



Data analysis project

Ecobici: Buenos Aires bicycle sharing system

Pedaling Towards Success!

March 2024



Agenda

1. Context
2. How & When are bikes used
3. Where are bikes used
4. Opportunities
 - Repair points
 - Bike redistribution
 - Data model and User Behaviour
 - User experience
5. Summary



Context

Ecobici is a bicycle-sharing system, with around **4k bikes**, free for all residents of the country from Monday to Friday with up to four trips of 30 minutes each. To use the bikes on weekends or pedal for longer, there are different paid passes.

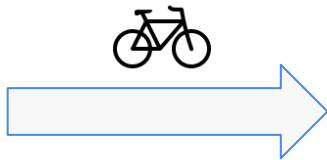
The **BsAs bicycle company** wants to increase in **18%** for the current year the adoption rate of bike rides.

Ecobici in 2023

Unique users

212K

Total users with at least 1 ride
during 2023



Ecobici in 2024

Adoption Rate YoY

+18%

Increase of 38K unique
users, 250k total users



How and When does Bs As pedal?

Overall Statistics

23 min

Avg ride
duration

2.6 M

Total rides

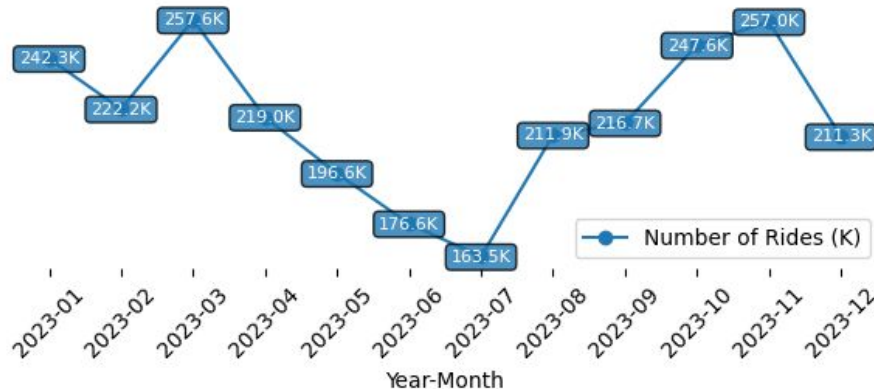
50.4K

Rides per week

12

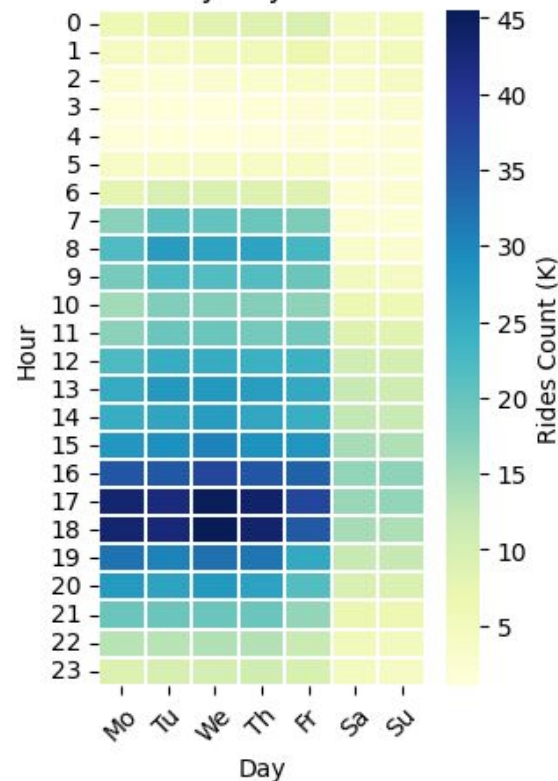
Rides/year per
user

Trend of Rides Per Month



- The bike system's **highest usage** is during the **warmer months**, particularly in March, October and November.
- **Weekdays** are the most popular for rides, with **Wednesday** leading at 18% of the total.
- The **mainstream hours** are from 4pm to 7pm, with 26% of all trips.

