



CAN MONTHLY PASSES IMPROVE BIKE SHARE EQUITY?

At pennies per day, bike share in the U.S. is the cheapest form of transit other than walking.¹ However, low-income people are less likely to purchase annual memberships than people in higher income brackets. While a variety of factors impact ridership, including station density and the presence or absence of high-comfort bike lanes, data and marketing psychology suggests that the traditional bike share annual membership pricing may discourage membership among low-income would-be riders. In addition to convenient station spacing, successful, equitable bike share systems require pricing options that are user-friendly for people of all income levels.

Over the past year, a number of cities have taken advantage of backend technology updates to consider how payment structures impact enrollment.² Some systems like Philadelphia's Indego have focused extensively on payment options, eliminating the classic annual membership and offering in its place monthly

passes, cash payments and pay-per-trip options.³ These monthly passes are intended to make bike share more convenient and attractive by making the pricing more flexible and highlighting bike share's inherent affordability. The majority of U.S. bike share programs now offer monthly or installment membership options.

While most monthly options are still too new to fully determine their impact, research suggests that monthly options may increase overall enrollment and make bike share more attractive to lower-income riders. This paper uses behavioral pricing research in comparable industries, customer behavior data from rail transit, findings from focus groups and reports from outreach ambassadors to assess potential ridership impacts. In addition, this paper explores the three major aspects of pricing – cost, membership duration, and payment method (credit/debit card vs. cash) and identifies a variety of pricing policy decisions that impact ridership, especially among low-income riders.

Technology, Price or Information?

In the U.S., the conversation around pricing and equity has largely focused along two lines: how much low-income people can pay for a bike share membership, and whether payment technologies (credit and debit cards) limit access to bike share for low-income populations.⁴ These discussions have spurred the creation of programs to reach the unbanked and steep discounts (reducing prices to as little as \$5/year) for low-income people in systems around the country.⁵

In most cities, however, sales of discounted annual membership have been extremely low, even when reduced to \$5/year.⁶ In focus group data and anecdotal reports from bike share outreach teams, absolute cost is rarely highlighted as a major barrier. Despite discount programs in most cities, Boston is the only place where subsidized members make up a significant portion (18%) of the overall ridership, a fact largely attributable to Boston's extensive outreach efforts.⁷ For most cities, providing steep discounts has not significantly increased the number of low-income riders and may use resources that could be used for other equity interventions.

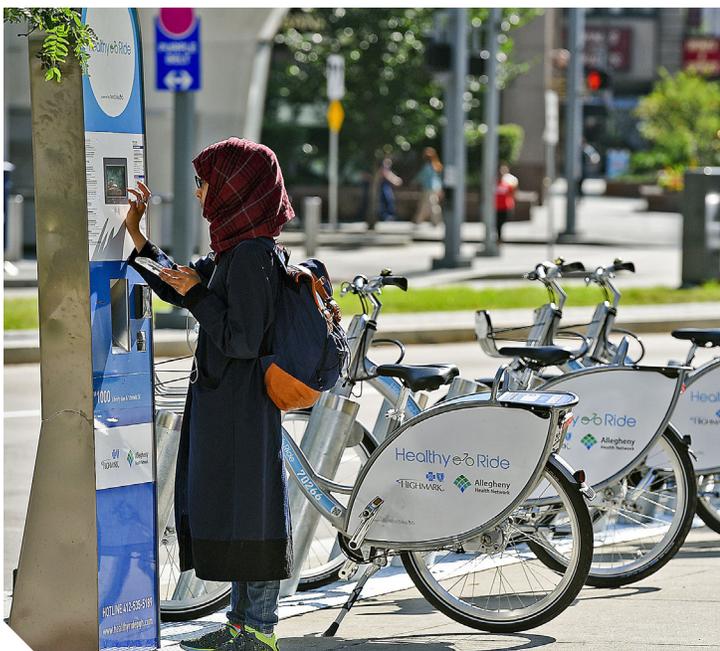
The role of credit cards as a barrier may also be overstated in many cities. To date, programs that provide ways to sign up for bike share other than with

"THE SENSE WE GET IS THAT MONEY IS NOT REALLY THE ISSUE, ONCE PEOPLE UNDERSTAND THE PRICING. I'M HEARING PEOPLE SAY: IF I CAN AFFORD CABLE AND MY PHONE THEN I CAN FIND THE \$15 FOR BIKE SHARE."

