# Perceptions and Uses of Ford GoBikes by U.C. Berkeley Students

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## ABSTRACT

Community perspectives are invaluable when it comes to city planning. As global environmental stressors are threatening resources and shared commons, inhabitable space will reduce and city planners will have to start implementing more sustainable practices. Therefore, city planners and government officials should enlist the help of residents when introducing sustainable projects. Ford GoBikes were installed in five Bay Area cities with little to no community consent. This bike-sharing program had the goals of creating a healthier social and physical environment by encouraging bicycling for exercise, as well as reducing carbon emissions traditional fossil fuel burning vehicles emit. The distribution of docked Ford GoBikes in Berkeley aims to cater to the college town's permanent residents and student body population. Being a college town, the population of Berkeley changes by the season, and therefore affects the perceptions and uses of the Ford GoBikes as new residents move in and old residents leave. Now that the Ford GoBikes are established, however, their impact on the town is well known. In this study a survey was distributed to the undergraduate population of U.C. Berkeley to discover the true perceptions and use practices of the Ford GoBikes. It was discovered that there are no extreme opinions about the Ford GoBikes, but both the users and nonusers have recommendations for improvement based on impressions alone. Other college towns with a high population of students should use this method of student consultation to understand the wants and needs of the community they are servicing.

## KEYWORDS

Bike-share programs, city planning, environmental values, Likert scale survey analysis, active transportation

## INTRODUCTION

The propagation and normalization of fossil-fueled transportation since the Industrial Revolution has caused severe environmental damage, impacting air, water, and the physical landscape (Rondinelli and Berry 2000). Climate scientists and researchers are concerned about the carbon emissions that come from transportation sector. In 2017 the United States Environmental Protection Agency (EPA) concluded that the transportation sector generated the largest share of greenhouse gas emissions at 28.9% of the total (US EPA 2015). Environmental economists predict emissions from this sector will only increase due to more fossil fuel combustion, even with warnings from the Intergovernmental Panel on Climate Change (IPCC) to reduce greenhouse gas production (Banister et al. 2011, Gudmundsson and Anger 2012). Mitigating and adapting with the environmental impacts that come from carbon-emission induced climate warming will be an ongoing challenge locally, regionally, and globally. Regional efforts in the San Francisco Bay Area are leading the way in designing more sustainable transportation networks. Locally, the Alameda County Sustainability Group is working to implement new technology, policies, and partnerships to incentivize cleaner transportation to include alternative fuel vehicles and proper bicycle infrastructure (Alameda County 2019).

Cities are designed for motorized vehicles, so attempting to reconfigure an entire new transportation network is challenging in an already established area (Zuk and Chapple 2015). Cars and buses dominate the street, leaving little room for other transportation vehicles like bicycles. But recently, bicycle-sharing projects have appeared on the streets. Ford GoBike, operated by the company Motivate, is a new bike-share program that has an exclusive contract with five Bay Area cities. This docked model has over 2,600 bikes distributed over 262 stations, where anyone can create an online account and use one of the shared bicycles ("The Bay Area's bike share program | Ford GoBike" n.d.). Motivate comments that they "are committed to ensuring bike-share is equitable, accessible, and reflects the diversity of the Bay Area (Motivate 2017a). But as of right now, the distribution of Ford GoBike stations are clumped around areas such as universities and business centers. When they reach into neighborhoods, there is pushback from residents who do not want the stations near their property because they are associated with gentrification and displacement (Taylor 2017). Another reason for this discontent is due to the physical space the docks use in residential areas (Oates et al. 2017).

As bike-share programs continue to develop, their business plans must consider affordability, navigability, and most importantly the community they intend to serve. Community needs vary by location. The city of Berkeley is one of the five Bay Area cities that Motivate services. Berkeley is a college town, in which the business operations are catered to the needs of students attending the university (Gumprecht 2003). Motivate's goal is to design and distribute Ford GoBikes in areas that would presumably get the most use from the Berkeley community. The city is a majority renters at 57.1% which includes permanent individuals and students, all of whom were affected by the installation of the Ford GoBikes (Figure 1) (Towncharts 2019). The Ford GoBike stations were put in without student nor resident consultation, and to many, seemed to have appeared out of nowhere.

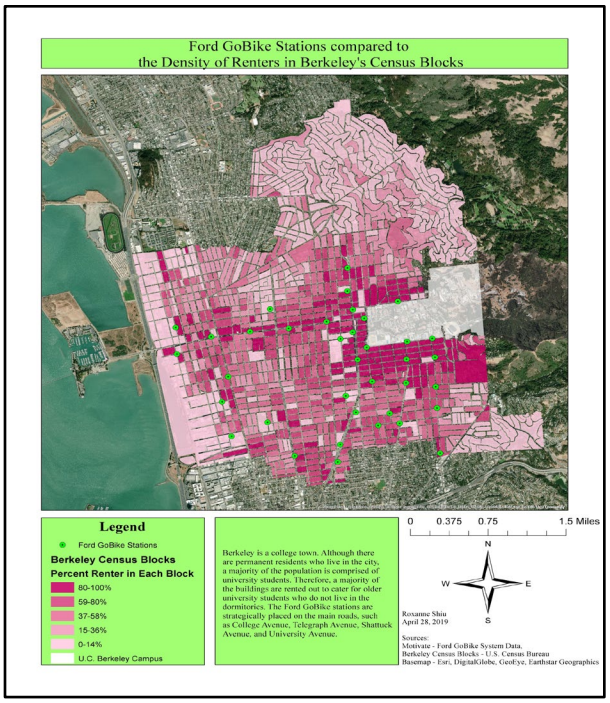



**Figure 1. Study site of Berkeley, California with Ford GoBike Stations compared to the density of renters.** Data provided by the U.S. Census Bureau, American Fact Finder. See Appendix B for full map.

The two groups, non-student residents and students, have different perspectives and therefore desires when it comes to programs such as Ford GoBikes. Community feedback on bike distribution could have benefited Motivate when they were first deciding where to install the docks, and create a more equitable network. This, however, did not happen, and just received the necessary permits from the city of Berkeley (Motivate 2017a). Instead, these flashy bicycles were offered as an alternative transportation method that had a lot of potential to help Berkeley reach

Alameda County's sustainable transportation goals, without focusing on fulfilling the needs of users and residents. Without people using the bikes, the goals of the company are irrelevant. The undergraduate population of the University of California, Berkeley, is composed of 30,853 students (Fall 2018 enrollment) distributed between 14 colleges and schools within the university (UC Regents 2018), all of whom have different values and behaviors that affect their approach to environmental and transportation decisions. Therefore, some may be aware of Motivate's introduction of a zero-emission transportation option and some may not care at all.

For Berkeley students, the Ford GoBikes will continue to be available as the stations are strategically placed along the perimeter of the campus and stretch throughout the flatter areas of the city (Motivate 2017a). For other college towns that are looking to install similar bike-sharing programs around their own university campuses, they should acknowledge student input and non-student resident input before they install the bike docks. In this study, I aimed to learn the true perceptions about Ford GoBikes around the U.C. Berkeley campus. To help answer this question, I analyzed how the distribution and accessibility of the Ford GoBike stations affected their use, and how perceptions and impressions of the bikes themselves affected their value. I then dissected the mission statements of Motivate and Ford GoBike to decide whether or not initial judgements of the bike-share program paralleled the goals of the companies involved. I also investigated whether area of study (major and college) affected the way in which the students perceived the bike-share program due to the diverse academic structures within the university, and therefore influenced how students envisioned future sustainable transportation networks. My findings can help determine if bike-share programs are an institutionally viable vehicle for other college towns looking to install more sustainable modes of transportation.

## FRAMEWORK

### A modern transportation approach

Autocentric city planning has promoted the overwhelming use of cars and other fossil-fuel powered vehicles for transportation. Recently, ride-share programs such as Uber and Lyft have taken over the streets, and students are using this resource liberally. Although Uber and Lyft contribute to the traffic congestion problem, they actually increase the amount of street space used

because they do not use parking spaces. Ride-sharing companies such as Uber and Lyft have become popular for a multitude of reasons: they reduce the cost of owning a car, they are safer than taxis due to the strict background checks on the drivers, they promote community and economic growth, and they are dependable with their on-demand services (Anonymous 2017). The ride-share companies can pick up their client and drop them off right in front of their destination. Bike-sharing programs have recently been established to solve the "first-mile last-mile" (FMLM) problem (King 2016). The FMLM problem is the challenge of navigation to and from public transportation stations (King 2016). For example, there is not a bus stop on each block of the street. Therefore, bus commuters must get themselves to the bus stop, and some are more easily accessible. This problem occurs at the last mile of the commute route as well, where unlike ride-share programs that drop off the individual right at their destination, those who take traditional public transportation vehicles are subject to the limitations of the route itself. The physical infrastructure of the roads cannot reach every point of the city. Ride-share programs have the ability to go door to door by picking up the riders right where they call, and drop them off at the proper destination. Bike-share can do the same.

There are two dominant companies of bike-share programs established in the Bay Area: Ford GoBike and Limebike. These brightly colored bicycles provide a new way for people to get around, without having the responsibility of locking up their personal bicycles, having to wait for public transportation, or getting stuck in Bay Area traffic. Lime attempted to solve the FMLM problem by dispersing undocked bicycles, where users can pick up the closest one and leave them were they please (Lime n.d.). Their model has recently evolved to electric scooters. However, keeping true to their mission statement, they believe that "dock-free smart mobility solutions reduce traffic congestion, promote healthy living, and solve the all-important challenge of the first and last mile" (Lime n.d.). In addition, they support the idea of accessible and affordable movement by offering different payment plans for groups of people such as students.

Ford GoBike is the main competitor in the Bay Area bike-share industry. Ford GoBike has an exclusive contract with San Francisco, San Jose, Oakland, Berkeley, and Emeryville to be the only bike-share program available (Motivate 2017b). Therefore, Limebike and FordGobike cannot coexist in Berkeley. Ford GoBike is operated by Motivate, a company that helps plan, launch, operate, and grow bike-share systems (Motivate 2017c). Motivate helps develop bike-share

programs that are geared towards a "high-quality and efficient experience." In this study, I measure whether these bikes do indeed provide a high-quality and efficient experience (Motivate 2017c).

Interestingly enough, the company Motivate is owned by the ride-share company Lyft. In 2018, Lyft made a $250 million deal with Motivate to work with the team's assets, contracts with cities, and market (Kokalitcheva 2018). Lyft, however, is not in charge of the maintenance and servicing business and will continue to operate under Motivate's rules. In this operation, Ford is simply a sponsor (Kokalitcheva 2018). Initially, Ford's involvement was to transform the brand into more than just a carmaker company, but to be associated with alternate transportation services (Fried and Kokalitcheva 2019). In 2019, Ford disclosed that they have decided to end the partnership with Motivate, and therefore Lyft, within the next year. There is no further information as to how this will affect the existing Ford GoBikes in the Bay Area. With this new deal in place, it is even more important to consider the future of our transportation network, as companies are constantly changing hands and business plans.

