



Breaking Barriers to Bike Share: Lessons on Bike Share Equity

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The number of public bike share systems has increased rapidly across the United States in recent years. However, there is evidence that significant portions of the population are underrepresented among bike share users, including people of color, along with lower-income, female, older, and less educated groups.^{1,2} Lack of bike share stations in neighborhoods with people of color and/or lower incomes is one factor, but it does not completely explain the disparities in use.^{3,4} Cost, lack of payment options, lack of bank and credit card accounts, and lack of familiarity with bike sharing are other potential barriers.^{2,5} Many cities are trying to overcome access and use barriers for underserved communities. This includes cities working with the Better Bike Share Partnership (BBSP) to test potentially replicable approaches, such as focused outreach.

Bicycling and bike share have the potential to benefit disadvantaged communities by providing new mobility options, while also providing an opportunity for recreation and physical activity. We recently completed a three-part study to explore dimensions of bike share equity, including 1) efforts among public bike share system operators around the country; 2) views and experiences of residents in lower-income communities of color regarding biking and bike share; and 3) experiences of lower-income and people of color who do use bike share. Our findings provide insight into effective strategies to attract new and diverse users, benefits to current and potential participants, and topics needing additional research.

Part 1: Survey of Bike Share Systems/Operators

As a first step, we asked bike share systems if and how they were approaching issues of equity. For example: Do they have equity policy statements? Do they consider equity when making or implementing decisions relating to the bike share system? Do they have metrics to understand how equitable their system may be, or if their efforts to improve equity are successful? We focused on systems in the United States with at least 40 bikes. In total, representatives of 75 active or pre-launch systems were invited via email to take a short survey, with 56 systems responding. Just over half of the responding systems we considered were medium-sized (100–500 bikes), while around a quarter were small systems (40–100 bikes) and another quarter were large systems (>500 bikes).

Less than one in four surveyed systems had written equity policies. A similarly low percentage indicated having metrics for measuring equity-related outcomes. Many others indicated that, whether or not they had written policies, they considered equity in various specific elements of their system—for example 72 percent indicated they considered equity when establishing fee and payment systems, while 68 percent indicated they considered equity when siting bike share stations.

Larger bike share systems (more than 500 bikes) were more likely to have a formal equity policy, with nearly half having one. Further research is needed to understand whether this is due to greater resources or something else. Pre-launch systems were also more likely to consider equity. More research is needed to understand whether this represents a shift over time or good intentions not being realized.

We also asked system representatives to identify the top issues that prevent equity target populations from using bike share. Top cited barriers were price and payment (50 percent), inadequate bike networks (43 percent), lack of knowledge about the system (32 percent), and negative perceptions of bike share/bicycling (25 percent). Many of these themes would show up in our surveys of community residents and bike share users.

Overall, most bike share system operators demonstrated awareness of the equity challenges they (and their users) faced.

However, articulating and codifying what their equity policies and efforts should look like, and how they would assess their progress through clear metrics, are issues that many systems are grappling with.

Part 2: Survey of Community Residents

To understand how people living in low-income neighborhoods and communities of color view bicycling and bike share, we surveyed residents living in areas targeted by BBSP efforts in three focus cities (Philadelphia, PA; Chicago, IL; and Brooklyn, NY). We also recruited residents from similar nearby neighborhoods that had not received BBSP outreach, but those data are not included here. We received 1,885 total responses (11 percent response rate), including control areas. The populations in the study neighborhoods targeted for outreach were predominantly people of color (79–94 percent), and 37–70 percent of households earning under \$35,000 per year. Survey respondents reasonably matched area demographics on race/ethnicity and income, but were somewhat more likely to be women, older, and more highly educated. Four demographic categories formed the basis of our equity-focused analysis: lower-income people of color, higher-income people of color, lower-income white, and higher-income white, with the last category representing the more typical current bike share users in U.S. cities. We define lower-income as 300 percent of the poverty level, which varies with household size. We also considered gender, age, and geographic differences in our analysis.

