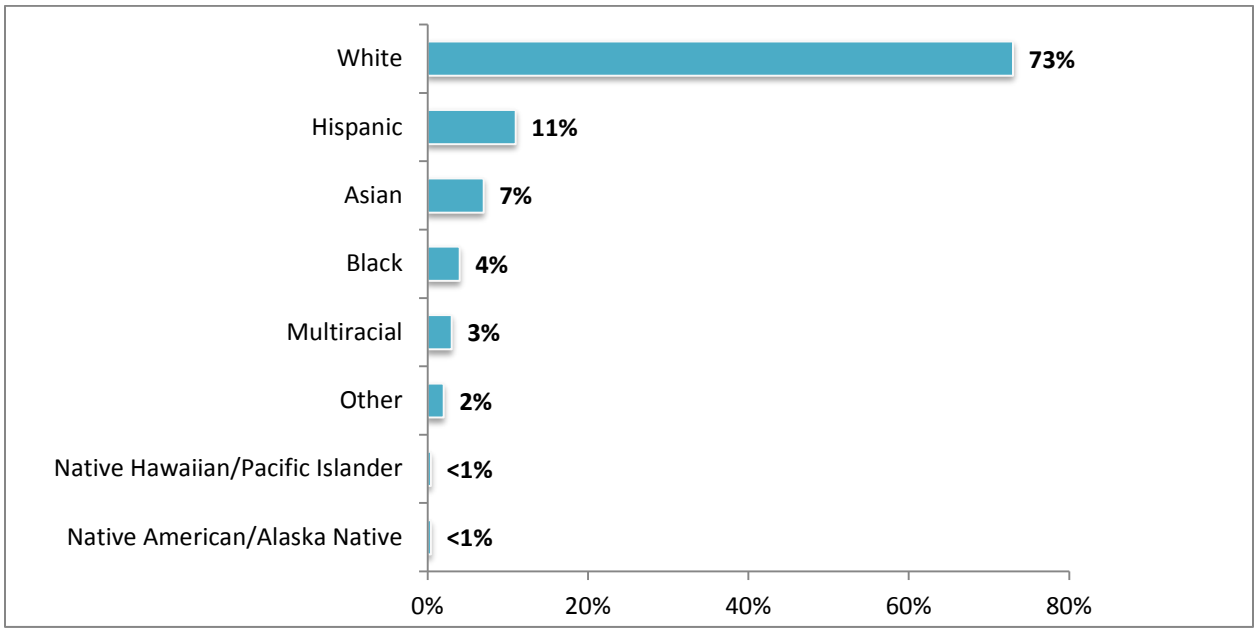


* The percentages are based on the total number of respondents who selected at least one of the answer choices. Respondents could select more than one answer choice for this question or choose not to respond, so the percentages do not add up to 100 percent.

Figure 4.9a shows the race and ethnicity variables combined into a single field. Respondents who selected Hispanic origin for Question 32 are placed in the Hispanic category in this chart, regardless of which race they selected in Question 33. The Multiracial category includes all respondents who selected two or more choices for Question 33. The results show that most respondents who answered the

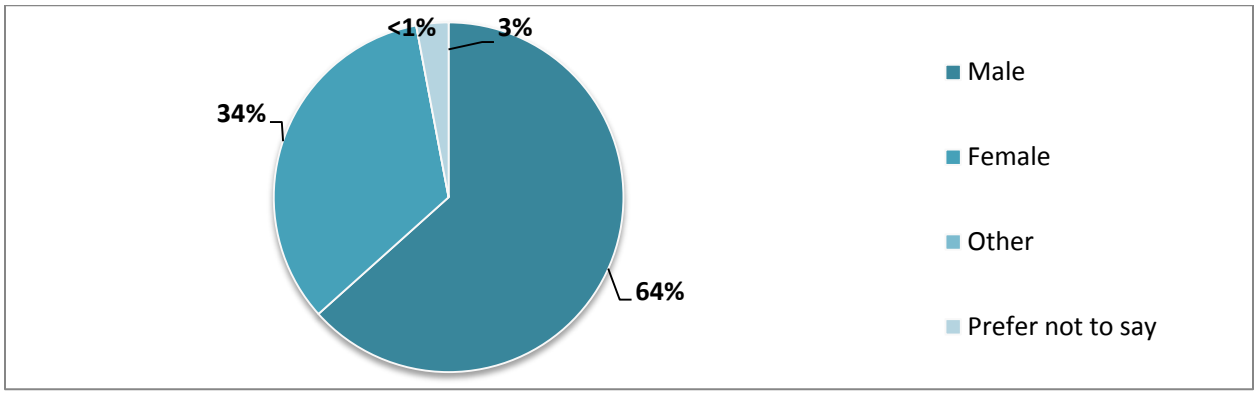
race/ethnicity questions are White non-Hispanic (73%). Hispanic respondents make up the second largest group (11%).