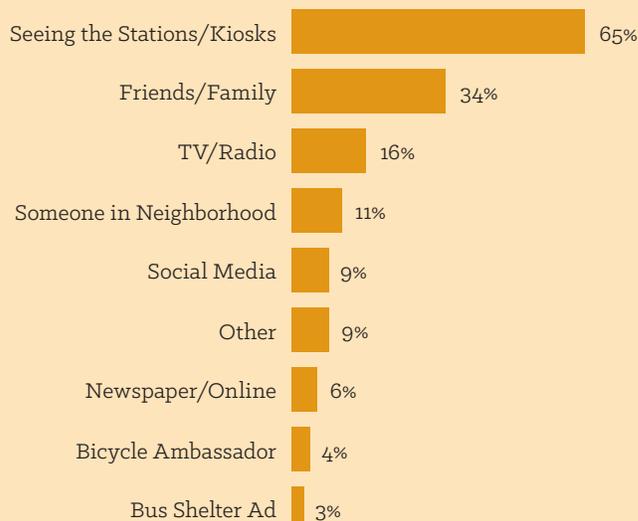
YVONNE, BIKE SHARE AMBASSADOR, GREATER PHILADELPHIA BIKE COALITION

a credit/debit card have produced mixed results. The overwhelming majority of Americans have a checking or savings account (92.3%)⁸ or a credit card (72.1%).⁹ In Boston, a snapshot of Hubway membership sales from 2014 found that 92% of subsidized memberships were purchased with a personal credit card.¹⁰ However, the impact that the credit/debit card requirement may have on access varies greatly by region. The need for alternatives to credit cards may be greater in Southern and Rust-Belt cities which tend to have higher rates of unbanked households than the country at large.¹¹ In general, unbanked Americans tend to be poorer, less well educated and are less likely to be white.¹² In Chicago, for example, 2009 data shows that the rate of unbanked households ranges from less than 4% in the wealthier north Chicago neighborhoods to as high as 24% in some census tracts on the South Side.¹³

Preliminary results from Philadelphia show that the Indego30CASH membership, designed primarily for



I learned about Indego via...



low-income and unbanked Philadelphians, is reaching its target audience: people who buy the Indego30CASH plan tend to have lower incomes than the membership at large. However, even in Philadelphia, which ranks as the 9th most unbanked large city in the United States, about 30% of people who purchased cash memberships renewed with a credit card.¹⁴ Such data suggests that many low-income people both have access to credit cards and prefer their convenience once they have decided that bike share works for them. Cash payment plans may serve two distinct purposes: to provide access to the unbanked and also to get people in the door.

Further compounding the issue, all operators report challenges with accurately conveying pricing information, making it hard to determine if the dollar amount is in fact too high, or if people are wary of joining bike share programs because they are uncertain about the cost. A 2012 focus group of Emerson University students found that “the cost of Hubway is not the factor that limits students from using the service, but rather the confusion and inefficient method of making the payments.”¹⁵ A Temple University study of Philadelphia’s Indego system and its perception among low-income Philadelphians found that about half the people who said they knew how the pricing worked or how to become a member actually had incorrect information.¹⁶

Stations are the primary communication platform about price, especially for low-income people. The Temple University study also found that 65% of people learned about Indego by seeing the stations. These findings suggest that clearly articulating pricing information on the kiosks is key, even for membership types that cannot (yet) be purchased at the kiosk.¹⁷ In New York, planners recognize that they missed an opportunity to inform low-income New Yorkers about the \$60 membership option by failing to highlight that information on the kiosk, especially in the weeks between station installation and launch.¹⁸ Anecdotes suggest that some low-income New Yorkers thought that the \$9.95 day pass, advertised extensively on the kiosk and largely designed for tourists, was the only option for membership. Overall, improving the information presented on the kiosk – both content and graphic layout – is an important and low-cost way to increase ridership.