**Lack of community involvement**

Ford GoBikes were initially installed without consultation of the long-term residents of Berkeley, nor the students attending the university. The companies did, however, consult with professionals such as Bike East Bay, an advocacy consulting group that fights racial and class bias in transportation planning, policies, and enforcement. In their analysis, Bike East Bay prioritized safety and access to bikes for people of color, low income groups, and immigrants to ensure an equitable transportation (Jui 2014, Motivate 2017b).

Ford GoBikes entered the market without asking for permission, instead asking for forgiveness. Their pilot program, with 700 bikes and 70 stations in San Francisco and San Jose, seemed to give the company enough hope that they would thrive in other cities as well (Motivate 2019). But when expansion plans of Ford GoBikes, Motivate decided to ask the community where they would like to see more of the docks. When the plan was presented to the public, the plans to expand were halted across San Francisco and other cities such as Berkeley. Residents pushed back because they argued the stations would take away space for parking (Fitzgerald Rodriguez 2018). In an interview completed by the SF Gate, one resident said that "the biggest issues stems from a

lack of communication between the city and the bike-share contractor, Motivate, and the residents" (Robertson and SFGATE 2018).

**Rights to the city plan**

When it comes to designing any scale of space, it is important to consider the perspectives and needs of those who intend to use it. All groups -- developers, planners, utility providers, regulators, operative companies, environmental and community groups, etc. -- are required to communicate (Hodson and Marvin 2010). The integration of these groups to address long-term, systematic and strategic change to the built environment is effective and necessary. They all have a common obstacle; working within the confines of the city.

There are social, and therefore political, influences that work together to construct our built environment. The environment, both social and physical, is constantly changing and our urban environment is a direct reflection of who we are as a society. Recently there has been growing concern for those who are underserved within different parts of the same city. Transportation justice is the right of every person to a safe, accessible, affordable, and healthy transportation system (Environmental Health Coalition 2011). Environmental injustices are often overlooked, where those who do not have the ability to stand up for their environmental rights are neglected by city planners.

Public transportation is often taken for granted. For many people living in a city, public transportation is not uncommon. Of course, city planners do their best to extend routes to all areas of the city, but this network is restricted by strict zoning guidelines to keep industry and residential areas separated (National Express Transit 2017). Therefore, innovative programs such as Ford GoBike can relieve some of injustices because of their compact design. According to the Environmental Health Coalition, accessible transportation requires efficient and abundant networks that are not only affordable, but gives greater access to goods, jobs, housing, and services. For health and safety, these same networks must try to focus on zero-emission mass public transportation. Finally, with transportation justice comes the prioritization of environmental justice communities most impacted by transportation injustices (Environmental Health Coalition 2011).

In some cases, transportation improvements may lead to greater uneven distribution of user benefits (Martens et al. 2012). The concepts of "Spheres of Justice" by Michael Walzer explains

that "complex equality means that no citizen's standing in one sphere or with regard to one social good can be undercut by his standing in some other sphere" (Hooghe 1999). In this case, the "good" is equal transportation rights for all individuals, and the "spheres" are the different communities that reside in Berkeley. The question then becomes, which community are we focused on bettering?

Ford GoBike attempts to solve the FMLM problem for the Berkeley sphere, and indirectly tackles transportation injustice. In addition, communities around the world are faced with fossil fuel call for innovative and sustainable solutions to traditional motorized transportation methods. Bicyclists actively reshape how the streets are used (Carlsson n.d.). The term "modordom" as described by Peter Norton, argues that we have not only increased the amount of vehicles on the street, but also socially accepted and accommodated the use of them (Norton 2008). Berkeley is a college town, which is defined as any city where a college or university and the cultures it creates have direct and dominant influence over the makeup of the community, highlighting a youthful population that are highly educated (Gumprecht 2003). In a college town, many students may not care enough to be aware of the changes happening city. In addition to this, students are not as aware of invisible inequalities such as transportation injustice unless they are challenged by them personally.

Personal values and goals drive our decisions. In a time where global warming is occurring at unprecedented rates, as resources we depend on are rapidly depleting, and as social inequalities are finally being addressed, it is ever more important to take all aspects into consideration when finding solutions to these larger problems. Each thought process of each individual is different, which is why it is often so difficult to find solutions to problems where everyone agrees (May 1991). When there are direct effects on the environment caused by humans, such as agriculture and urbanization, it is easy to see how these environmental perceptions shape the land. However, the indirect impacts, such as attitudes and perceptions of the characteristics of the land change, has just as much influence as do the direct impacts. Measuring perception is difficult, but both affect the natural and built environments. The interplay between these two works within a framework of collective ideas, experiences, and expectations that affect their approach to either exploitation or management (May 1991). Therefore, the values of a community can be the most critical source of information for any type of environmental change.

# METHODS

The foregoing background illustrates the challenges that come with introducing a new method of transportation, solving the first-mile last-mile problem, and collecting community perspectives. By providing a service to customers that allows for pick up and drop off within feet of the final destination, ride-sharing has become a preferred mode of transportation. The introduction of bicycles as a shared option provokes challenges that affect both the physical landscape and social sphere of the community. Individual behaviors are influenced by their perspectives on gentrification, sustainability, and capitalism.

## Population of interest

The current undergraduate population of the U.C. Berkeley varies in ethnicity and original place of residence (UC Regents 2018). The current undergraduate student body is separated by gender at 52.6% male, 46.6% female, and 0.8% who identify as non-binary (UC Regents 2018). A full list of the percentages of new students and transfer students by ethnicity is located in Appendix A. Socio-demographic factors may influence environmental values and practices, due to previous exposure to environmental education and access to alternative methods of consumption that reduce overall carbon footprint. By investigating the population's values toward general resource conservation and comparing these perspectives to their actions geared towards environmental sustainability, I can better understand how the population thinks about creating a more environmentally-friendly future.

There are 184 academic departments and programs at U.C. Berkeley distributed between five colleges: College of Letters and Science (L&S), College of Chemistry (COC), College of Engineering (COE), College of Environmental Design (CED), and College of Natural Resources (CNR). First year and junior transfer students are also able to enroll in the Haas School of Business, which makes up a considerable amount of the undergraduate population as well. Majors and minors can be completed between the different colleges. I collected information on major and college to compare differences in attitudes and perceptions among students with various academic interests.

**Study site**

For my research project, I studied the city of Berkeley, California. It is located in the eastern San Francisco Bay Area. Berkeley is surrounded by various small communities and larger cities. The location makes it a place where residents and other community members have diverse views about the environment, both social and physical, because of socioeconomic status and previous education about environmentalism. Due to the nature of the college town, many of the stores and facilities are catered for students. As more students inhabit the city during the fall through spring months, resources are used more frequently. In addition, U.C. Berkeley is located on a hill (Figure 2). The physical landscape limits what form of transportation are viable to serve the community. Alameda-Contra Costa County Transit buses and U.C. Berkeley operated shuttle services are available for students to use for free. Ford GoBike stations are only located on the southern and eastern ends surrounding the campus, with only four stations on the northern end. The full maps are in Appendix B.

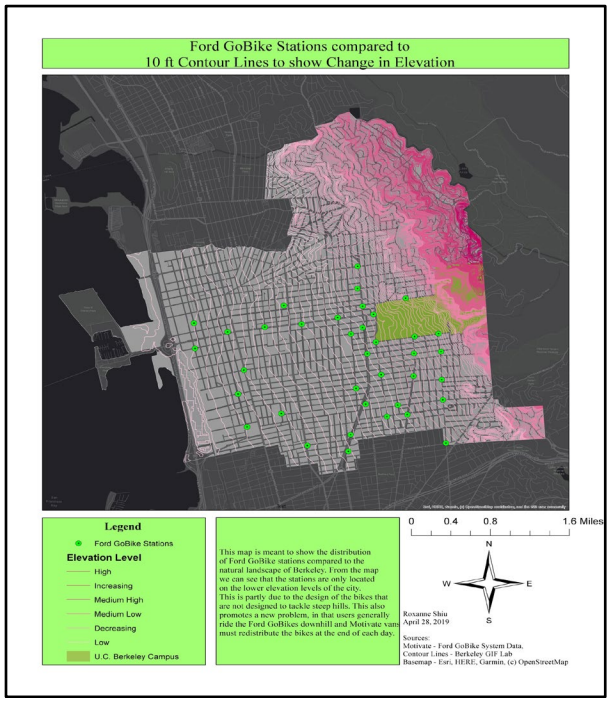



**Figure 2. Ford GoBike Stations compared to 10 foot contour lines, to show change in elevation of landscape.** Data provided by the Geospatial Innovation Facility at U.C. Berkeley's College of Natural Resources. See Appendix B for full map.

**Method of data collection: Qualtrics survey**

To determine learn about the perceptions and uses of Ford GoBikes among U.C. Berkeley undergraduate students, I deployed an electronic Qualtrics survey to as many groups on campus as possible, to get a wide range of students in different colleges. The Qualtrics platform allows companies to collect data and extrapolate possible relationships within the responses (Qualtrics 2019). The software was able to record both quantitative and qualitative answers that could be coded and compared. The survey was entitled Environmental Perspectives and Ford GoBikes. The full survey is listed in Appendix C.

*Technology and survey distribution*

I deployed the survey using an Anonymous Link on multiple social media outlets, as well as distributed the link to target classes that would provide a wide range of students with different areas of study. The two classes were Environmental Science, Policy, and Management 50AC: Introduction to Culture and Natural Resource Management, and Political Science 109S: Parties and Polarization in the United States. ESPM 50AC is an American Cultures class, which is a requirement that all U.C. Berkeley undergraduate students must take. ESPM 50AC is not limited to students only in the College of Natural Resources. PoliSci 109S is a Special Topics course not offered regularly throughout the year, and is interdisciplinary as well. Both of these classes provide a diverse pool of survey subjects. In addition to the two classes, I also shared the link to the survey on multiple Facebook groups such as Free and For Sale that are only comprised of U.C. Berkeley students.