Figure 4.9a: Race/Ethnicity (n=1,633)



Question 34 asks about gender. As Figure 4.10 shows, nearly two thirds of the sample (64%) identifies as male.

Figure 4.10: Gender (n=1,737)



Question 35 asks about income. As Figure 4.11 shows, just over half of the sample (51%) has a total household income between $25,000 and $150,000. Nearly a quarter of the sample (23%) has a higher income, and the rest have a lower income or did not specify an income range. Table 4.4 shows responses to the income question by survey promotion. Generally, the sample which used intercept cards and paper surveys has a higher proportion of lower income respondents. The Facebook sample has a lower proportion of respondents who did not know their income. The anonymous nature of the Facebook survey may have helped respondents feel more comfortable with disclosing their income.

Figure 4.11: Income (n=1,763)

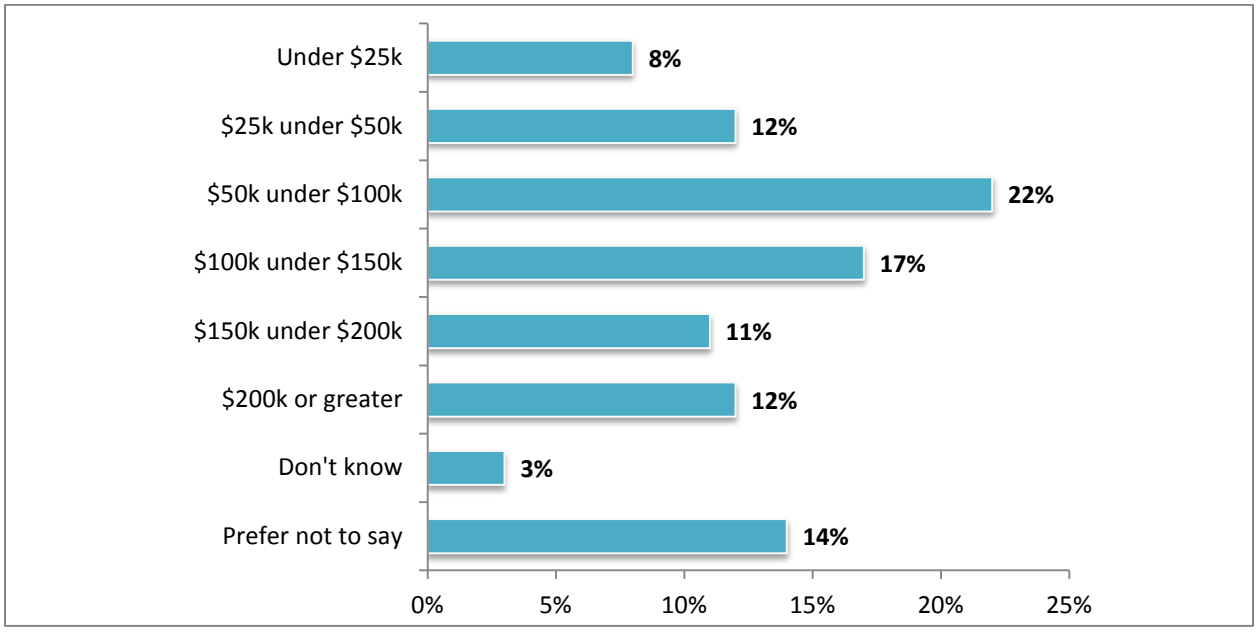
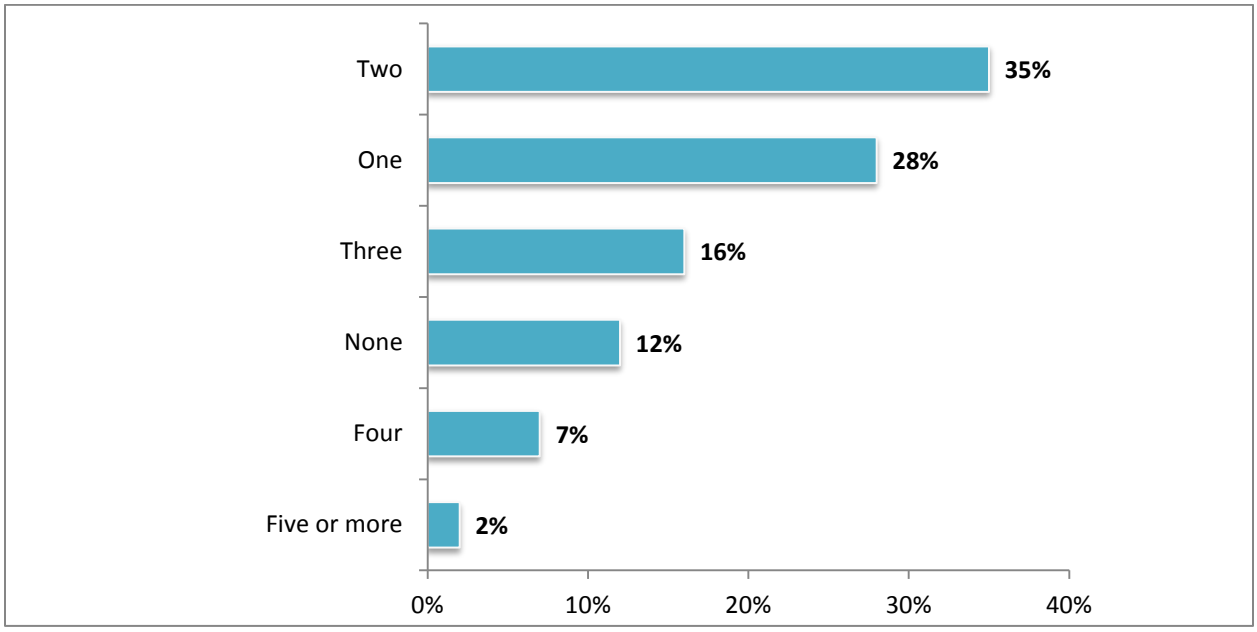


