

# **Analysis of Bus Stops in Christchurch, New Zealand**

## **Description of the Business Problem**

There is a saying that New Zealand is a country built on wheels. The meaning of this saying is that (almost) everyone drives a car in New Zealand. However, some individuals do not have a car. In this case, most of them have to use public transport such as buses on a daily basis. Regarding the buses in New Zealand, there are a number of issues. They often fail to their time schedules due to different reasons. Also, some people think bus stops are difficult to find or too far from them. Before buying my car, I also suffered from this sometimes. As a student based in Christchurch, New Zealand, I would like to analyse the arrangement of the bus stops in Christchurch and make recommendations for improving the arrangement. This report can be useful for the Christchurch City Council to improve bus service as well as customer experience.

## **Data and Analysis Method**

According to the business problem, the data used to solve the problem will be Canterbury open data on bus stops, and it will be obtained through a GeoJSON API. However, the open data contains information about all bus stops in Canterbury rather than those in Christchurch (Christchurch is one of the regions of Canterbury, New Zealand). Owing to this, the open data will be further processed to select bus stops in Christchurch only. After completing this step, the processed data will be visualised and clustered using Folium and KMeans. Based on visualisation and the observation of the clustered bus stops, recommendations for improving the arrangement of bus stops in Christchurch will be accordingly produced.