**Has the COVID-19 Pandemic has Impacted Bikeshare Ridership in Toronto?**

The COVID-19 Pandemic has negatively impacted many businesses, while causing an influx of new customers for others. For example, many restaurants in Toronto have been negatively impacted by COVID due to the ever-changing restrictions and lack of customers willing to venture out and buy food. On the other hand, the cycling industry has exploded with many cycling shops receiving upwards of 400 inquires a day about stock availability [1]. In 2020 the demand of bicycles increased by 75% and in 2021 the demand was up by 130% and the cycling retailers simply could not keep up [1]. This sudden rise in demand for cycling was caused by individuals using it as a form of exercise or using cycling to commute instead of a crowed (and potentially risky in terms of COVID) TTC bus. With bicycle stocks being severely depleted many may have turned to using the Toronto Bikeshare program as a potential solution to their commuting dilemma. However, the bikeshare program is inherently COVID unsafe since you are sharing bicycle with other users and there are no clear cleaning procedures being implemented by the bikeshare [2]. This may even cause ridership to drop since users might feel unsafe while using this service. To answer this question, we will be using data science to interpret how the pandemic is impacting bikeshare ridership.

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***Figure 1:*** *Bike share ridership and COVID-19 cases from January 2018 to December 2020.*

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***Figure 2:*** *Average monthly ridership (average from years 2018 to 2020)*

Based on the ridership and COVID cases date plotted in Figure 1, we can clearly see that COVID did not have a significant impact in ridership. In fact, we see that there is a year over year increase in ridership. The peak ridership (September each year) is increasing every year, even in 2020 when the pandemic was is full effect. We also see that there is a significant drop in ridership in November 2020 right when there is a sharp increase if COVID cases. Although the ridership dips lower than usual, this drop is normal and is easily explained by the graph in Figure 2. This drop in ridership is not caused by COVID but may be exaggerated because of it (ridership dips lower than previous years). The Figure 2 graph shows that there is a cyclical (no pun intended!) nature to ridership. We see that in the hotter summer month, ridership picks up as more people are willing to cycle to work. The only real COVID impact that is visible on this data visualization is between January 2020 and May 2020. Between the peaks there is a baseline ridership, these are the people using the bikeshare for their daily commute year-round. Typically, we see that this baseline ridership only lasts for about 2.5 months (as seen between January 2019 and May 2019). However, because of the rise of COVID during the start of January 2020 we see that this baseline lasts longer than usual but the ridership starts increasing again as people become more familiar with standard operations and procedures of living though a pandemic. Overall, the pandemic has not had any significant effect on bikeshare ridership. Instead, the data shows that peak ridership has grown in 2020 despite there being a pandemic and we expect the ridership to continue to grow in the future.

**References**

[1] J. Mazerolle, "When will bicycle shops be fully stocked again? Try 2023 | CBC News", *CBC*, 2021. [Online]. Available: <https://www.cbc.ca/news/business/bicycle-boom-industry-turmoil-covid-19-1.5956400>

[2] "Bike Share Toronto Covid-19 Update", *Bike Share Toronto*, 2021. [Online]. Available: <https://bikesharetoronto.com/news/covid-19-update/>