INTRODUCTION

Indego is a bike-sharing service that was launched in 2015 and is currently operated by the City of Philadelphia in partnership with Bicycle Transit Systems. Indego has stations spread out over the city's core and surrounding neighborhoods. The service offers residents and visitors of Philadelphia a sustainable, healthy, and ecological transit option. In addition to conventional pedal cycles, Indego also offers electric bikes for quick travels. Users can select from three types of passes including a day pass, a 30-day pass (Inedgo30), or a year pass (Indego365).

A total of 878,636 journeys were logged by Indego users in 2022. Indego30 pass holders made up 70% of these journeys, Indego365 pass holders accounted for 23%, and day pass holders made up 7% of them. There are 180 active stations throughout the city.

In this analysis, we utilized data directly from Indego's website. This dataset provides information on the usage patterns of the Indego bike-sharing service. By studying this dataset, we aim to gain insights into the factors that drive usage of the Indego bike-sharing service, as well as increase economical transportation in Philadelphia.

CHALLENGES & DISCOVERY

Our challenge in this dataset is to identify any potential outliers or anomalies in the trip data. For example, there may be trips that are unusually long or short or some that are unlikely based on the distance between the start and end stations. Identifying these outliers can help with bike or station issues, or with identifying any potential fraud or misuse of the bikes.

Ride fee totals are not included in the dataset, so it's difficult to analyze the profitability or make comparisons with other bike-sharing programs. It also lacks data on the riders themselves. Knowing details of who our users are would have a great impact on marketing. Despite the absence of rider information and the cost of rides, we can still identify popular stations and trip durations. This information can be used to optimize station placement and can also provide insight into transportation needs in different neighborhoods or regions of the city.

We can also examine seasonal trends in trip data to understand ridership behavior. For instance, ridership may be higher during the summer months than winter months. Understanding these patterns can help with operational planning and management as well as with forecasting future ridership.

One of our analyses is calculating the trip duration for each station by month and day of the week. This analysis can be used to optimize both bike and station management and planning. It can also provide insight into rider behavior and preferences. The frequency of bike usage across different neighborhoods or regions of the city can help to identify potential areas for expansion.

In addition, we can analyze the distribution of passholder types, which can provide insight into the demographics of Indego users. However, without our user's information, we cannot fully understand the customer base and the potential impact of the bike-sharing program on different demographics.

Although rider information and cost data is not included in the dataset, there are still many potential insights that can be gained from it. By examining the data in detail, we can identify transportation patterns and infrastructure needs, optimize both bike and station management and planning, and provide ecological transportation options for the City of Philadelphia.