BOSTON BIKES: SIMPLICITY EQUALS SUCCESS

Boston Bikes, the City of Boston department that oversees bike share in Boston, runs one of the most successful subsidy programs. As of 2014, approximately 18% of Hubway members who live in Boston have purchased \$5/year subsidized memberships.¹⁹ Use statistics suggest that many of these low-income Bostonians rely on Hubway for their basic transportation needs. On average, male subsidized users take more trips per year (78 trips/year) than male unsubsidized users (60 trips/year).²⁰

The success of Hubway’s subsidy programs in Boston is largely due to the extensive resource commitment by the City of Boston. Boston Bikes employs a designated Program Manager who spends 30% of their time on growing Hubway’s subsidized membership program. Their efforts are widespread. Rather than focus on a single partnership, the Program Manager works closely with multiple community organizations and reaches out via neighborhood groups. Boston Bikes’ efforts are supported by extensive marketing in multiple languages.

Hubway’s high percentage of subsidized members can also be attributed to the ease with which memberships can be purchased. While subsidized memberships are restricted by income and place of residence, Hubway assesses eligibility via the honor system.²¹ To sign up, people applying for subsidized membership make a phone call, receive a code and proceed to the general online purchase site. The City feels confident that the honor system is working well with minimal if any problems.²² Demographic data on Boston’s subsidized members suggests that these efforts are reaching the target audience: 64% of subsidized members are on public assistance.

Monthly membership plans can increase ridership

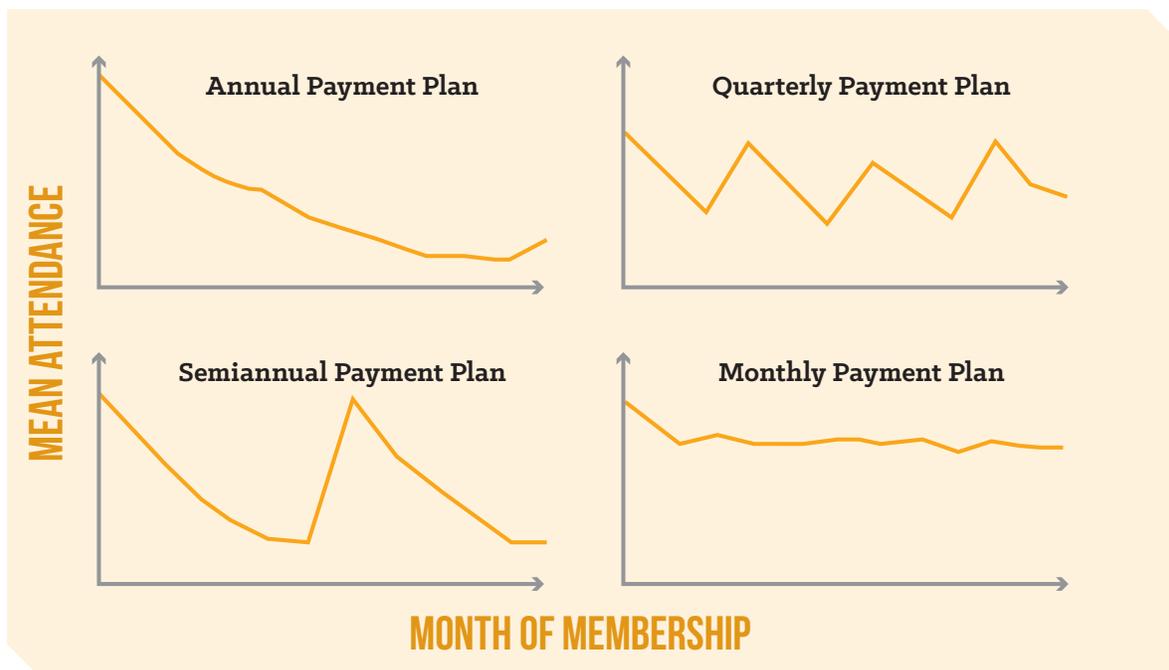
Data from a variety of comparable, user-based services such as cell phones, gyms, and transit suggest that monthly installment options can increase enrollment and use. A 2002 report in the Harvard Business Review found that members who were billed monthly, as opposed to annually, went to the gym more consistently, suggesting that frequent, regularly scheduled payments encouraged them to try to “get their money’s worth.”²⁴