Rides by Day and Hour





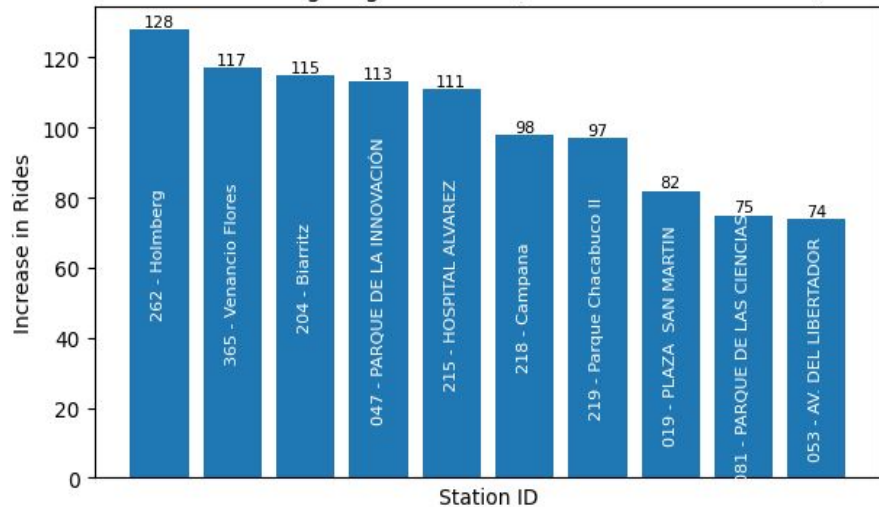
Where does Bs As pedal?

Popular vs Trending Stations

Most Popular Stations by Total Rides



Most Trending Origin Stations (November to December)



- Nearly 10% of all rides originate at just 10 stations, highlighting their crucial role in the network.
- The top 10 starting stations are very similar to the top 10 ending stations, with an 82% overlap.

- The most trending stations are defined by the largest increase MoM in rides (excl. new stations).
- Only two-thirds (66%) overlap, highlighting distinct trends in rider preferences for origin and destination.



Repair points opportunity

To ensure that bikes are in a good condition, repair stations must be able to meet demand.

17

Repair
stations

471

Bike
stations

Some repair stations are **geographically closer** to significantly more bike stations **than the average**.

6

MIN
stations per
repair point

27

AVG stations
per repair
point

59

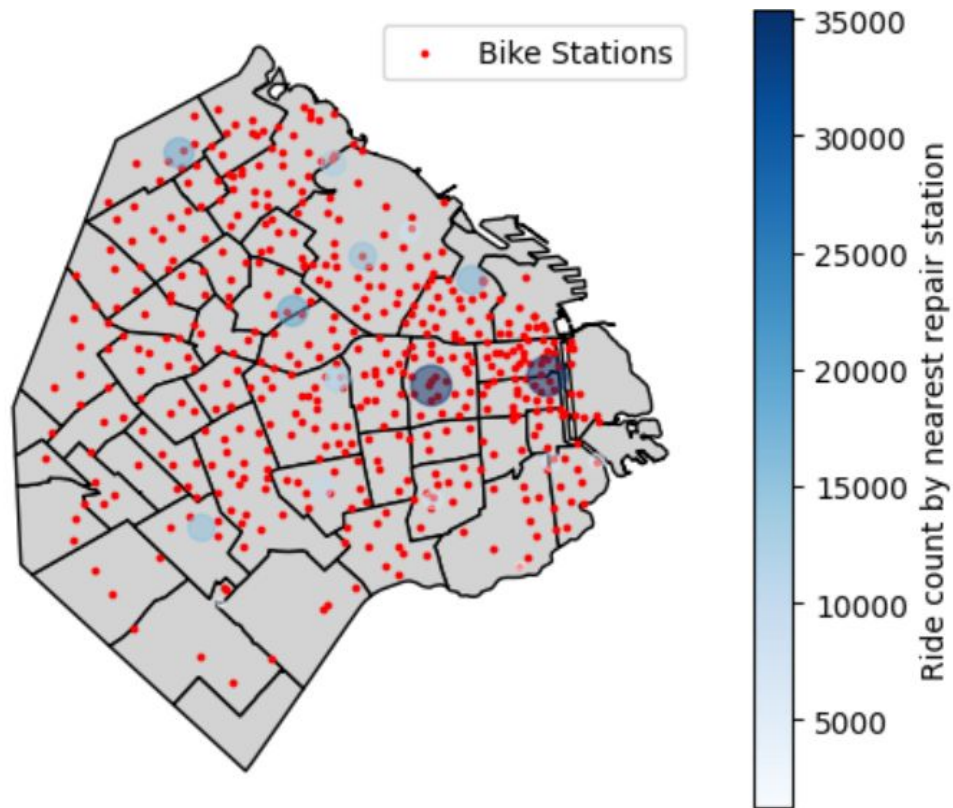
MAX
stations per
repair point

But repair points with the **highest number of trip starts nearby**, indicate **high demand**.

35k

Start trips in Once and Parque
Rivadavia

Target **Once** or **Parque Rivadavia** for new repair points.
Demand at these stations is **84% greater** than the next.