**Ford GoBike distribution and knowledge.** I was interested in learning the general knowledge base surrounding multiple topics, including Ford GoBikes and environmentalism. The first section of the survey evaluated the intersection between the perceptions and practices of Ford GoBikes around the U.C. Berkeley campus. Even if the respondent had not used a Ford GoBike before, I was still interested to learn their impressions about the bikes. I first asked whether or not a Ford GoBike station was within five minutes walking distance from their current residence, to measure whether or not the bikes are accessible to them if they choose to ride one. I then asked questions

regarding whether or not the respondent passed by one, or multiple Ford GoBike stations on their usual commute to campus, with an *Unsure* option. To further understand the respondents' sentiments about the Ford GoBikes, there was a Likert table with four statements in which each respondent answered on a five point scale from *Strongly Disagree* to *Strongly Agree*, mainly about the appearance of the bicycles. For example, "People don't use Ford GoBikes because they are a symbol for gentrification." In addition, I inquired their knowledge about zero-emission transportation in terms of their "carbon footprint," providing a definition as "the total amount of greenhouse gases produced to directly or indirectly support human activities, usually expressed in equivalent tons of carbon dioxide," and asking the respondents to explain if they believed Ford Gobikes could contribute to the reduction of a user's carbon footprint. This was an open ended question. The final question for this survey block was another Likert table with four statements, with a choice of response from *Strongly Disagree* to *Strongly Agree*, to learn about how they regard the Ford GoBikes in relation to taking space on the street.

**Ford GoBike use.** The final question in the first survey block asked if the respondent had used a Ford GoBike before. If *Yes*, they continued with this section. If *No*, they were prompted to the next section entitled "Environmental Values and Behaviors." The two questions of this blocked asked which of the five Bay Area cities they used the Ford GoBike, and the number of times they used them. The next question investigated their preferred transportation method, prior to the introduction and availability of Ford GoBikes. I wanted to learn the reasons why people chose to use the Ford GoBikes, and speculated if there was an open ended question asking this I would gain optimal responses. I included a Likert scale that asked respondents to respond on a range from *Never* to *Always* about five different practices of using the Ford GoBikes. Then, I asked opened ended questions to learn about the individual rides, recording distance length, payment plan, and rip duration. To help answer the greater question, I asked if the respondent would recommend those who have not used a Ford GoBike before to try them. The following question was another Likert table with a scale from *Strongly Disagree* to *Strongly Agree* to measure why users thought others did not use them. Open ended questions followed that asked about overall likes and dislikes of the program, and if they would recommend other universities to install the Ford GoBike program around their campuses as well.

*Likert scale analysis*

**Environmental values and behaviors.** The respondents' values and behaviors were values by totaled scores from two Likert scale matrices. The *Environmental Values* table had eight statements that the respondents had to choose whether they agreed or disagreed on a five point scale. The *Environmental Behaviors* table had ten statements, in which the respondents acknowledged whether or not they engaged with the listed practices on a five point scale from *Never* to *Always*. There was a sixth choice labeled as *Not Available* if the behavior did not pertain to them. Finally, I asked the question, "Do you feel empowered to effect change towards a sustainable future?"

**General demographics.** In this section, I asked for the respondents' age, year at U.C. Berkeley, and majors and minors they are studying at the university. In addition, I inquired which type of housing they resided in. I also asked questions about their family size, income, place of residence before coming to U.C. Berkeley, ethnicity, and identified gender.

## RESULTS

Over the course of eight days the Qualtrics survey was open to the public, I received a total of 507 individual responses. There were 546 raw responses, but after removing false and rushed responses there were 507 valid answers. Of the 507 individuals, only 73 had ridden a Ford GoBike. Ridership ranged from a single use to daily. Even though the amount of times a respondent used a Ford GoBike had a wide range, just using once prompted a whole different perspective about the operation as a whole. Among the respondents, a majority identified as Asian/Pacific Islander with 288 individuals (Figure 3). This distribution reflects the university's ethnic demographics of First Year and Junior Transfer Students in Fall 2018 (Appendix A). A majority of the respondents were Junior year status, followed by Freshmen year status (Figure 4). ESPM 50AC is one of the many lower division courses that first year students take to fulfill their American Cultures requirement mandated by the university.

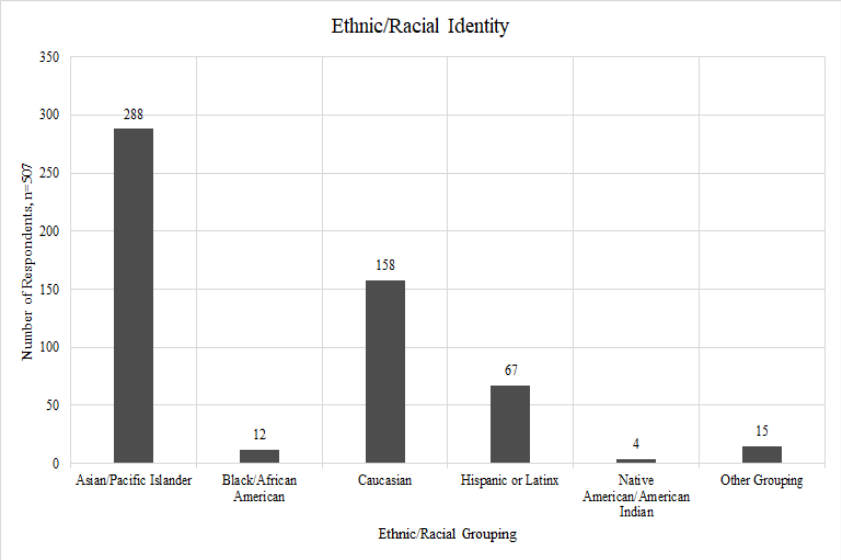
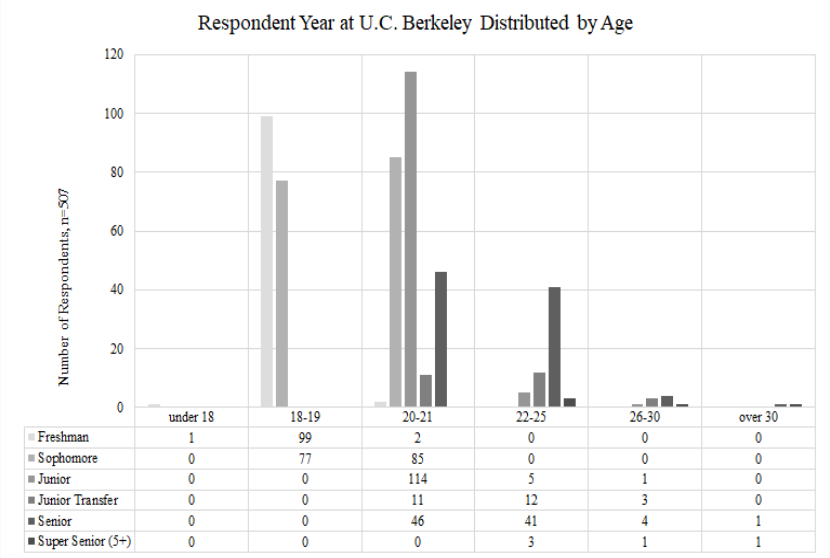



**Figure 3. Ethnic/Racial Identity distribution of respondents.**




| | under 18 | 18-19 | 20-21 | 22-25 | 26-30 | over 30 |
|---|---|---|---|---|---|---|
| Freshman | 1 | 99 | 2 | 0 | 0 | 0 |
| Sophomore | 0 | 77 | 85 | 0 | 0 | 0 |
| Junior | 0 | 0 | 114 | 5 | 1 | 0 |
| Junior Transfer | 0 | 0 | 11 | 12 | 3 | 0 |
| Senior | 0 | 0 | 46 | 41 | 4 | 1 |
| Super Senior (5+) | 0 | 0 | 0 | 3 | 1 | 1 |

**Figure 4. Schooling year and age distribution of respondents.**

The evaluation of distribution and accessibility were determined by asking questions in the Qualtrics survey, inquiring whether the respondent found a Ford GoBike station within five minutes walking distance from their place of residence (Figure 5) and if they passed by a station on their usual commute to the Berkeley campus (Figure 6). 82.2% of Ford GoBike Users responded Yes, there is a station within five minutes of their residence, and an analogous 86.3% of the same

users responded that there was a station as they commuted to campus as well. For Nonusers, 63.7% said there was a station five minutes away, but 71.2% said they passed one as they went to campus.

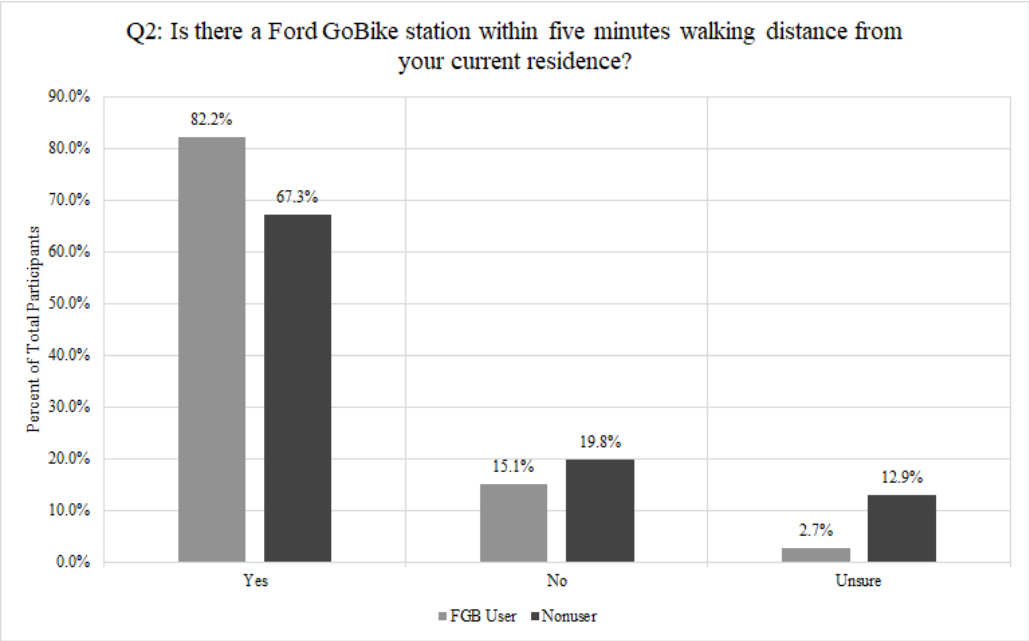



**Figure 5. Percent of participants who responded with Yes, No, or Unsure, categorized by whether or not they were a Ford GoBike User or Nonuser, to Question 2 on the Qualtrics Survey: *Is there a Ford GoBike station within five minutes walking distance from your current residence?***