The same report found that more consistent use was associated with higher annual renewal rates; gym members who paid in monthly installments were more likely to renew their membership after a year than those who paid the lump sum. Another study from UC Berkeley found that gym members who chose monthly versus annual contracts were 17% more likely to remain enrolled for longer than one year.²⁵ Applying these findings to bike share membership may be a way to increase membership and revenue for cities/operators and get more people on bikes.

Low-income users may especially benefit from monthly options

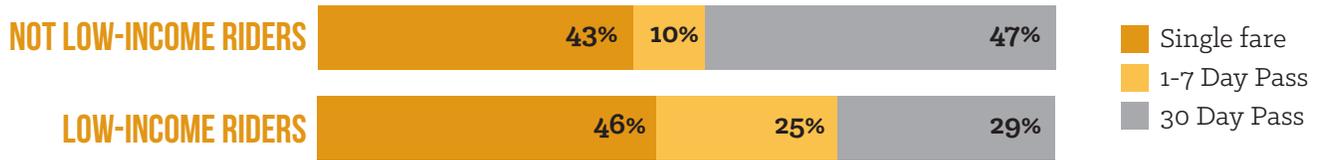
Monthly memberships may also make bike share pricing more attractive to low-income users. Research around travel behavior and transportation expenditures has shown that low-income people prefer to make smaller, more frequent payments, which allow them to make more nuanced budgeting decisions.²⁶ In bike share focus groups in Boston, paying for an annual membership all at once was cited as a barrier and respondents stated that they would be more likely to use bike share if they could pay smaller amounts more frequently.²⁷

In Philadelphia, focus groups explicitly designed to reach lower-income Philadelphians found that people would pay more overall (around \$20/month) if they could pay by the month.²⁸ For some low-income would-be riders, the monthly membership option reduced fears of being locked into a financial commitment they could not keep and made them more willing to try bike share in the first place.



Comparison of program attendance for different types of payment plans.²³

Low-income transit riders opt for more membership plan flexibility



NACTO analysis of CTA, NYC MTA, and MBTA pass sales.

An analysis of data from transit systems also supports offering monthly payment options.²⁹ In a review of transit pass purchases by income level in Chicago, New York, and Boston, NACTO found that, while rates of purchase of single ride passes remained the same across income levels, low-income people were more likely than higher-income people (25% vs. 10%) to buy short-term transit passes. While some of the variance may be attributable to the fact that low-income people often have less fixed work schedules, this finding corroborates research that suggests that for many low-income people, financial decisions about transportation are highly calibrated to exact need; low-income people in particular do not want to pay for a week they won't use.³⁰

Importantly, data from London, Boston, and Philadelphia suggests that when bike share is convenient for low-income people, they rely on it heavily to get around. In London, research on Santander Cycle Hire found that people who purchased annual memberships and lived in low-income neighborhoods took more bike share trips than average.³¹ In Boston, 2014 ridership data reveals that men with subsidized memberships took 78 trips per year as opposed to 60 trips per year made by men without subsidized memberships.³² In Philadelphia, people who purchase memberships in cash represent less than 1% of all members but have taken over 4% of total trips.³³

Lastly, bike share focus group results suggests that monthly installments may also be good for the bottom line of cities and operators because the monthly payment lowers the sticker shock and encourages more people to try bike share. In the Philadelphia focus groups, when participants were asked what the monthly price should be, they consistently suggested prices that were 50 – 100% higher than current prices. Only 8% of suggestions were below \$20/month. The resulting Indego30 pass is \$15. In Denver, a University of Colorado Denver study also found that low-income people would be willing to pay around \$15 a month for a bike share membership.³⁴

In terms of impact on ridership and equity, the difference between monthly installments and monthly memberships is hard to determine. A monthly membership, with no further financial obligations,

“ALL THEY’RE (PEOPLE) GOING TO SEE IS ‘LESS THAN \$20’. PEOPLE BUY ANYTHING FOR LESS THAN \$20. EVEN IF YOU DON’T RIDE A BIKE.”

