

## Immigration, Travel and Trade Connection Between New Zealand And Foreign Countries

-An analysis to assist planning and developing international logistics network

### Introduction

International shipping and freight services play a key role in globalization and are important for a country like New Zealand. Improving and expanding logistics network is not only highly demanded in developing foreign trade for New Zealand but also implies a huge business opportunity for entrepreneurs. However, investment for developing an international logistics network is huge and has to withstand a lot of economic turbulence. Here an analysis was performed in order to explore connection between New Zealand and other countries and regions. In other words, what are countries and regions having the highest demand of shipment and freight needs? Finding in this analysis is expected to provide insights into the question and help local logistics companies in planning their new shipping lines and logistics network.

### Methods

#### Date Collection

Data used for this analysis come from StatsNZ (<https://www.stats.govt.nz/>), an official department collecting and providing statistic data for all aspects of New Zealand. The data have two parts: goods and services trade by country (by Sep. 2018) and international travel and migration (by Oct. 2018). The data were downloaded and analysed in Python programming language.

#### Exploratory Analysis

Exploratory analysis main focused on data quality and distribution. By the exploratory analysis appropriate factors and terms were selected for further clustering and regression model. In detail, the exploratory analysis consisted of 1) examining the raw data, 2) standardizing data for further analysis, and studying data plots for understanding data features and trends.

#### Statically Modelling

In order to understand the connection between New Zealand and other countries, a hierarchical clustering was performed. The choosing of the model was informed by results in the preparatory step, aka, the exploratory analysis.