Table 4.4: Income by Survey Promotion

Income	Facebook (n=776)	Intercept Card or Paper Survey (n=680)	Bicycle Hangers (n=307)
Under $25K	4%	12%	8%
$25K to under $50K	12%	13%	11%
$50K to under $100K	23%	21%	18%
$100K to under $150K	21%	13%	17%
$150K to under $200K	12%	8%	15%
$200K or greater	13%	12%	14%
Don't know	2%	4%	4%
Prefer not to say	14%	16%	13%

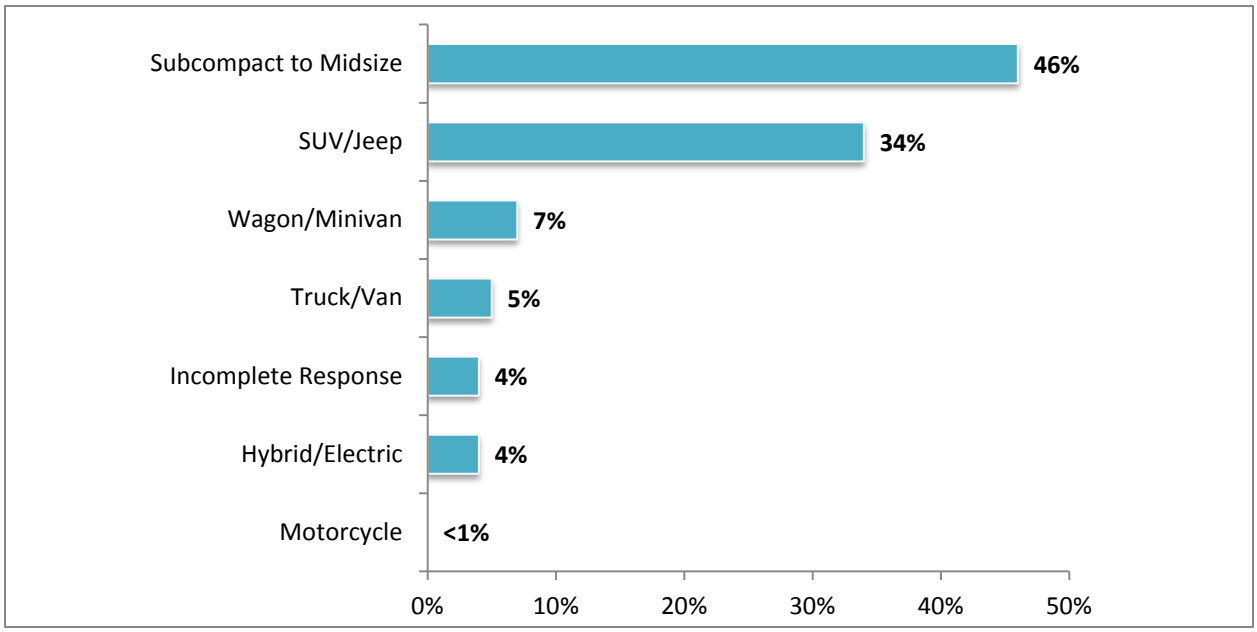
Finally, Questions 36 and 37 asked respondents about their vehicle ownership. Almost two thirds of the respondents (63%) indicated that they had one or two vehicles. Only 12% of the sample indicated that they did not own any vehicles.