*Assumption: homogenous bike fleet (age and breakdown rate)

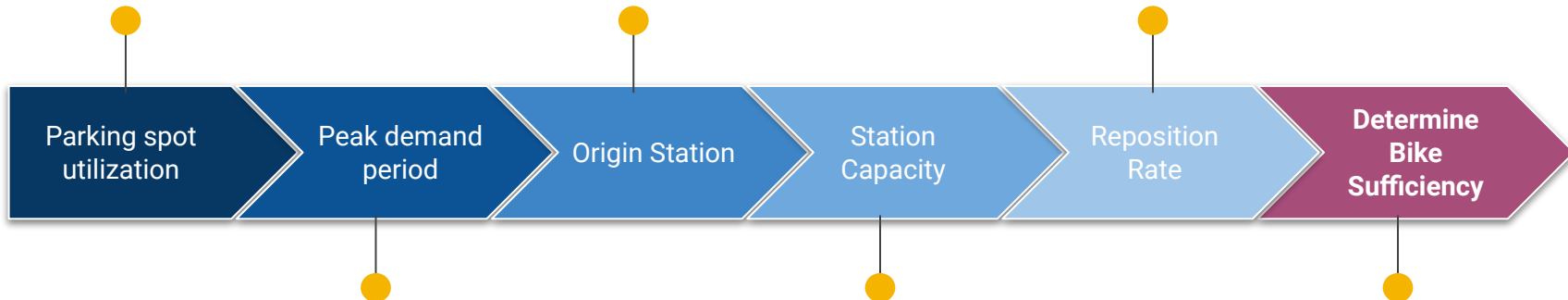


Bike redistribution opportunity

Estimate of 4k bikes.
Identified 8.5k parking
spots
~50% spots are empty.

Identify the station with the
**highest number of trip
origins** during the peak
demand period.

Assess # of bikes parked at
station after the selected
interval.
Calculate the **reposition rate** to
determine the **pace of bike
redistribution**.



Determine the **interval** with
the **highest demand**.
Timeframe of 20 minutes
(above median ride time per
trip).

Estimate **available bikes** at
the identified station,
considering half of the
parking spots.

Evaluate if **available
bikes meet projected
demand** for the
subsequent 20 minutes.



User behaviour analysis opportunity

Data Model AS-IS

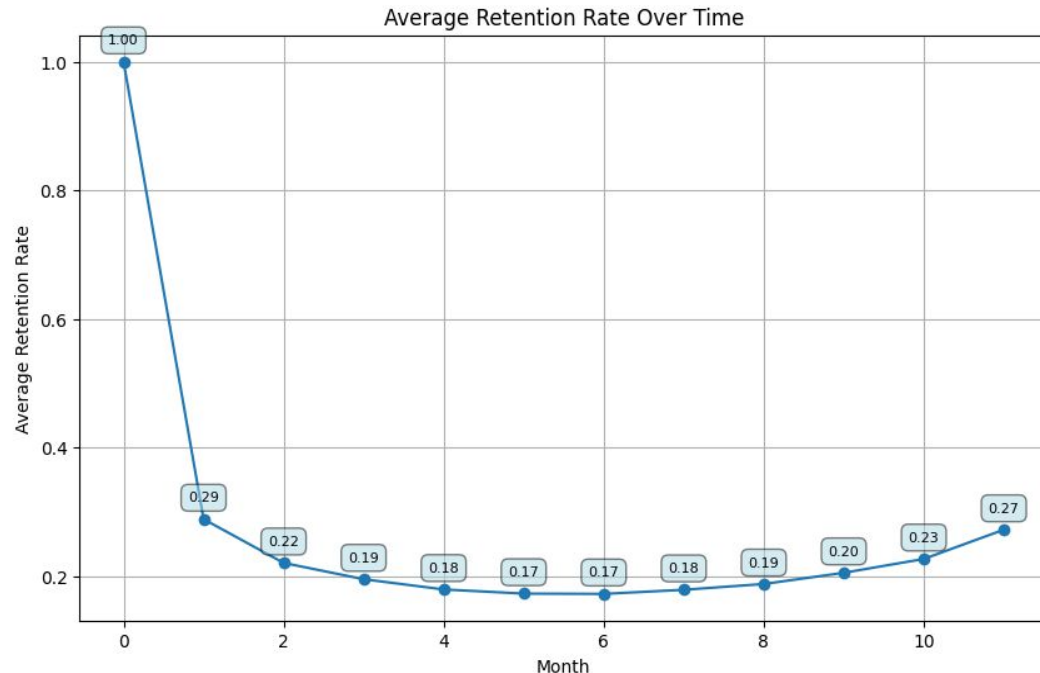


- Trips dataset **lacks linked user IDs**.
- **KPIs are estimated**.
- **Absence of user profile** limits strategies and understanding.

Data Model TO-BE



- **Link ride records to user IDs** for individual activity tracking.
- **Capture user profiles** for segmentation.
- **Implement event tracking** for user interactions.
- **Enhance data** for cohort analysis.



