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Proposal on Being Master Chefs to Fight Against COVID-19

Problem Statement

Fake news, untrue information presented as news, has become a critical issue in Hong Kong. During the pandemic of the novel coronavirus, there were rumours of a shortage of necessities in Hong Kong. That baloney led to panic buying and chaos. To understand the current circumstances quickly, we are going to visualise the trend of pandemic disease and study the correlation among the number of confirmed cases and the wholesale prices of major fresh food in Hong Kong.

Motivation

At the late end of 2019, the novel coronavirus, also known as COVID-19, has become an epidemic and communicable diseases around the world. To fight against the novel coronavirus, classes are suspended and many companies recommend their employees to work from home. Meanwhile, the Hong Kong Government banned on dine-in services a couple of times. During the ages of quarantine, cook at home becomes a common activity to kill time. We aim to verify whether the change in cooking behaviour does lead to any possible in shortage and price increases in necessities.

Data Sources

Since the thesis statement involves multiple topics, we are going to grab data from a variety of sources. *Novel Corona Virus 2019 Dataset* from Kaggle provides information for visualising the past situation related to the novel coronavirus. *Wholesale Prices Of Major Fresh Food* published from DATA.GOV.HK offers the daily average price on different food categories. To ensure the claims of causality, we also research some summarised statistics from YouTube Culture and Trends to build a linkage between the novel coronavirus and the cooking behaviour.

Data Processing Approaches

The blueprint of the project is using a time series model to visualise the overall trend and investigate the association among the confirmed cases and different types of fresh food. We propose statistical testing on the model assumption and discover any potential issues within the defined model. Subsequently, we are going to forecast the confirm case trend in the future.

Planned Analysis/ Implementation/ Experimentation

We intend to use a multiplicative time series model on the number of confirmed cases in Hong Kong. Moreover, the Kruskal Wallis test (check for seasonality) and Durbin Watson test (check for autocorralation) favour our research on validating the model's characteristics. We also plan to adopt linear regression models to study the correlation between the interested variables. After we obtain enough information, we would concentrate on forecasting the trend by exponential smoothing method. Hence, we will comment on the topic based on the statistic we found.