Figure 4.12: Number of Vehicles Owned by Household (n=1,765)



The final survey question asked respondents to provide the make, model, and year of their primary vehicle. The vehicle models were assigned to several broad categories. Nearly half of the respondents (46%) used a primary vehicle which could be categorized as a subcompact to midsize car, including coupes, sedans, hatchbacks, luxury cars, and sports cars. More than a third of the respondents (34%) used an SUV or Jeep. Another 16% used a wagon or minivan; a hybrid or electric vehicle; a motorcycle; or a truck or van. Four percent of the sample provided an incomplete response.

Figure 4.13: Primary Vehicle Type (n=1,405)



PART III

RESPONSE SUMMARY

Several conclusions can be drawn from the results of the survey. Section I indicates that most of the survey sample own a working bicycle and have bicycled recently. The main purpose for bicycling was recreation or exercise; most of the sample indicated they participated in these activities at least once a week. Most of the respondents did not select any restrictions on their bicycling due to darkness or other factors. However, those who did not use a bicycle in the past year indicated that traffic conditions and not having time for bicycling were the main reasons for their reduction in bicycle use. Traffic conditions were also listed by regular bicyclists as a key reason for not bicycling.

In Section II, most of the pictures of streets and paths were rated as safe by respondents. The ones with the highest safety ratings had clearly marked bicycle lanes or seemed unlikely to have regular traffic. On the other hand, streets with no marked bicycle lane or traffic in the bicycle lane were rated as unsafe.

For Section III, many of the respondents were strongly interested in physical activity and safety, but a sizeable minority indicated that they enjoyed taking risks. Respondents also indicated that they knew their neighbors, but did not indicate that their neighbors were their best friends. Regarding social issues, many respondents indicated that they were concerned with environmental problems and discrimination against minorities, and most did not believe that the decline in the traditional household was a cause for concern. Many respondents indicated that they bicycled throughout various milestones in their lives.

According to Section IV results, most respondents were employed, lived in a house they owned, and did not have children. Most of the sample had at least some postsecondary education, but a range of income levels were represented. The sample was also mostly male and White.

Due to the use of individual passwords, survey respondents could be categorized by where the promotional materials they used were distributed. Materials distributed in larger urban centers had the highest frequencies of returns. However, some smaller areas had a higher rate of return. The tables below shows this difference in promotional material distribution and response. Additionally, respondents could choose to provide their address in order to be entered into a raffle for a chance to win a gift card. Appendix E shows the locations of all survey respondents who provided this information.

Largest Number of Intercept Cards Used to Access the Survey

Location	Number Distributed	Number Used	Percent Used
Jersey City	1,514	77	5%
New Brunswick	1,143	61	5%
Newark	1,873	59	3%
Hoboken	1,050	48	5%
Asbury Park	393	44	11%
Princeton	385	44	11%
Camden	491	28	6%
Metuchen	232	18	8%
Elizabeth	514	17	3%
Morristown	309	15	5%

Largest Number of Bicycle Hangers Used to Access the Survey

Location	Number Distributed	Number Used	Percent Used
Jersey City	592	77	13%
Hoboken	540	47	9%
New Brunswick	277	36	13%
Montclair	126	29	23%
Cranford	63	23	36%
Princeton	337	14	4%
Westfield	106	13	12%
Camden	38	11	29%
Metuchen	34	9	26%
Newark	151	9	6%