PHILADELPHIA “LOW INCOME FOCUS GROUPS” PARTICIPANT³⁵



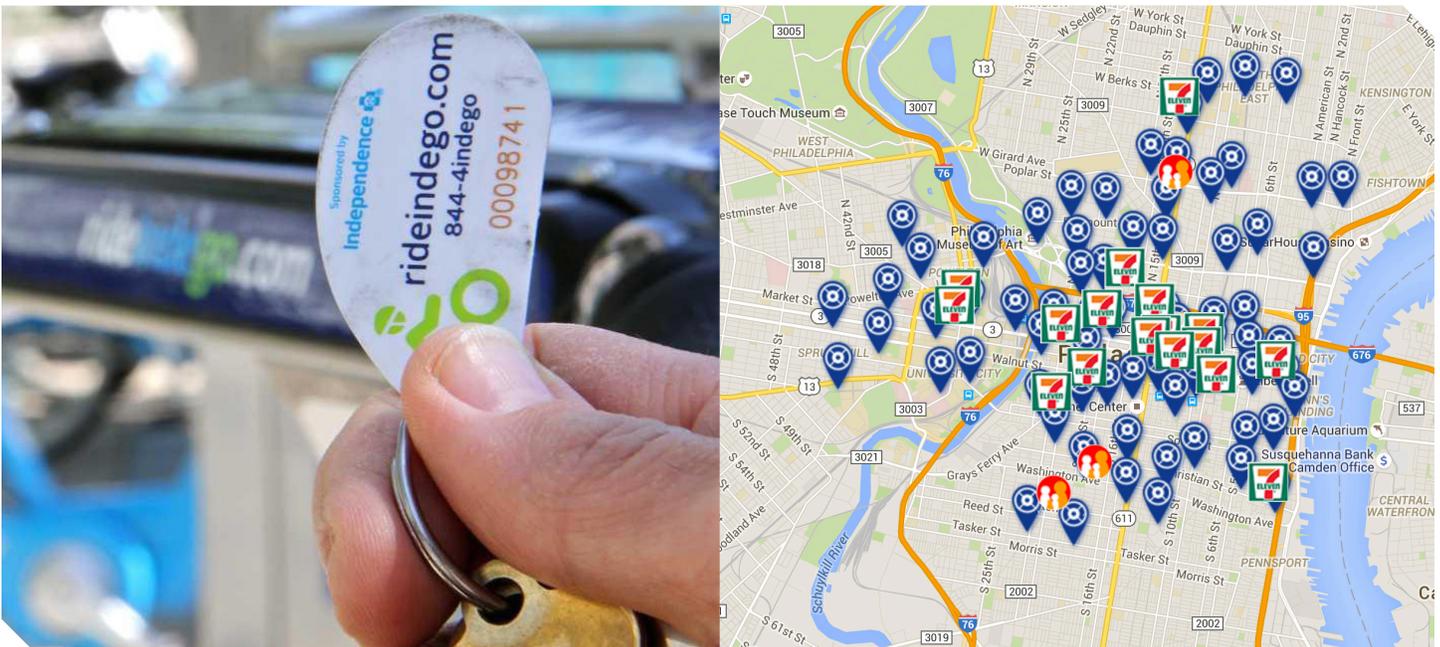
may decrease trepidation about trying bike share and increase sign-ups. Operators, however, may find the financial uncertainty of a month-to-month system hard to manage. Monthly memberships can be made more convenient by offering auto-renewal options. Boston and Minneapolis make auto-renewal particularly attractive to people on tight budgets by connecting auto-renewal to use – membership begins, or renews, when a member swipes their key at any station. Alternatively, monthly installments offer valuable financial predictability for operators and users alike. Promoting the low “sticker price” for the installment payment rather than the total annual cost (e.g. \$8/month vs. \$96/year) may help encourage use.