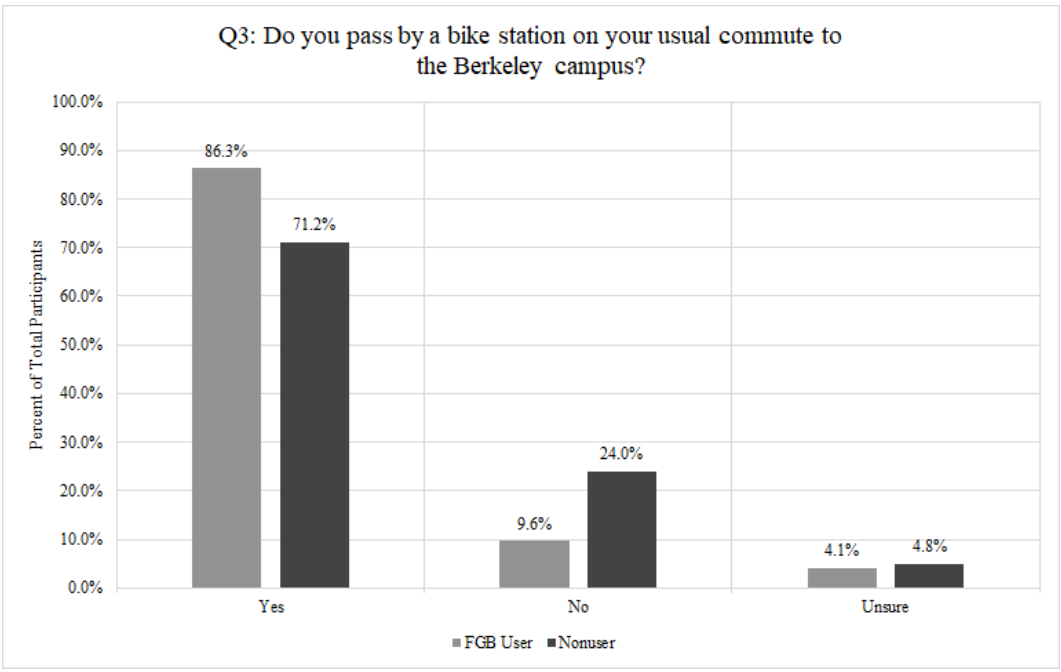



**Figure 6. Percent of participants who responded with Yes, No, or Unsure, categorized by whether or not they were a Ford GoBike User or Nonuser, to Question 3 on the Qualtrics Survey: *Do you pass by a bike station on your usual commute to the Berkeley campus?***

To understand the general sentiments about the Ford GoBikes from all of the survey participants, I included an opened ended question regarding the likes and dislikes about the program. After reading through each response, I determined whether or not the answer had a prevailing positive perspective or a general negative perspective about the Ford GoBikes. I then assigned a value of negative = 0 and positive = 1 and calculated the percentages of Ford GoBike Users and Nonusers with either negative or positive perceptions. This generalization of perspectives does not create much variation between the Users and Nonusers. I asked this question to all participants, regardless if they have or have not used a Ford GoBike. However, 52% of Ford GoBike Users had an overall positive perspective about them whereas 57% of Nonusers had an overall negative perspective about them, based off of the open-ended responses.

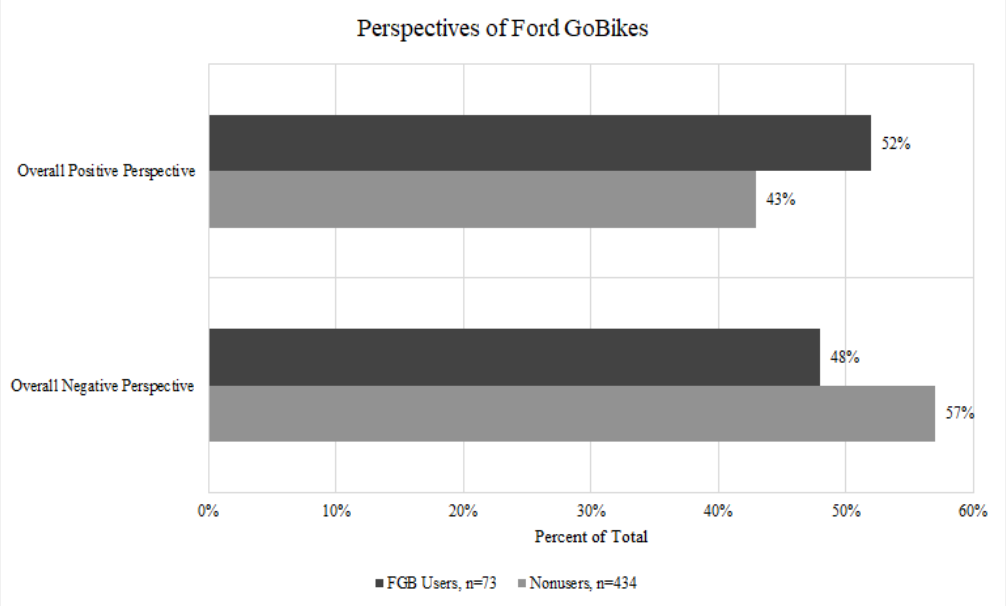



**Figure 7: Generalized Positive or Negative Perspective of Ford GoBikes.** Based on *Q21: Overall, what do you like and dislike about Ford GoBikes, regardless of whether or not you have used one?*

To inquire about whether or not a program like Ford GoBike would thrive in another college town, similar to Berkeley, I separated the recommendations between Ford GoBike Users and Nonusers. Additionally, I asked the Ford GoBike Users if they would recommend someone who has not used a Ford GoBike before to try one (Figure 8). This would probably be most beneficial at a local scale, restricted to the cities where Ford GoBikes or similar bike-sharing programs exist. Among the Users, a majority of the respondents answered that they would both recommend other universities to install Ford GoBikes around their campuses as well as

recommend Nonusers to try them. 43.8% would recommend them to Nonusers, and 41.1% would recommend them to other institutions. Comparable to the overall positive and negative perspectives of the bikes, there was still 5.5% of Users who would definitely not recommend the bikes to Nonusers, and another 2.7% would not recommend them to other universities.

As for the Nonusers, the distribution of whether or not they would recommend other universities to install a bike-sharing program around their campuses paralleled the responses for the User group. 46.5% of this group would probably recommend other universities to try the program, even though 57% of the same group had an overall negative perspective about the program.

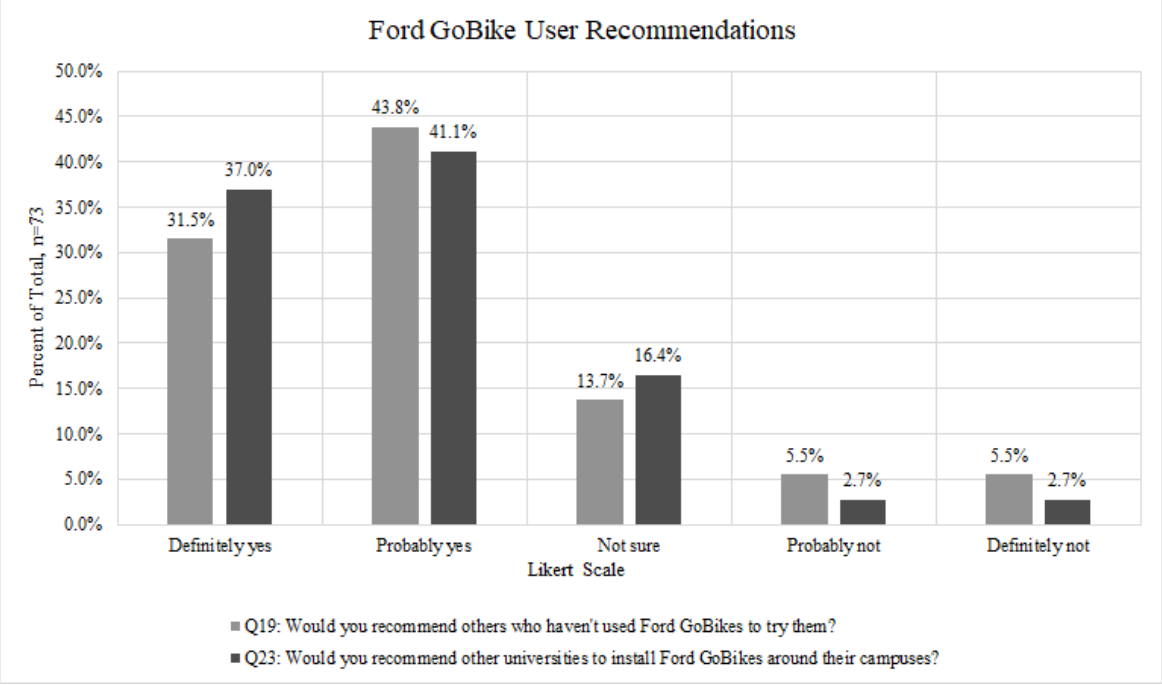



**Figure 8: Results of whether or not Ford GoBike Users would recommend Nonusers to try the bikes, and whether or not they would recommend other universities to install Ford GoBikes around their campus.**

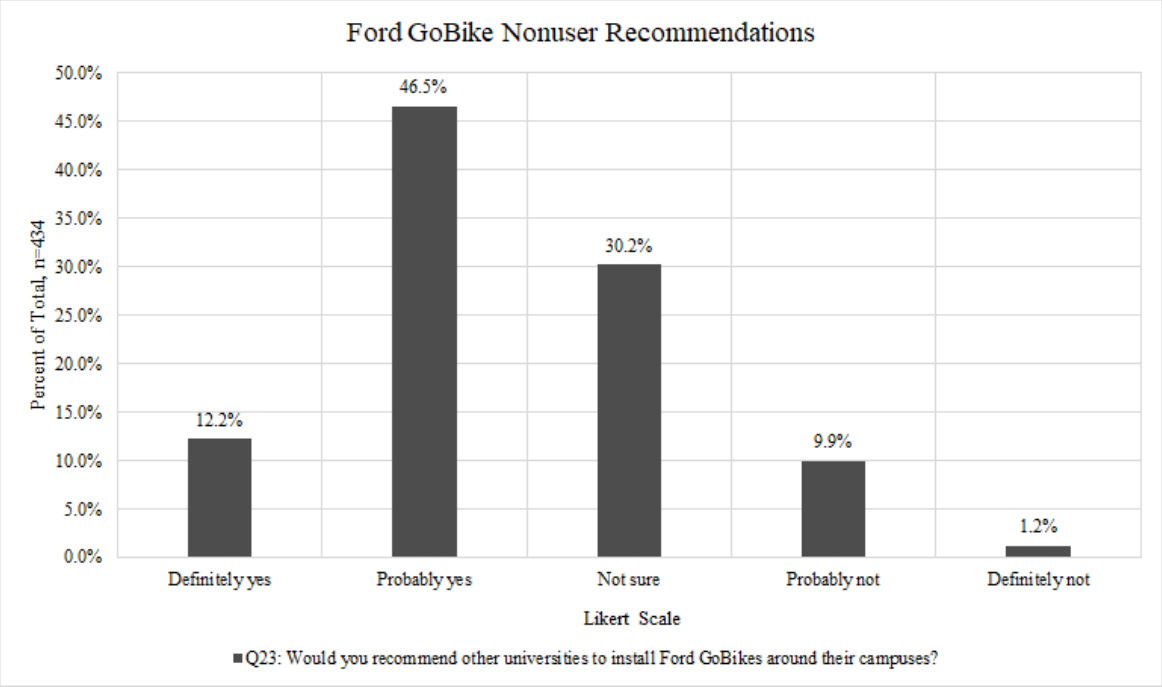



**Figure 9: Results of whether or not Nonusers would recommend other universities to install Ford GoBikes around their campus.**

To put some kind of environmental context to each of the respondents, I had two Likert scale survey questions to determine an Environmental Values Score (EVS) and an Environmental Behaviors Score (EBS) (Table 1). The values matrix had eight statements in which the respondent had to choose their level of agreement, which I then gave a numerical value on a scale from 1-5 and added together the values from each of the eight statements. I did the same for the behaviors matrix, except had a value of zero if a statement was not applicable to them (Appendix C). Therefore, the maximum values each person could get for the EVS was 40, and 50 for the EBS. From the raw data, it was clear that each responded believed they had high environmental considerability. However, their behavior score proved otherwise. For the Ford GoBike users, the average EVS was 37.7 and the average EBS was 33.5. For the Nonusers, the average EVS was 37.9 and the average EBS was 33.3. The lack of range between the two groups was surprising to me.