Largest Number of Intercept Cards Distributed

Location	Number Distributed	Date Distributed
Newark	1,873	10/14
Jersey City	1,514	10/7
New Brunswick	1,143	9/16, 10/26, 11/14
Hoboken	1,050	11/4
Passaic	550	10/19
Elizabeth	514	11/2
Atlantic City	491	10/28
Camden	491	11/8
West New York	480	11/4
Trenton	424	10/11

Largest Number of Bicycle Hangers Distributed

Location	Number Distributed	Date Distributed
Jersey City	592	10/7
Hoboken	540	11/4
Princeton	337	9/29
New Brunswick	277	9/16, 11/14
Newark	151	10/14
Montclair	126	11/1
Asbury Park	117	9/24
Westfield	106	10/5
Belmar	94	9/24
Bradley Beach	70	9/24

FUTURE RESEARCH

The data collected allows ample opportunity for future research. We will be conducting a number of analyses of the data over the next few months with the aim of submitting research papers to the Annual Meeting of the Transportation Research Board, and other venues. This work will be overseen and led by Professor Bob Noland, Professor Michael Smart, and Professor Kelcie Ralph.

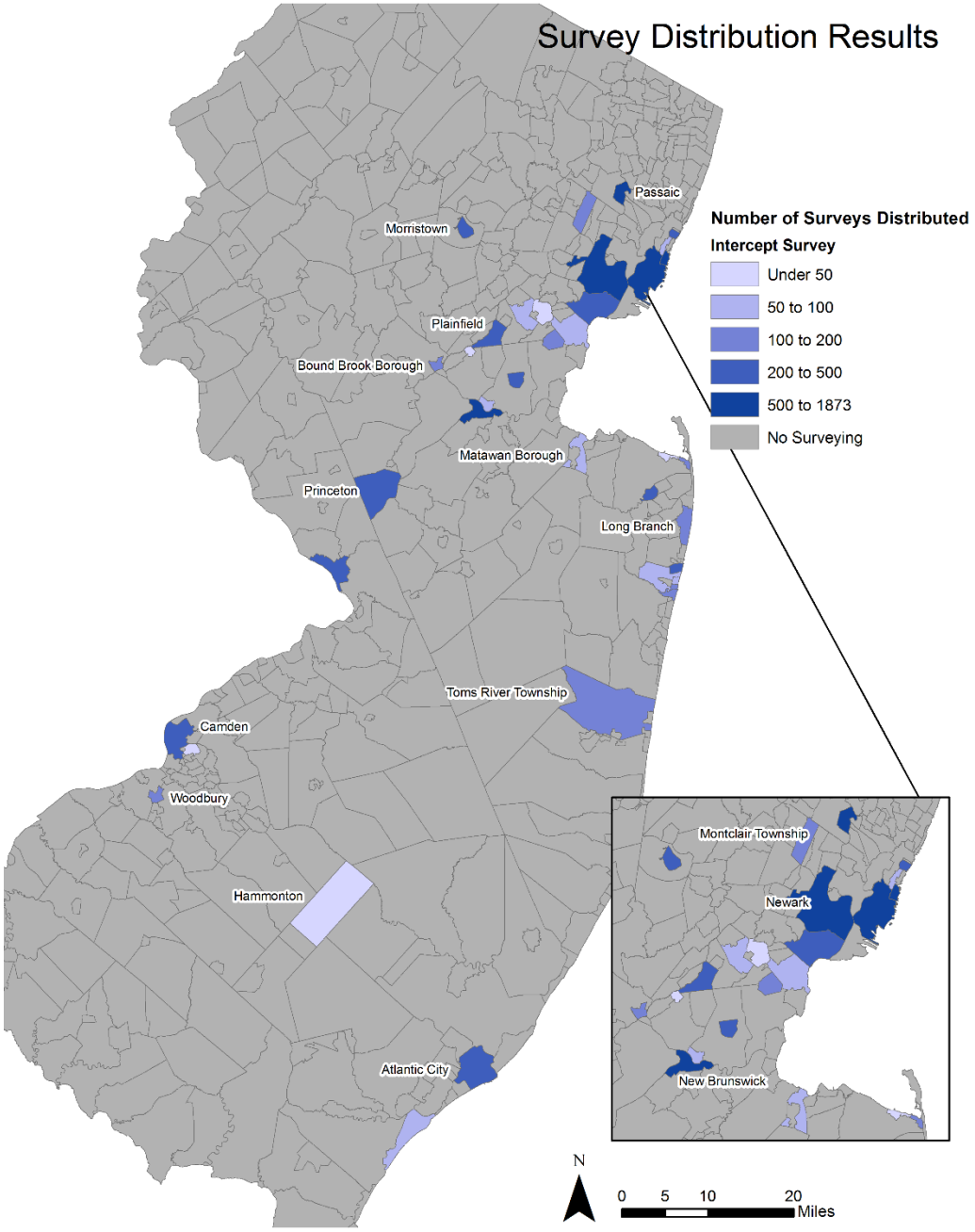
Among the topics that will be explored is an examination of how social networks affect utilitarian bicycling behavior. Are you more likely to use a bicycle if your friends and family do, or if you are more connected to your local neighborhood? This type of information can be useful for devising educational and promotion strategies.