Convenience is key

As with all aspects of bike share, convenience is crucial to success. While most monthly payment options are still too young to evaluate, city-specific features, such as issuing keys for monthly membership, options for immediate long-term access, auto-renewal timing, and early cancellation fees may affect sign-up rates, especially among low-income people.

Creating ways for people to get long-term memberships immediately, as opposed to waiting for a key to arrive in the mail, can encourage enrollment. Unlike rail transit, most systems do not allow potential riders to purchase long-term access at the kiosk when they are already thinking about bike share. In Seattle, the Pronto kiosk can dispense physical keys for 1 or 3-day passes, technology that could be extended to long-term access. Ensuring ease of access should also be applied to programs designed for low-income or unbanked populations. Indego's partnership with PayNearMe makes paying with cash particularly easy - members who chose the Indego30CASH plan can go to any of over 25 locations (7-11s and Family Dollar stores) to physically purchase their memberships.

Providing physical bike share keys, regardless of membership duration, may also encourage ridership. The key serves as a physical reminder that bike share is available and shortens time spent getting a bike. In Philadelphia and Austin, users sign up for an automatically renewing 30-day membership online and receive a key for use at any dock. In contrast, in Nashville, users sign up online for 30-day membership but must swipe their credit card at the kiosk each time to access a bike.



PayNearMe locations and Indego stations in Philadelphia.



LESSONS FROM THE CITIES

» Allow people to spread out costs.

Membership plans that allow for installment payments tend to see higher use and better annual retention rates than lump-sum annual memberships. Data from bike share, transit, and other sources suggests that, especially for low-income people, making monthly membership available can decrease trepidation about trying bike share and increase sign-ups.

» Sticker price is more important than cost.

Deep discounts on annual memberships rarely attract significant numbers of low-income people and may tie up money that can be used for other equity initiatives. In focus groups, most low-income people express willingness to pay \$10-20 per month for bike share, provided that the payments can be spaced out over the course of the year and that the bike share system meets their mobility needs. Expressing prices in monthly installments may help reduce sticker shock.

» Keep equity initiatives simple.

Adding hoops – multiple steps, complicated verifications, the need to enroll at a limited number of specific locations – will reduce enrollment. Boston has the highest rate of discount membership sales of all U.S. systems, partially because Hubway’s administrators keep the subsidized membership process as simple as possible – a phone call with honor-system reporting on income or status.

» Make it easy to join.

In order to increase ridership, especially among low-income populations, make it easy to sign up for bike share. Taking a cue from transit, cities and operators should look toward technology that facilitates spontaneous enrollment, such as being able to buy monthly or annual access at the kiosk, when potential members are thinking about bike share in the first place. Apps that allow for on-the-spot sign up and access should also be explored.

» Measure your impact.

Gather before/after data to make sure programs are having the right impact. Key metrics to consider include: average number of rides per user by membership type, rides per bike per day, and rides from stations in low-income areas. Data from NYC suggests that billing ZIP code is a decent proxy for income if demographic data is unavailable.³⁶

» The kiosk is an opportunity.