Finally, I calculated the average EVS and EBS per each college at the university (Table 2). Some of the values seem high, for example, the individual in both the College of Natural Resources in Haas had an EVS of 40 and an EBS of 40. However, there was only one person in that sample.

**Table 1. Statistics on Environmental Values Scores (EVS) and Environmental Behaviors Scores (EBS) between Ford GoBike Users and Nonusers**

| Statistics | FGB User Values Score | FGB User Behaviors Score | Nonuser Values Score | Nonuser Behaviors Score |
|---|---|---|---|---|
| **Average** | 37.7 | 33.5 | 37.9 | 33.3 |
| **Minimum** | 23 | 16 | 8 | 8 |
| **Maximum** | 40 | 50 | 40 | 50 |
| **Mode** | 40 | 27 | 40 | 35 |
| **Sample Standard Deviation** | 3.3 | 7.2 | 3 | 6.5 |
| **Sample Variance** | 10.9 | 51.3 | 8.8 | 42 |

**Table 2. Average Environmental Values Scores and Environmental Behaviors Scores by Group**
Comparison between Ford GoBike Users and Ford GoBike Nonusers
Comparison between 5 Colleges and 1 School at the University of California, Berkeley
Comparison between 4 combinations from survey responses
CED - College of Environmental Design
CNR - College of Natural Resources
COC - College of Chemistry
COE - College of Engineering
Haas - Haas School of Business
L&S - College of Letters and Science

| **Group** | **Environmental Values Score** | **Environmental Behaviors Score** | **n** |
|---|---|---|---|
| FGB User | 37.7 | 33.5 | 73 |
| FGB Nonuser | 37.9 | 33.3 | 434 |
| **Total** | | | **507** |
| **College** | | | |
| CED | 39 | 32.1 | 10 |
| CNR | 38.1 | 36.6 | 118 |
| CNR, COC | 36 | 34 | 1 |
| CNR, Haas | 40 | 40 | 1 |
| CNR, L&S | 38.2 | 38.4 | 13 |
| COC | 38.5 | 34.5 | 2 |
| COE | 37.8 | 30.5 | 30 |
| Haas | 35.7 | 29.5 | 14 |
| Haas, L&S | 38.5 | 29.8 | 4 |
| L&S | 37.8 | 32.4 | 314 |

| | | | |
|---|---|---|---|
| **Total** | | | **507** |
| **Average** | **37.93333333** | **33.71666667** | |

## DISCUSSION AND ANALYSIS

Bicycles provided individuals with an easier way to navigate the complex city streets, allowing riders to cut and weave through traffic that is congested during commute hours (Robertson and SFGATE 2018). Ford GoBikes attempted to solve the "first mile/last mile" (FMLM) problem within the public transit system in the East Bay (King 2016). The FMLM problem is used to describe the process of passenger travel when using public transportation – the way in which people have to find a way to the station and extends later when leaving the station to their final destination (King 2016). Solid infrastructure in the forms of buildings and paved roads limit the amount of space for public transportation vehicles to mitigate this FMLM problem. Bike-sharing programs, even with their flexibility in terms of navigation, are also limited to the amount of space on the road. When the bike-share program is docked, they are faced with a similar problem of finding the space to install the stations.

The motivation for my study was to determine if docked bike-share programs such as Ford GoBike could be institutionally feasible for other college towns that are looking to reduce their carbon emissions in the transportation sector. This survey study allowed me to learn the demographics of the Ford GoBike users among the U.C. Berkeley undergraduate population and investigate their true perceptions about the program. The responses provided information about the knowledge and opinions of both Ford GoBike users and nonusers but it may be inconclusive for determining the future of these bikes. From the data, I noted patterns in respondent assumptions about the Ford GoBike program that I ultimately would not have been able to had I not provided space for open-ended responses. For any type of social science survey, there are limitations that prevent any hard conclusions about the study system in question. I will continue to the support of collecting community input when designing change for the future. However, I can extrapolate on the patterns and common perceptions of the program to further advise institutions about the feasibility of installing a similar type of bike-share program.

**Distribution and access**

The responses indicated discrepancies between the service areas of the Ford Gobikes and whether or not the students believe they are reachable. The distribution of the Ford GoBike stations in Berkeley are strategically placed along some of the busiest streets, including College Avenue, Telegraph Avenue, and Shattuck Avenue. There are limited stations located on smaller side streets, but because of the design of the program the bicycles must start docked and end docked. If the rack is full, the user has to find the next available station. Those of whom are avid Ford GoBike users have a more positive outlook when describing the values of the bike-share program, but still have critiques about how the system could improve. Those who have only used the bicycles once or twice tend to have varying responses. Given the small sample size of respondents who have used the Ford GoBikes, 52% of respondents have a general positive perspective about them. Among the participants a Senior studying Conservation and Resource Studies in CNR had this to say about the Ford GoBikes:

> *They're super convenient - literally everywhere around the Bay Area. They're good for the environment. It's not my bike so I like that I can just return it and get one whenever. It's overall just a super easy and convenient way to get around the Bay (depending on destination). - Anonymous, EVS = 40, EBS = 35.*

This particular survey participant uses the Ford GoBikes at least once a week, and many of those who use the bikes just as frequently have similar sentiments. However, there is still 48% of the user population who do not have the same point of view. A Sophomore studying Architecture in CED made this comment about the distribution of the docks:

> *One thing I do not like about them is that when the spots are filled up, I am forced to go to the next closest spot to return a bike. - Anonymous, EVS = 40, EBS = 38.*

A similar response by a Sophomore studying Cognitive Science in L&S disclosed her views about the accessibility of the bikes, and further commented on the consequences of not following the Ford GoBike protocols:

> *It's hard to dock the bikes, and if you somehow mess up the process of returning the bikes it's possible to be charged hundreds of dollars. The stations are also somewhat inaccessible and limited. - Anonymous, EVS = 38, EBS = 29.*

Among those who have not tried the bicycles, 57% have a general negative view of them. In addition to them not having easy access to a station from their current residence, another common trend in the open-ended responses was simply the lack of knowledge in the location of nearby stations and dock space availability. General concerns about price and safety were also valid, common responses. A Sophomore studying Environmental Sciences and Conservation and Resource Studies in CNR said this about lack of accessibility and general safety:

> *I've never used one, but there not that accessible to me. I'd have to walk 20 minutes to campus to be able to use one and if I had to move a greater distance, I would just use the BART or AC Transit system. Berkeley as a city isn't that safe for bikers. Sidewalks are crowded with people and the road is dangerous with the high rates of congestion and dangerous driving 'habits' residents can sometimes have. - Anonymous, EVS = 37, EBS = 39.*

A Senior student from China, studying Molecular and Cellular Biology in L&S, was familiar with other bike-sharing programs and admitted that price is a huge factor as to why she does not use the Ford GoBikes. Other students had similar sentiments about price and accessibility.

> *I like the idea of a bike share program in general, but I find this to be too expensive. Also, it's annoying to have to return the bike to certain locations/stations. In China the bikes are free for the first 30 minutes to ride, and only start costing money afterwards. Also, you can just leave the bike pretty much anywhere. I realize that this might not be realistic here, but when you have that kind of comparison in mind, it really turns me off of the Ford GoBikes. - Anonymous, EVS = 37, EBS = 28.*

**Ableist attitudes and bad branding**

Motivate's business strategy has underlying problems, besides the lack of equitable distribution. Bike-sharing programs have created a lot of stir in multiple cities around the U.S. when they were installed in places that traditionally did not have equitable transportation, or where the people were already facing rapid displacement (Levin 2017). These bikes have become a symbol for gentrification. The perceptions of Ford GoBikes have the most effect on whether or

not the bikes are used. Product branding definitely has an effect on the success of a business. A Sophomore Political Economy student in L&S summed up his view:

> *Do not know how valid this is, but I do not the way they look. They also look quite clumsy and heavy, something I do not want to deal with. It is not a membership I would subscribe to. - Anonymous, EVS = 40, EBS = 23.*

A Senior in CNR studying Environmental Sciences agreed:

> *They look clunky and honestly the big "Ford" design is displeasing. I like the concept of having stations for these bikes, but the stations may not always be where I want to go. Furthermore, needing an app and paying make it too much work as opposed to attaching a card and just being able to swipe. - Anonymous, EVS = 39, EBS = 34.*

Another common theme found in the responses was the ableist attitude these bikes promote. Some persons may not have the physical or mental ability to use these bicycles due to various reasons. Two comments stood out in the open-ended response question. The first is from a Junior studying Computer Science in L&S:

> *I think they should be more size inclusive. As a short person, these kinds of bike systems usually have bikes that are too large/tall for people of my height. As a result, I have fallen off bikes because I can't reach the floor when on the seat. - Anonymous, EVS = 39, EBS = 33.*

The second quote was from a Sophomore Computer Science Major in L&S who has tried the Ford GoBikes before:

> *Ford GoBikes promote a more eco-friendly attitude. However, the bikes are hard to ride for short people since the seats are a little too high, and are difficult to adjust. - Anonymous, EVS = 39, EBS = 21.*

**Misconstrued mission statements**

In the advent of Internet branding, businesses boldly display their mission statement, and progress towards their goals can affect consumers' perception of the company. Lyft, the ride-share company now turned bike-share promoter, has a simple mission statement, "Improve people's lives with the world's best transportation" (Gallo 2019). Motivate's mission statement, on the other hand, is more complex and has multiple parts. First and foremost, they aim to "Revolutionize the landscape of our cities, making them more accessible, healthier, and sustainable." Motivate breaks this down further, completing their goal by building connections, innovating cutting edge service, collaborating with community groups to tackle challenges that are occuring within cities today, and creating a "safe and dependable" system (Motivate 2019). Finally, Ford GoBike's mission statement is a combination of the two operating companies, but focused on bicycles. "A fun and affordable way to get around," the website says, for people to save time, save money, have fun, get exercise, and go green (Motivate 2019).