A second line of research will investigate how cycling behavior changes at different points in one's life. Do respondents to the survey report changes when they graduate from school, get a job, have a child, etc.? And how are these changes linked to their demographics and income level and where they are currently living?

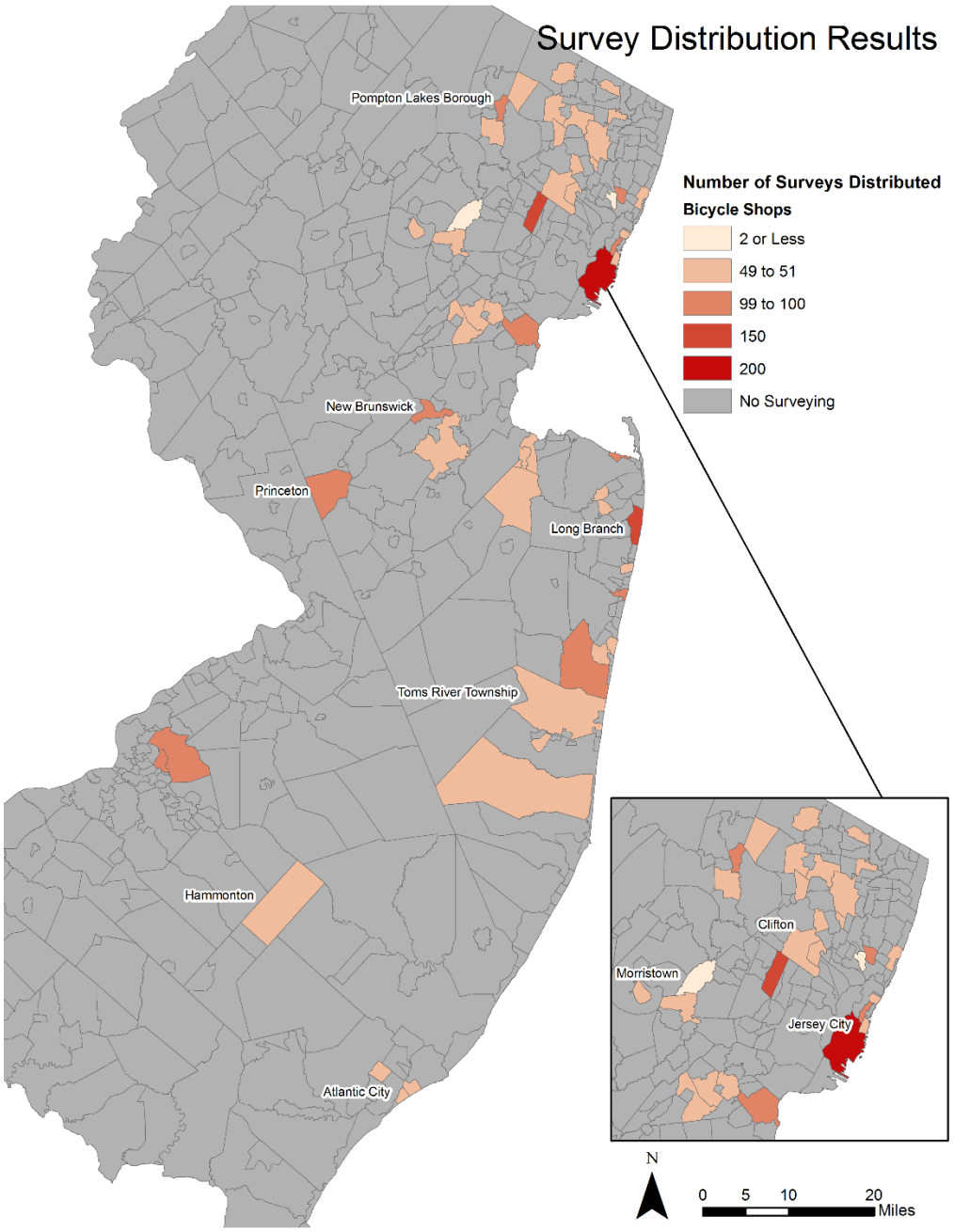
Further work will also examine some of the underlying preferences for different cycling infrastructure and link this to risk attitudes and political preferences, especially the desire to fund additional infrastructure. All data will also be geocoded (based on respondent addresses when available) to examine local infrastructure and how this affects cycling.