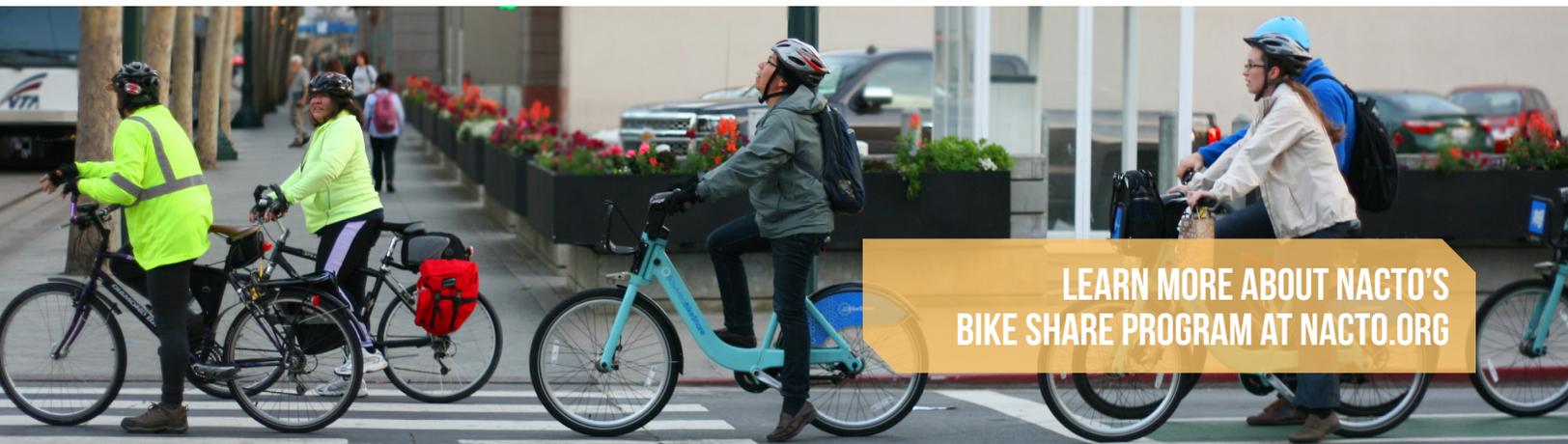
Especially for potential low-income riders, the physical bike share infrastructure – kiosk and bikes – is the best platform for conveying information about bike share. To bring in low-income riders, make sure that discount programs are listed clearly on the kiosk and that pricing information is clear and simple.

» Pricing alone is not enough.

People use bike share when it is convenient and makes their lives easier. Operators looking to increase ridership, especially among low-income populations, should ensure that low-income areas have a sufficient number of stations, densely placed, to make bike share a good value proposition for would-be riders.