I did not supply the survey population with any of these three messages that are promoted by the companies. If the product is good, they do not necessarily need to advertise their goals for providing their service. Therefore, the respondents have no prior knowledge of the mission statements before they critiqued the business plan. Motivate's first sub-statement, to make connections with the community may not be playing out the way. A Sophomore Society and Environment Major in CNR commented on the aesthetic:

> *I don't like how I feel when I'm on a Ford GoBike. I am not comfortable with the fact that everyone else immediately knows that I'm on one. - Anonymous, EVS = 36, EBS = 31.*

In addition to the personal sentiments this individual felt, many do not use the bikes out of spite because of what they symbolize. Nine respondents said similar things about the branding of Ford on the bicycles - this leads many of them to believe that the car company Ford is more involved than it actually is. Branding, symbols, and distribution have an effect on the overall view and therefore use of the Ford GoBikess. In addition, communication about the product has an influence over the success of the business as well. From Questions 19 and 23 on the survey, 31.5% of the Ford GoBike users would definitely tell their friends to try a bike, and 43.8% of the users would

probably tell their friends. A comment from a Junior Computer Science Major in L&S gave insight about branding by the company and communicating among peers:

> *I don't have strong opinions on the Ford GoBikes because I've never used one, and I've never heard anyone talk about using them. Because of this, I think the company behind them should advertise their environmental benefits to students more! - Anonymous, EVS = 40, EBS = 35.*

The "go green" push that Ford GoBike attempts to promote by servicing cities with "zero carbon emission transportation" has room for critique as well. A Junior studying Molecular and Cell Biology in L&S understood the disconnect between individual action and corporate responsibility when it comes to reducing carbon emissions:

> *I appreciate that Ford is trying to take measures to help reduce the overall footprint in the world. Now, the question is what is the carbon footprint of the factories that produce the bikes? Are there ways to reduce and eliminate their carbon footprint? - Anonymous, EVS = 40, EBS = 41.*

Another respondent, a Senior studying Political Science in L&S focused more on the individual user's emissions and safety, two points mentioned in Ford GoBike's mission statement that this individual notices the bikes do not cover :

> *Most people who ride a bike in the city don't understand the rules, and I have been hit by a cyclist more than once as a pedestrian. Ford GoBike increases the likelihood of me getting hit. They also don't provide helmets, which is unsafe. But it reduces [individual] carbon emissions and increases physical activity, so if [Ford GoBike users] were more mindful I wouldn't be mad. - Anonymous, EVS = 40, EBS = 37.*

**Interdisciplinary thinking approaches**

A relationship I was hoping to discover from the survey data was whether or not individuals in certain colleges displayed more or less environmental values and therefore behaviors. However, due to the mixed values and responses of EVS, EBS, and open-ended responses, after running a linear regression I did not find a statistically significant correlation between how the respondent answered the survey and the college in which they studied. In addition, the distribution of

respondents from each college varied in numbers, making the sample populations difficult to compare (Table 3). The College of Letters and Science holds the most students, whereas the College of Natural Resources is one of the smallest.

**Table 3. Count of respondents by College or School.**
CED - College of Environmental Design
CNR - College of Natural Resources
COC - College of Chemistry
COE - College of Engineering
Haas - Haas School of Business
L&S - College of Letters and Science

| College/School | FGB Users | Nonusers | Total |
|---|---|---|---|
| **CED** | 3 | 7 | **10** |
| **CNR** | 14 | 104 | **118** |
| **CNR, COC** | 0 | 1 | **1** |
| **CNR, Haas** | 0 | 1 | **1** |
| **CNR, L&S** | 2 | 11 | **13** |
| **COC** | 1 | 1 | **2** |
| **COE** | 6 | 24 | **30** |
| **Haas** | 2 | 12 | **14** |
| **Haas, L&S** | 0 | 4 | **4** |
| **L&S** | 45 | 269 | **314** |
| **Total** | **73** | **434** | **507** |

The responses showed that regardless of what the students' major, college, EVS, or EBS was, their perspectives about Ford GoBikes were widely assorted. Although each of the colleges emphasize certain topics, this does not diminish the connections, interests, and philosophies each individual student has beyond campus life.

Although the data proved no statistical significance between the different colleges and some kind of environmental awareness, this is not the main takeaway of this research project. The most valuable information discovered from this survey analysis were the testimonials and explanations as to what these students truly think about the Ford GoBike program that is so prominent around the Berkeley campus and wider Berkeley community. As for the students, many

of them will only stay for four years before graduating, and may not care to see how the development of this bike-sharing program; however the influence of Ford will continue to remain present.

## LIMITATIONS AND FUTURE DIRECTIONS

### Limitations

*The U.C. Berkeley undergraduate community*

The students who attend U.C. Berkeley are known to have strong core values and beliefs that drive their behaviors involving the environment. Between colleges, certain behaviors may be valued more than others, and therefore the perspectives of their academic domain influences each of their mindsets. Considering the whole U.C. Berkeley undergraduate population as a cohesive whole is inaccurate due to the differences in areas of interest and prior knowledge. In addition to this, the student body hosts a wide range of socioeconomic statuses that also influences values and behaviors. For example, those who can afford a motorized vehicle around campus probably would never consider riding a Ford GoBike to run errands or commute, as it would be inconvenient and unnecessary for them. Socioeconomic status also influences where students can reside, where low-income students may rely on public transportation or walking farther away from campus because of rent prices in the Bay Area. Furthermore, which I touched upon in the Introduction, is the fact that Berkeley is a college town. I mentioned how the busy season comes when the students are back at the university, but during the summer there is an eerie quietness that has an obvious impact on local businesses. If I were to do the survey again over the summer months, I doubt the number of users would change because they would not be used.

*Targeted classes*

There were two classes that I directly distributed the survey to. I sought help from my mentor, Kurt Spreyer, and a consultant from the D-Lab, Sean Freeder, who both offered to send the electronic Qualtrics survey to their classes. Kurt Spreyer and Sean Freeder instruct Environmental Science, Policy, and Management 50AC: Introduction to Culture and Natural

Resource Management, and Political Science 109S: Parties and Polarization in the United States, respectively. As mentioned before in the Methods section, these classes are not limited to those in the same college as the discipline. Because they were deployed directly to the student population, I am grateful that I received as many responses as I did. Even so, had I started the data collection sooner I would have asked others instructors to directly share the electronic survey with their students/peers as well.

*Survey incentives*

It is different when a student rushes through a survey because they are uninterested in the topic versus when they rush through a survey to get an award for completion, such as extra credit in a class. Unfortunately, a lot of people take surveys in passing without really thinking about how their answers will affect the spread of data if they are not sincere or thorough in their answers. Citizen science is very difficult to quantify and qualify, because there is no control over the responses. All they see are the questions as a form of notation, and then respond to the questions using whatever personal philosophies they operate by. Surveys are a good way of collecting social science data, but it is very difficult to acquire sincere responses when a long survey is not about something the respondent is interested in.

**Future directions**

*Approach to future surveys with the integration of company perspectives*

When conducting surveys to the general public, there is always fear for low survey return. With improved outreach efforts, not only would it increase the number of respondents but it would also increase the number of people who are interested in the study. The larger population size would minimize the effects of dropped responses due to fake or rushed responses. In addition, the larger population size would provide more data to perform statistical analyses that would result in more statistically significant results. This would have been beneficial when tackling the third sub-question, which examines the relationship between the mindsets of students in particular colleges within U.C. Berkeley and their overall perceptions about Ford GoBikes. Regardless of the

existence of association between colleges and viewpoints, a larger sample size would still be beneficial to gain as many perspectives as possible, especially when attempting to tackle local, regional, and global environmental problems.

Although I focused on two subpopulations in the study, Ford GoBike users and nonusers, I was unable to obtain data from non-student Berkeley residents. This research that was fundamentally based on "community perspectives" is missing a large part of the Berkeley community. If other universities choose to administer a similar survey, it would be valuable to extend the participants to the wider populace. A final community actor involved in the installation, distribution, and operations of the Ford GoBikes is the company Motivate. Discussion between these three groups would result in a comprehensive plan of action.

## BROADER IMPLICATIONS

Despite its limitations and complications, surveying is an advantageous method of gaining feedback from large communities. When it comes to environmental action and planning for the future, instead of listening to one expert group it will become evermore important to engage in discourse with the community. In addition, by conducting surveys to a wide population, there is potential to reach sample groups that provide diverse perspectives about what they believe should be in their environment. This form of data collection does not rely only on numbers and algorithms to determine whether or not a company is succeeding at their goals; business may seem fine on paper, but it may tell a different story. This method of research also empowers the community by providing knowledge about problems they were not aware were affecting them. Unless there is an active community seeking ways to improve their way of life in the face of transportation injustices, environmental injustices, and increasing structural violence, plans will continue to go unchallenged and continue to enact harm on the most vulnerable and fluid communities. In addition to this, as more people are moving towards urban spaces, cities will be limited in terms of what new infrastructures can be created to support all the people. Therefore, citizen science has a place in contributing ideas that could influence policy for the greater good, without having the limitations of budget or structural incompetence.