Low Retention: Just 17% of users keep riding after 6 months.



Dominant One-Timers: Over 70% only use bikes once.



User behaviour analysis opportunity

User lifecycle - Main KPIs

Acquisition:

- Conversion rate
- New users

Activation:

- Active users (MAU)
- Time to activation

Retention:

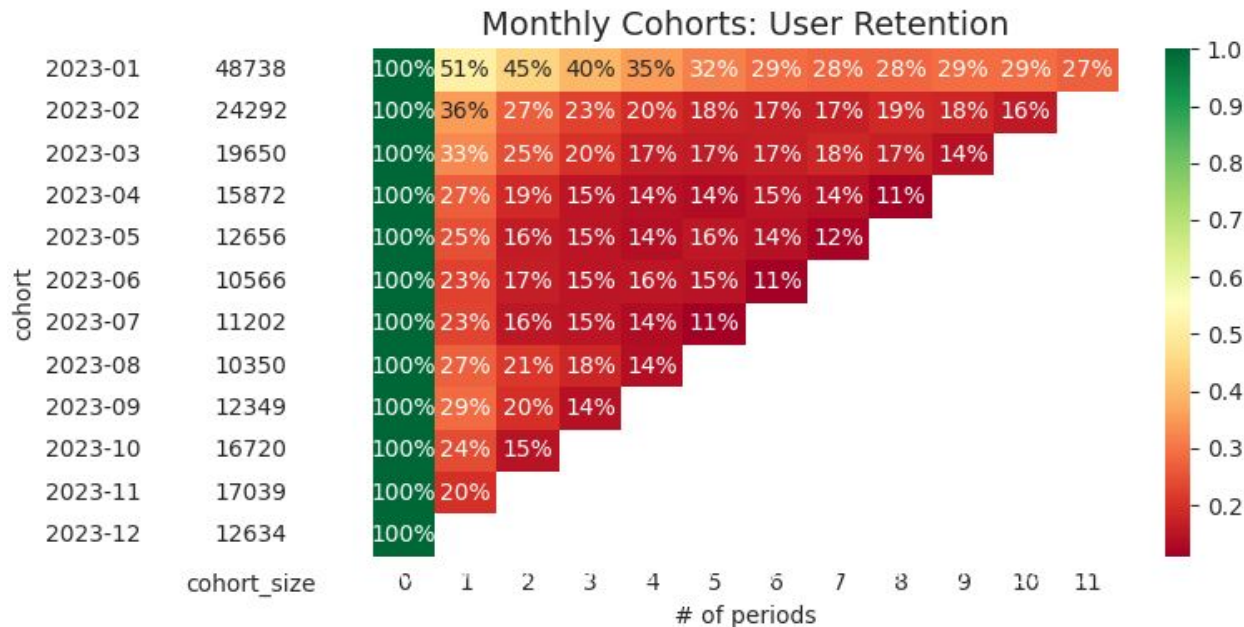
- Retention rate

Engagement:

- Frequency of rides

Churn:

- Churn rate



- ❑ User acquisition has a decreasing trend.
- ❑ January cohort has a higher retention (27%) than all others.



User experience opportunity

Smart Station Filtering

Filters stations by user location, prioritizing stations with the most available bikes.

Data: Location, bike availability

Bike Availability Alerts

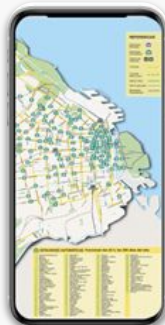
Users receive notifications when preferred stations reach a desired bike availability threshold.

Data: user preferences

Multimodal Integration

Combines bike rides with public transportation for seamless city journeys.

Data: user planning, public transportation schedule



In-App Virtual Tour

Virtual tour guiding users through the registration and key features.

Data: Conversion rate, time in screen

Gamified Rewards

Awards points and badges, unlocking benefits.

Data: User activity, points earned, rewards redeemed

Fitness Integration

Tracks ride data (distance, calories) and connects with fitness apps to motivate users.

Data: user profile, ride data

Guided Tours

Accesses guided bike tours within the app, showcasing city attractions.

Data: City attractions location, tours popularity



Summary

To achieve an 18% increase in adoption rate, addressing the challenge requires a comprehensive approach from three distinct perspectives:

Data Model



Include **user_id** and **user profile** for **lifecycle analysis** and **segmentation**.

Implement **bike_id** and **status** for **deeper understanding**.

Track **events** for further analysis of **new features**.

Bikes availability



Ensure **bike availability** for **peak weekday afternoons** and **warmer months**.

Prioritize repair points near areas with **high bike usage** to address breakdowns quickly.

User experience



Include **new features** to enhance **user experience** and **encourage ridership**, like station alerts and gamification.