Appendix

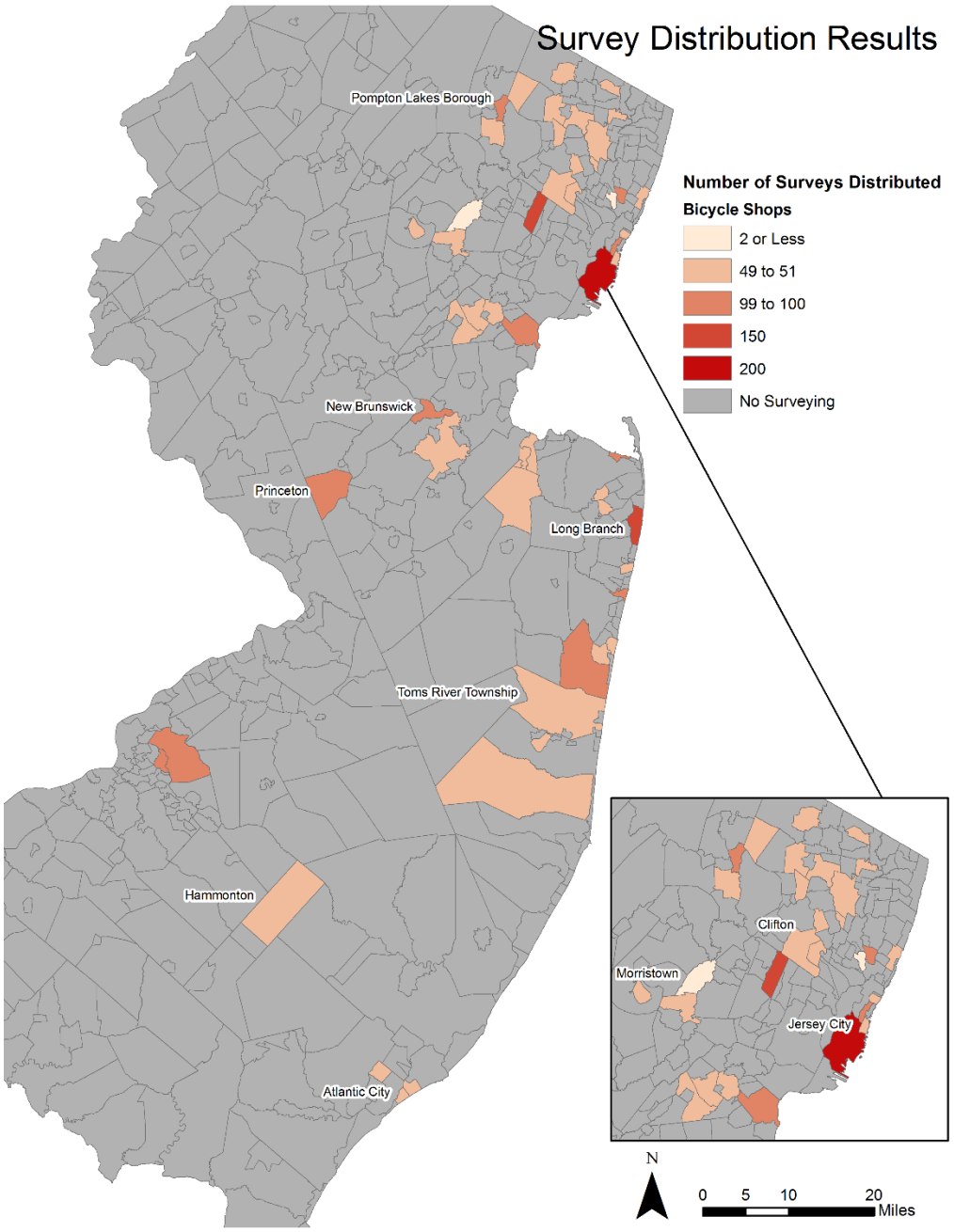
Appendix A: Intercept Card Distribution Locations



