

Case study: How does a bike-share navigate speedy success?

Introduction

Welcome to the Cyclistic bike-share analysis case study! In this case study, you work for a fictional company, Cyclistic, along with some key team members. In order to answer the business questions, follow the steps of the data analysis process: **Ask, Prepare, Process, Analyze, Share, and Act**. Along the way, the **Case Study Roadmap** tables — including guiding questions and key tasks — will help you stay on the right path.

Scenario

You are a junior data analyst working on the marketing analyst team at Cyclistic, a bike-share company in Chicago. The director of marketing believes the company's future success depends on maximizing the number of annual memberships. Therefore, your team wants to understand how casual riders and annual members use Cyclistic bikes differently. From these insights, your team will design a new marketing strategy to convert casual riders into annual members. But first, Cyclistic executives must approve your recommendations, so they must be backed up with compelling data insights and professional data visualizations.

Characters and teams

- **Cyclistic:** A bike-share program that features more than 5,800 bicycles and 600 docking stations. Cyclistic sets itself apart by also offering reclining bikes, hand tricycles, and cargo bikes, making bike-share more inclusive to people with disabilities and riders who can't use a standard two-wheeled bike. The majority of riders opt for traditional bikes; about 8% of riders use the assistive options. Cyclistic users are more likely to ride for leisure, but about 30% use the bikes to commute to work each day.
- **Lily Moreno:** The director of marketing and your manager. Moreno is responsible for the development of campaigns and initiatives to promote the bike-share program. These may include email, social media, and other channels.
- **Cyclistic marketing analytics team:** A team of data analysts who are responsible for collecting, analyzing, and reporting data that helps guide Cyclistic marketing strategy. You joined this team six months ago and have been busy learning about Cyclistic's mission and business goals—as well as how you, as a junior data analyst, can help Cyclistic achieve them.
- **Cyclistic executive team:** The notoriously detail-oriented executive team will decide whether to approve the recommended marketing program.

About the company

In 2016, Cyclistic launched a successful bike-share offering. Since then, the program has grown to a fleet of **5,824 bicycles** that are geotracked and locked into a network of **692 stations** across **Chicago**. The bikes can be unlocked from one station and returned to any other station in the system anytime. Until now, Cyclistic's marketing strategy relied on building general awareness and appealing to broad consumer segments. One approach that

helped make these things possible was the flexibility of its **pricing plans: single-ride passes, full-day passes, and annual memberships**. Customers who purchase **single-ride or full-day passes are referred to as casual riders**. Customers who purchase **annual memberships are Cyclistic members**. Cyclistic's finance analysts have concluded that annual members are much more profitable than casual riders. Although the pricing flexibility helps Cyclistic attract more customers, Moreno believes that maximizing the number of annual members will be key to future growth. Rather than creating a marketing campaign that targets all-new customers, Moreno believes there is a solid opportunity to convert casual riders into members. She notes that casual riders are already aware of the Cyclistic program and have chosen Cyclistic for their mobility needs. Moreno has set a **clear goal: Design marketing strategies aimed at converting casual riders into annual members**. In order to do that, however, the team needs to better understand how annual members and casual riders differ, why casual riders would buy a membership, and how digital media could affect their marketing tactics. Moreno and her team are interested in analyzing the Cyclistic historical bike trip data to identify trends.

Ask Phase

Three questions will guide the future marketing program:

1. How do annual members and casual riders use Cyclistic bikes differently?
2. Why would casual riders buy Cyclistic annual memberships?
3. How can Cyclistic use digital media to influence casual riders to become members?

Prepare Phase

RStudio, use the **Divvy 2019 Q1 and Divvy 2020 Q1 datasets**. This is public data that you can use to explore how different customer types are using Cyclistic bikes. But note that data-privacy issues prohibit you from using riders' personally identifiable information. This means that you won't be able to connect pass purchases to credit card numbers to determine if casual riders live in the Cyclistic service area or if they have purchased multiplesingle passes

- Where is your data located?
- How is the data organized?
- Are there issues with bias or credibility in this data? Does your data ROCCC?
- How are you addressing licensing, privacy, security, and accessibility?
- How did you verify the data's integrity?
- How does it help you answer your question?
- Are there any problems with the data?

Process Phase

- What tools are you choosing and why?

- Have you ensured your data's integrity?
- What steps have you taken to ensure that your data is clean?
- How can you verify that your data is clean and ready to analyze?
- Have you documented your cleaning process so you can review and share those results?

Analyse Phase

- How should you organize your data to perform analysis on it?
- Has your data been properly formatted?
- What surprises did you discover in the data?
- What trends or relationships did you find in the data?
- How will these insights help answer your business questions?

Share Phase

Open your preferred version of R-

1. Import your data from Divvy 2019 Q1 and Divvy 2020 Q1.
2. Make columns consistent and merge them into a single dataframe.
3. Clean up and add data to prepare for analysis.
4. Conduct descriptive analysis.
5. Export a summary file for further analysis.

Now that you have performed your analysis and gained some insights into your data, create visualizations to share your findings. Moreno has reminded you that they should be sophisticated and polished in order to effectively communicate to the executive team. Use the following Case Study Roadmap as a guide:

- Were you able to answer the question of how annual members and casual riders use Cyclistic bikes differently?
- What story does your data tell?
- How do your findings relate to your original question?
- Who is your audience? What is the best way to communicate with them?
- Can data visualization help you share your findings?
- Is your presentation accessible to your audience?

Act Phase

Now that you have finished creating your visualizations, act on your findings. Prepare the deliverables Morena asked you to create, including the three top recommendations based on your analysis. Use the following Case Study Roadmap as a guide:

- What is your final conclusion based on your analysis?
- How could your team and business apply your insights?
- What next steps would you or your stakeholders take based on your findings?
- Is there additional data you could use to expand on your findings?