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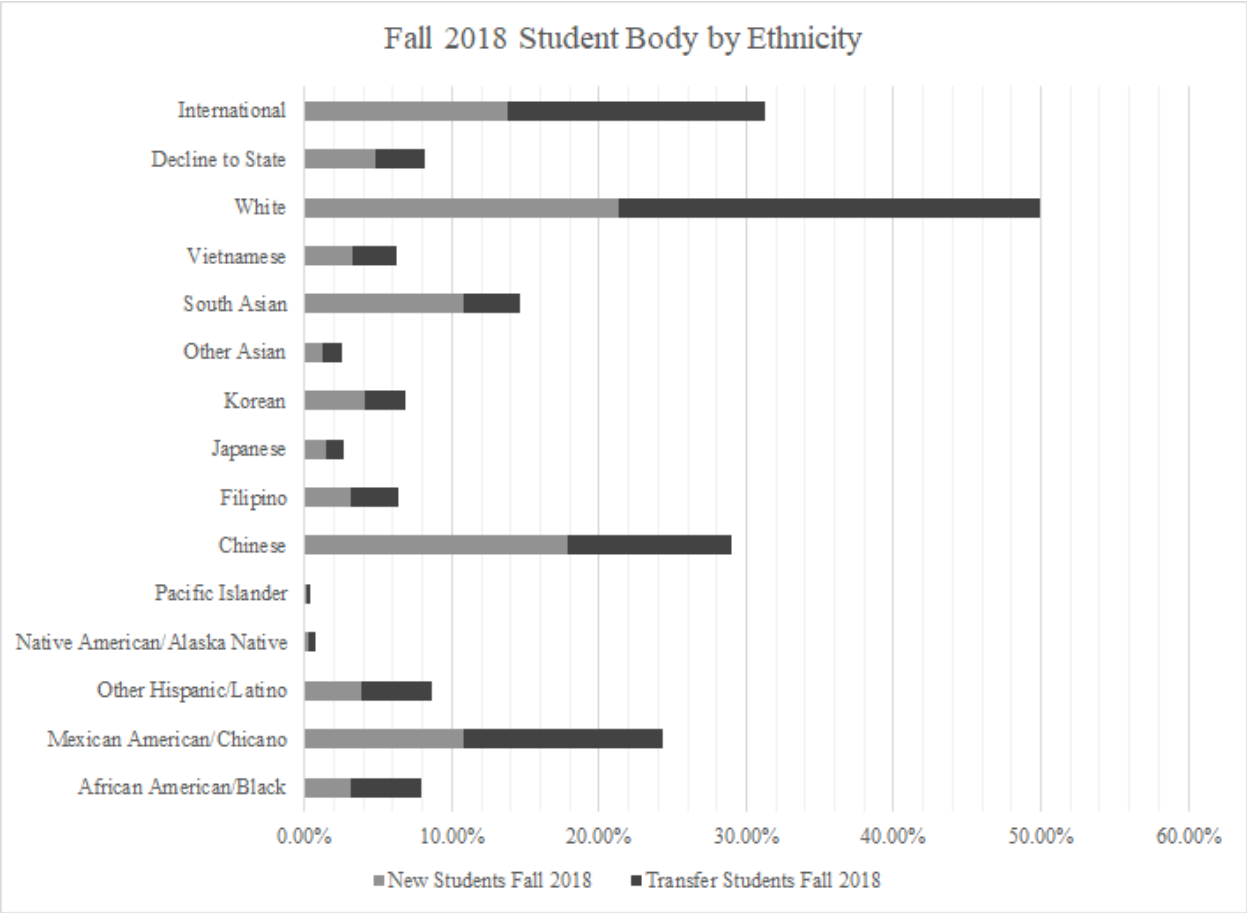
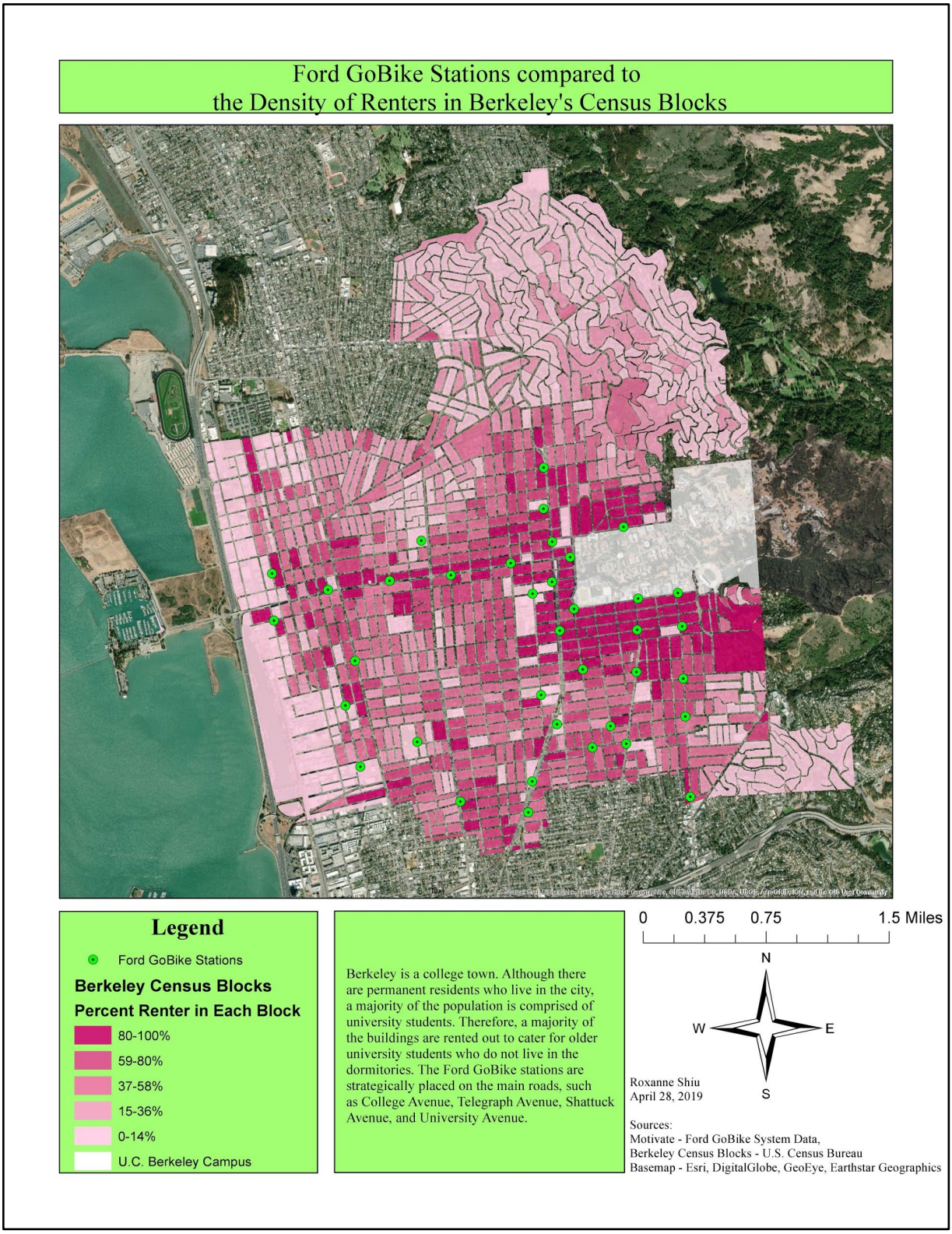
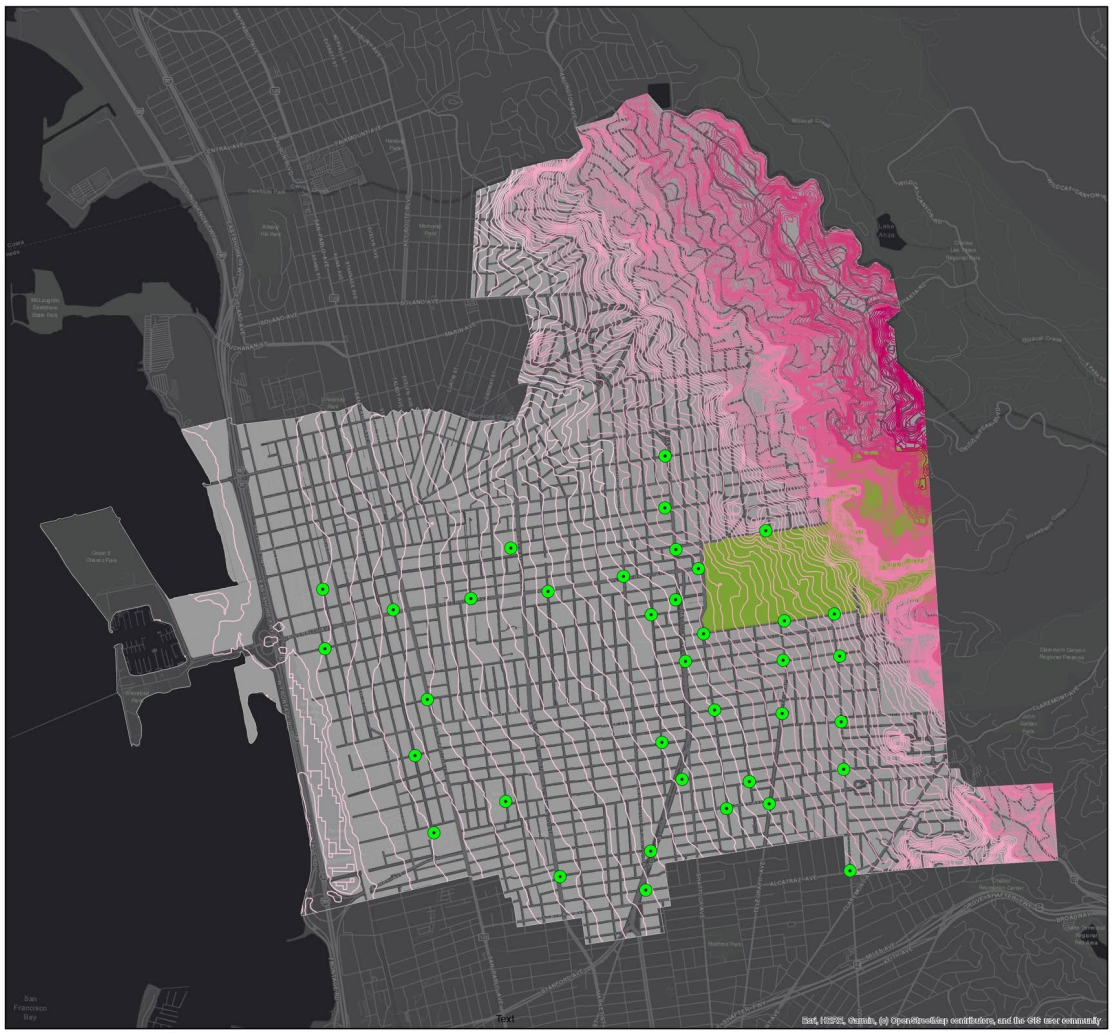
## APPENDIX A: Ethnicities of First Year and Transfer Students



## APPENDIX B: Ford GoBikes Compared to Renter Density and Contour Lines



## Ford GoBike Stations compared to 10 ft Contour Lines to show Change in Elevation




**Legend**

- Ford GoBike Stations

**Elevation Level**

- High
- Increasing
- Medium High
- Medium Low
- Decreasing
- Low
- U.C. Berkeley Campus

This map is meant to show the distribution of Ford GoBike stations compared to the natural landscape of Berkeley. From the map we can see that the stations are only located on the lower elevation levels of the city. This is partly due to the design of the bikes that are not designed to tackle steep hills. This also promotes a new problem, in that users generally ride the Ford GoBikes downhill and Motivate vans must redistribute the bikes at the end of each day.

0 0.4 0.8 1.6 Miles

N W E S

Roxanne Shiu
April 28, 2019

Sources:
Motivate - Ford GoBike System Data,
Contour Lines - Berkeley GIF Lab
Basemap - Esri, HERE, Garmin, (c) OpenStreetMap

# APPENDIX C: Qualtrics Survey

**Environmental Perspectives and Ford GoBikes**

**Start of Block: Introduction Block**

0 The end is near and I need your help! Thank you for taking the time to complete this confidential survey.
It is vital to the research for my senior thesis. The survey in total should take 20 minutes to complete. Please take the time to answer each question completely and thoughtfully. Not doing so could negatively affect the data and analysis. The survey will close on Monday, April 15th. Your responses are very much appreciated!!!
If you have any questions or comments about the survey elements or overall thesis project, please contact: Roxi Shiu at roxishiu@berkeley.edu.