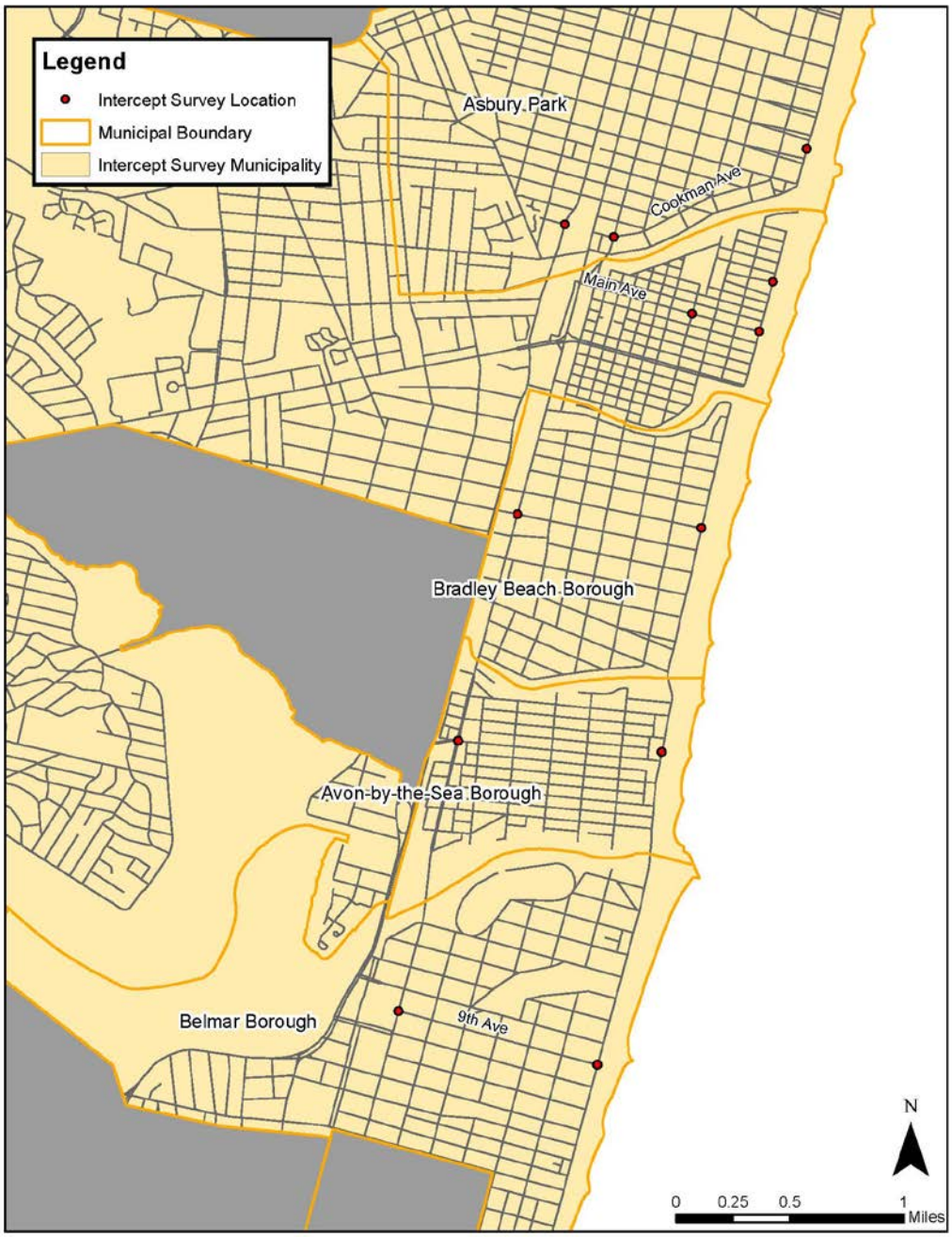
Appendix B: Bicycle Hanger Distribution Locations



Appendix C: Bicycle Shops Where Surveys Were Distributed



Appendix D: Intersections where flyers were distributed in shore towns



Appendix E: Map showing residential address for survey respondents who provided that information