- 1 Annual membership prices range from \$199 in San Diego to \$50 in Nashville and Chattanooga (as of summer 2015).
- 2 Until recently in the U.S., requested modifications to the standard pricing structure – annual membership/casual pass with initial free period and overage fees – were limited by the backend technology. In most systems, options other than the standard annual memberships or non-renewing short term passes required extensive, cost-prohibitive, time-consuming, manual work-arounds.
- 3 The membership options in U.S. bike share programs were initially modeled on European programs but without the massive European system subsidies that have kept annual prices extraordinarily low.
- 4 Credit cards were initially seen as essential to bike share security as they linked each trip to a specific rider and allowed operators to assess user and damage/loss fees as necessary. The very low theft rate in U.S. bike share to date has allowed system operators to reconsider this stance.
- 5 Examples of these programs include Bank on DC in Washington DC, the community development credit union membership discount in New York, cash payment options in the new Indego system in Philadelphia and the Divvy for Everyone program in Chicago.
- 6 Goddin, Paul, "The Good and the Bad of the Capital Bikeshare Member Survey," Urban-ish Blog, June 11, 2015. <http://paulgoddin.com/2015/06/11/the-good-and-the-bad-of-the-capital-bikeshare-member-survey/> (accessed 8/24/15)
- 7 Data provided by Boston Bikes. In Chicago, heavy promotion of the Divvy For Everyone program has resulted in the sale of over 800 discount \$5 memberships in the first two months, but this represents a fraction of the overall Divvy membership.
- 8 2013 FDIC "Nation Survey of Unbanked and Underbanked Households," October 2014 (<https://www.economicinclusion.gov/surveys/2013household/banking-status-findings/>)
- 9 Schuh, Scott & Joanna Stavins, "The 2011 and 2012 Surveys of Consumer Payment Choice," Federal Reserve Bank of Boston: Research Data Reports #14-1, September 29, 2014
- 10 Data provided by Boston Bikes.
- 11 CFED, "The Most Unbanked Places in America," http://cfed.org/assets/pdfs/Most_Unbanked_Places_in_America.pdf (accessed 8/24/15)
- 12 Carney, Michael, "Bike Sharing and the Unbanked: A study of the unbanked population in Chicago and best practices for their inclusion in bike sharing." University of Illinois at Chicago, 7/24/2012, pp. 8-16
- 13 Carney, Michael, "Bike Sharing and the Unbanked: A study of the unbanked population in Chicago and best practices for their inclusion in bike sharing." University of Illinois at Chicago, 7/24/2012, p.25
- 14 Interview with Claudia Setubal, Access Manager, Bicycle Transit Systems/Indego, 7/20/15 & CFED, "The Most Unbanked Places in America," http://cfed.org/assets/pdfs/Most_Unbanked_Places_in_America.pdf (accessed 8/24/15)
- 15 Hussain, Anum, "Hubway Research Presentation 2012," Emerson University, <http://www.slideshare.net/anumthussain/hubway-research-2012> (accessed 8/24/15)
- 16 Institute for Survey Research - Temple University. (2014). Bike Sharing in Low-Income Communities: An Analysis of Focus Group Findings. Philadelphia, PA: Hoe, N.D. & Kaloustian, T.K.
- 17 Institute for Survey Research - Temple University. (2014). Bike Sharing in Low-Income Communities: An Analysis of Focus Group Findings. Philadelphia, PA: Hoe, N.D. & Kaloustian, T.K.
- 18 Interview with Kate Fillin-Yeh, former Bike Share Program Director, NYCDOT, 8/24/15
- 19 Data provided by Boston Bikes.
- 20 Interview with Kim Foltz, Program Manager, Boston Bikes, 6/22/15. Women take about the same number of trips (~36 trips/year) regardless of subsidy. Subsidized members renew their memberships at roughly the same rate as non-subsidized members.
- 21 Applicants must be on public assistance or meet income guidelines based on household size; must live in the City of Boston and cannot be full-time students.
- 22 Email communication with Nicole Freedman, former Director of Boston Bikes, 8/14/15
- 23 Reprinted with permission from "Pricing and the Psychology of Consumption" by John T. Gourville and Dilip Soman. Harvard Business Review, September 2002. Copyright 2002 by Harvard Business Publishing; all rights reserved. See: <https://hbr.org/2002/09/pricing-and-the-psychology-of-consumption>
- 24 Gourville, John T. & Dilip Soman. "Pricing and the Psychology of Consumption" Harvard Business Review, September 2002, p. 90-96
- 25 Della Vigna, Stefano & Ulrike Malmendier, "Paying Not to Go to the Gym," The American Economic Review, June 2006, vol. 96, p.694-719 (<http://eml.berkeley.edu/~sdellavi/wp/gymempAER.pdf>)
- 26 Agrawal, Asha Weinstein, et al. "Getting around when you're just getting by: the travel behavior and expenditures of low-income adults" Minnetta Transportation Institute, January 2011, MTI 10-2, p.2
- 27 Murphy, Brian, Assistant City Manager for Community Development. "Re: Council Order #10 dated October 20, 2014 regarding Hubway membership." <http://rwinters.com/council/HubwaySubsidiesfinal.pdf> (accessed 8/24/15)
- 28 Institute for Survey Research - Temple University. (2014). Bike Sharing in Low-Income Communities: An Analysis of Focus Group Findings. Philadelphia, PA: Hoe, N.D. & Kaloustian, T.K.
- 29 While transit passes are typically offered on a monthly basis, as opposed to annual like bike share, the cost of the average monthly transit pass is on par with the average annual bike share pass, allowing for comparison across different time scales.
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- 31 Ogilvie, F. & A. Goodman. "Inequalities in usage of a public bicycle sharing scheme: Socio-demographic predictors of uptake and usage in London (UK) cycle hire scheme," Preventative Medicine, 14 May, 2012, p. 43
- 32 Interview with Kim Foltz, Program Manager, Boston Bikes, 6/22/15
- 33 Interview with Claudia Setubal, Access Manager, Bicycle Transit Systems/Indego, 7/20/15
- 34 Duvall, Andrew. "Denver B-Cycle: Evaluation of Users, Health Impacts, and Low-Income Neighborhoods" Kaiser Permanente Community Benefits, February 2015
- 35 Institute for Survey Research - Temple University. (2014). Bike Sharing in Low-Income Communities: An Analysis of Focus Group Findings. Philadelphia, PA: Hoe, N.D. & Kaloustian, T.K.
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This paper is made possible by a grant from The JPB Foundation to further the conversation around equity in bike share.



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