**End of Block: Introduction Block**

**Start of Block: Ford GoBikes and Environmentalism element**

1 This survey evaluates the intersections between the perceptions and practices of Ford GoBikes around the UC Berkeley campus. Even if you have never used one of the Ford GoBikes, please answer all questions to the best of your ability.

2 Is there a Ford GoBike station within five minutes walking distance from your current residence?

- Yes (21)
- No (22)
- Unsure (23)

3 Do you pass by a bike station on your usual commute to the Berkeley campus?

- Yes (25)
- No (26)
- Unsure (27)

4 Do you pass by multiple bike stations on your usual commute to the Berkeley campus?

- Yes (20)
- No (21)
- Unsure (22)

5 What is your current zip code?

6 Indicate your level of agreement with the following statements.

| | Strongly disagree (12) | Disagree (13) | Neither agree nor disagree (14) | Agree (15) | Strongly agree (16) |
|---|---|---|---|---|---|
| Ford GoBikes are easily accessible to me. (8) | ○ | ○ | ○ | ○ | ○ |
| Ford GoBikes are easily accessible to others. (9) | ○ | ○ | ○ | ○ | ○ |
| Ford GoBikes are a viable mode of transportation for students. (10) | ○ | ○ | ○ | ○ | ○ |
| Ford GoBikes are a viable mode of transportation for other residents in Berkeley. (11) | ○ | ○ | ○ | ○ | ○ |

7 One's "carbon footprint" can be defined as "the total amount of greenhouse gases produced to directly or indirectly support human activities, usually expressed in equivalent tons of carbon dioxide." How do you think Ford GoBikes can contribute to reducing users' carbon footprint? Please explain.

_____

8 Indicate your level of agreement with the following statements.

| | Strongly disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly agree (5) |
|---|---|---|---|---|---|
| There are too many cars in Berkeley. (1) | ○ | ○ | ○ | ○ | ○ |
| Buses are accessible modes of transportation for a college student. (2) | ○ | ○ | ○ | ○ | ○ |
| Bicycles are accessible modes of transportation for a college student. (3) | ○ | ○ | ○ | ○ | ○ |
| There is enough space on the road for cars, buses, and bikes to share. (4) | ○ | ○ | ○ | ○ | ○ |

9 Have you ever used a Ford GoBike?

- ○ Yes (23)
- ○ No (24)

*Skip To: 20 If Have you ever used a Ford GoBike? = No*

10 Which of these five Bay Area cities have you used a Ford GoBike? Choose all that apply.

- ☐ Berkeley (1)
- ☐ Emeryville (2)
- ☐ Oakland (3)
- ☐ San Francisco (4)
- ☐ San Jose (5)

11 Approximately how many times have you used a Ford GoBike?

- ○ Only Once (1)
- ○ 2-5 times (2)
- ○ 6-`10 times (3)
- ○ Daily (4)
- ○ Weekly (5)
- ○ Monthly (6)

12 What mode of transportation do you prefer to use, prior to the availability of Ford GoBikes? Choose all that apply.

- ☐ Personal Vehicle (1)
- ☐ Personal Bicycle (2)
- ☐ Public Transportation (bus, Bart, etc.) (3)
- ☐ Walk (4)
- ☐ Ride-Share Programs (5)

13 Indicate your level of agreement with the following statements.

| | Never (27) | Rarely (28) | Sometimes (29) | Most of the time (30) | Always (31) |
|---|---|---|---|---|---|
| I plan when I use the Ford GoBikes. (1) | ○ | ○ | ○ | ○ | ○ |
| I use the Ford GoBikes spontaneously. (2) | ○ | ○ | ○ | ○ | ○ |
| I use the Ford GoBikes whenever I'm in a rush. (4) | ○ | ○ | ○ | ○ | ○ |
| I use the Ford GoBikes to commute. (7) | ○ | ○ | ○ | ○ | ○ |
| I use the Ford GoBikes in conjunction with another form of transportation (bus, Bart, etc). (8) | ○ | ○ | ○ | ○ | ○ |

14 What are your personal motivations for using Ford GoBikes?

_____

15 Which payment plan are you using?

_____

16 What is the longest distance you've ridden a Ford GoBike?

_____

17 What is the shortest distance you've ridden a Ford GoBike?

_____

18 Do you use the Ford GoBike only one way, or round-trip?

- ○ One way (1)
- ○ Round-trip (2)
- ○ Depends on destination (3)

19 Would you recommend others who haven't used Ford GoBikes to try them?

- ○ Definitely yes (27)
- ○ Probably yes (28)
- ○ Not sure (29)
- ○ Probably not (30)
- ○ Definitely not (33)

20 Indicate your level of agreement with the following statements.

| | Strongly Disagree (1) | Disagree (2) | Undecided (3) | Agree (4) | Strongly Agree (5) |
|---|---|---|---|---|---|
| People don't use Ford GoBikes because they are expensive. (1) | ○ | ○ | ○ | ○ | ○ |
| People don't use Ford GoBikes because they are a symbol for gentrification. (2) | ○ | ○ | ○ | ○ | ○ |
| People don't use Ford GoBikes because they advertise Ford. (3) | ○ | ○ | ○ | ○ | ○ |

21 Overall, what do you like and dislike about Ford GoBikes, regardless of whether or not you have used one?

_____

22 How could the Ford GoBike program better cater to college students?

_____

23 Would you recommend other universities to install Ford GoBikes around their campuses?

○ Definitely yes (18)

○ Probably yes (19)

○ Not sure (20)

○ Probably not (21)

○ Definitely not (23)

**End of Block: Ford GoBikes and Environmentalism element**

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**Start of Block: Environmental Values, Agency and Behaviors**

24 Indicate your level of agreement with the following statements regarding your environmental values.

| | Strongly Disagree (1) | Disagree (5) | Neither Disagree nor Agree (2) | Agree (3) | Strongly Agree (4) |
|---|---|---|---|---|---|
| I believe climate change is a real issue. (2) | ○ | ○ | ○ | ○ | ○ |
| I believe climate change is a pressing issue. (3) | ○ | ○ | ○ | ○ | ○ |
| I believe climate change is accelerated by human activity. (10) | ○ | ○ | ○ | ○ | ○ |
| I believe in a top-down approach in solving environmental problems. (i.e. it is on the government or larger entity to push for solutions.) (4) | ○ | ○ | ○ | ○ | ○ |
| I believe in a bottom-up approach in solving environmental problems (i.e. it is on the individual to take action.) (5) | ○ | ○ | ○ | ○ | ○ |
| I believe it is possible to stop global temperatures from rising 1.5 °c. (11) | ○ | ○ | ○ | ○ | ○ |
| I believe humans should care about the natural world. (13) | ○ | ○ | ○ | ○ | ○ |
| I believe what I choose to purchase/consume impacts climate change. (14) | ○ | ○ | ○ | ○ | ○ |

25 Indicate your level of agreement with the following statements regarding your environmental behaviors.

| | Never (1) | Seldom (3) | Sometimes (4) | Often (6) | Always (7) | N/A (8) |
|---|---|---|---|---|---|---|
| I sort my trash in the appropriate receptacles when they are available. (1) | ○ | ○ | ○ | ○ | ○ | ○ |
| I unplug cords when they are not in use. (2) | ○ | ○ | ○ | ○ | ○ | ○ |
| I carry my own reusable utensils/dishes/containers when purchasing food/drinks. (3) | ○ | ○ | ○ | ○ | ○ | ○ |
| I bring my own bags when I go shopping. (4) | ○ | ○ | ○ | ○ | ○ | ○ |
| I vote for legislation that aims for conservation and reduction of anthropogenic emissions. (6) | ○ | ○ | ○ | ○ | ○ | ○ |
| I buy locally grown produce. (7) | ○ | ○ | ○ | ○ | ○ | ○ |
| I buy organic produce. (9) | ○ | ○ | ○ | ○ | ○ | ○ |
| I try to fix things before throwing them out to buy a new one. (10) | ○ | ○ | ○ | ○ | ○ | ○ |
| I read articles or watch videos related to climate change (not for school work). (11) | ○ | ○ | ○ | ○ | ○ | ○ |
| I avoid buying products that are landfill material. (12) | ○ | ○ | ○ | ○ | ○ | ○ |

26 Do you feel empowered to effect change towards a sustainable future?

_____

_____

_____

_____

_____

**End of Block: Environmental Values, Agency and Behaviors**

**Start of Block: Demographics Block**

27 What is your age?

- ○ under 18 (1)
- ○ 18-19 (2)
- ○ 20-21 (3)
- ○ 22-25 (4)
- ○ 26-30 (5)
- ○ over 30 (6)

28 What year are you at UC Berkeley?

- ○ Freshman (3)
- ○ Sophomore (4)
- ○ Junior (5)
- ○ Junior Transfer (6)
- ○ Senior (7)
- ○ Super Senior (5+) (8)
- ○ Graduate student (9)
- ○ Graduated (10)

29 What is/are your major(s) and minors?

_____

30 Which college(s) are you in?

_____

31 What is your family household size? (Please include yourself)

_____

32 What is the income of your family's household?

- ○ Less than $25,000 (1)
- ○ $25,000 to $49,999 (2)
- ○ $50,000 to $74,999 (3)
- ○ $75,000 to $99,999 (4)
- ○ $100,000 to $149,999 (5)
- ○ $150,000 to $199,999 (6)
- ○ $200,000 to $249,999 (7)
- ○ $250,000+ (8)

33 What is your place of longest residence before coming to UC Berkeley? If you are a U.S. resident lease identify by city, state and zipcode. If you are an international student, please enter the city and country.

_____

34 Which best describes where you currently live?

- ○ Student dormitory (1)
- ○ Non-affiliated UC apartments (2)
- ○ Living at home with family (3)
- ○ Fraternity Housing (6)
- ○ Sorority Housing (7)
- ○ Co-op (5)
- ○ Other, please specify (4) _____

35 Please specify your ethnicity/race:
*(Mark all that apply)*

- ☐ Asian/Pacific Islander (1)
- ☐ Caucasian (2)
- ☐ Black or African American (3)
- ☐ Hispanic or Latino (4)
- ☐ Native American or American Indian (5)
- ☐ Other, please specify: (6) _____

36 What gender do you identify with?
*(check all that apply)*

- ☐ Female (1)
- ☐ Male (2)
- ☐ Other, please specify: (5) _____
- ☐ Prefer not to answer (4)

**End of Block: Demographics Block**