A few key findings emerged. First, while lower-income and people of color (POC) are not currently using bike share as much as higher-income white residents, they are just as interested in using it in the future. Only two percent of lower-income residents surveyed were current bike share members, while 5 percent of higher-income POC and 10 percent of higher-income white residents were current members.

However, 11 percent of residents, regardless of race or income, indicated they expected to be members within a year. Moreover, over half of the lower-income respondents of color who had an opinion on the issue indicated that they would like to use bike share more than they do currently. Asked to select reasons they might try bike share, lower-income POC were more likely than other residents to be motivated by bike share for the purpose of getting exercise, riding as a social activity, or just to try bicycling.

What explains the difference between interest in using bike share and actual usage? Findings suggested that lower-income respondents, and particularly lower-income people of color, faced multiple barriers, with cost (48 percent said this was a “big barrier”), liability (52 percent), and payment concerns (37 percent) at the top of the list (Figure 1). Lower-income respondents of color were also more likely to indicate they didn’t feel familiar enough with the system to use it (34 percent said this was a big barrier). On



Barriers to bike share



Figure 1. Lower-income people of color in the study neighborhoods face more barriers to using bike share.

several questions, the majority of respondents indicated that they had “no idea” about the truth of the statement, including details about the cost of using the system (56 percent) and the availability of the reduced-price membership or pass option (63 percent). Each city offers a discounted membership for lower-income residents.

There were several areas of notable misconceptions about the bike share systems. Although none of the cities have mandatory helmet laws for bicycle riders, 18 percent of respondents thought that a helmet was required to use the system. Lower-income respondents were more likely to incorrectly assume a helmet is required to use bike share. Over one-in-five (21 percent) of lower-income respondents of color mistakenly thought that the bike share bike would lock if the user exceeded a time limit. Finally, even when cash options are available, most residents thought that using bike share requires a credit card (and lower-income people of color were least likely to know cash was an option).

One reason for lack of familiarity with the bike share system is that lower-income POC were half as likely as higher-income white residents to have friends or family who have used bike share (35 percent to 70 percent).

Lower-income residents are far less likely than higher income residents to have a driver's license or own a working bicycle, and bike share could be a way to overcome those mobility limitations. Unfortunately, these income-based differences also held for certain key access elements such as a credit card, reliable internet access, or a smartphone: only 43 percent of lower-income POC in our sample had a credit card (compared to 88 percent of higher-income POC and 98 percent of higher-income white people); 56 percent of lower-income POC had access to reliable internet access (compared to 87 percent of higher-income POC and 100 percent of higher-income white residents); and 66 percent of lower-income POC had a smartphone (compared to 92 percent of higher-income POC and 97 percent of

higher-income white people). Since most bike share systems rely heavily on each of these elements for standard membership (e.g. signup, payment, locating bike and station locations), successful equity programs will need to consider these differences.

It's also important to recognize that for bikeshare to be successful (for equity populations or anyone else), barriers to bicycling in general have to be understood and addressed. Thus, we asked about things that might prevent people from riding a bike. Traffic safety was the top barrier to bicycling across all respondent groups, highlighting the need for safe bicycle routes for everyone. For people of color, far away destinations were a commonly cited barrier (we were not able to tell the degree to which this was just a perception versus actual longer travel distances), which may compound traffic safety concerns if they expect to spend more time in traffic to reach destinations.

Part 3: Survey of Bike Share Users

To better understand how and why lower-income and people of color are using bike share, we also conducted a user survey. Local bike share operators in Philadelphia, Chicago, and Brooklyn helped us email members in the same BBSP outreach areas as in the resident survey (based on zip code) as well as anyone who had received targeted outreach citywide (such as joining an organized ride, taking a class, or taking advantage of specific discount and cash payment options). Respondents were divided into three groups for analysis: 1) "BBSP target users": lower-income and POC who took advantage of equity-focused discounts or related programs, 2) Lower-income and POC who had not participated in BBSP discounts or programming, and 3) a comparison group composed of higher-income, white members in or near the BBSP outreach areas.

Just under two-thirds of BBSP target users found out that they qualified for a bike share discount before signing up, which makes sense since we intentionally included people who had received a discount. More than 90 percent of those people told us the discount was "very important" in their decision. Open-ended questions about why BBSP target users joined showed they were most likely to state either the transportation cost savings or discounted membership as the main reason they joined.

There are several encouraging signs that BBSP target users find value in their bike share memberships. It appears that once these target users become members, they are using bike share as frequently as other members. For example, these respondents were just as likely as other bike share users, including higher-income whites, to take 20 or more bike share trips per month, with just over a third doing so (Table 1). BBSP target users were also twice as likely to tell us that bike share was saving them \$21 or more per week on travel costs (Table 1). However, further study may be needed to better understand how to keep people renewing and engaged, including tolerance of increased pricing if/when initial discounts expire.

Table 1: Bike share trip frequency and weekly cost savings for bike share users.

	BBSP target users	Non-BBSP target users	Higher-income, white users	All
Bike share trips per month				
No trips	4%	2%	1%	1%
1-2 trips	9%	5%	5%	5%
3-5 trips	11%	12%	12%	12%
6-10 trips	18%	22%	22%	22%
11-19 trips	23%	24%	23%	23%
20 or more trips	36%	34%	37%	36%
Responses received	56	218	528	802
On a WEEKLY basis, about how much money do you think [the bike share system] saves you on your travel compared to what you were spending before?				
\$0	13%	20%	26%	23%
\$1-5	16%	17%	13%	14%
\$6-10	19%	18%	20%	19%
\$11-20	10%	19%	19%	18%
\$21 or more	25%	14%	12%	14%
Don't know	17%	12%	11%	12%
Responses received	66-69	216-223	564-583	843-874

Note: Bold indicates category value significantly greater or less than expected ($p < 0.05$, adj. stand. Chi-square residual).

Policy Implications

Taken together, these study components provide certain key insights for successfully engaging diverse communities around bike share. These include:

To be successful, bike share systems need to overcome the exposure and information gap for lower-income residents and people of color. These individuals may be less likely to learn about bike share via friends and family or by using other systems.

However, outreach methods that employed targeted programs and discounted memberships do show some success in bridging this gap by offering an alternate pathway to bike share membership (i.e. “the price is right, so why not try it,” as opposed to “my friends use bike share, so why not use it”).

Cost and liability concerns must be addressed, particularly for lower-income people. Although some will eventually come to get much more value out of bike share than the cost of membership, the upfront cost can be daunting. Fear of being liable for overage fees or damage charges is also significant, and many lower-income people do not want use a credit card to pay for bike share for fear that they will end up paying more than they bargained for. Many others do not even have credit cards. These people need to feel the cost is reasonable, and that there will not be any surprise charges.

Any efforts to engage low-income communities and communities of color in bike share need to recognize that regardless of race or income, there need to be safe routes to nearby destinations, or bike share is not likely to be seen as reasonable or safe.

The research also points to several opportunities for innovation in program details based on things we heard from residents and bike share users. For example, lower income POC were much more likely than other residents to tell us fun and recreational activities, including exercise, were reasons they might try bike share. Options to target bike share use to match these activities should be further explored. Free transfers with public transportation were viewed by most residents as a program change that would make them more likely to use bike share. Increased bike share interoperability with transit may be a path to improving bike share’s attractiveness for these people.

Finally, we should point out that this study was primarily based on data from three relatively dense, older cities, and in neighborhoods with majority African-American populations. Although we observed considerable consistency across the locations, extrapolating to other communities should be undertaken with caution. That said, we encourage readers to explore the individual survey reports, which offer much greater detail than could be provided in this article. Those reports are available at: <http://trec.pdx.edu/research/project/884>. [itej](#)

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