# Group Project 1: Estimation of demand function for fish sold at a wet market in Singapore

## *Due 22 September at 11:59pm*

Wet markets in Singapore are generally open-air, partially sheltered spaces populated with dozens of vendors selling fresh food products, such as poultry, pork, vegetables, fruits, and spices. The name, 'wet market', refers to the routine acts of hosing down and washing the market's floors with water to keep areas clean and sanitary. As is the case in nearby Malaysia and across Southeast Asia, wet markets are often hot, humid, pungent, and noisy, with a maze of stalls arranged along narrow aisles with slippery floors. Shoppers typically engage in bargaining and banter with vendors, which many feel is one of the reasons that wet markets have a certain charm and authenticity that modern supermarkets cannot replicate.[1]

One of the food products sold at wet markets are fish. Fish are heterogeneous, highly differentiated products. There are anywhere between one hundred and three hundred varieties of fish sold at a wet market. There are over fifteen varieties of shrimp alone. Within each variety, there's small fish, large fish, medium fish, fish just caught, fish that have been around a while. There's so much heterogeneity that shoppers often want to examine fish personally. The market functions just like a two-sided platform matching buyers to sellers.

In this project, you are asked to estimate the demand function of fish by using data on fish sales at a particular wet mart. The data is in Data-GP1.csv, and the data items are as follows:

| | |
|---|---|
| Mon | 1 if Monday, 0 otherwise |
| Tue | 1 if Tuesday, 0 otherwise |
| Wed | 1 if Wednesday, 0 otherwise |
| Thu | 1 if Thursday, 0 otherwise |
| Date | Date in yymmdd format |
| Stormy | 1 if wave height greater than 1.5m, and wind speed greater than 18 knots. Based on moving averages of the last three days' wind speed and wave height. |
| Mixed | 1 if wave height greater than 1m, and wind speed greater than 13 knots, excluding Stormy days. Based on moving averages of the last three days' wind speed and wave height. |
| p | **Log** average daily prices per kg of fish |
| q | **Log** average daily quantity sold of fish in kg |
| Rainy | 1 if rainy weather on shore |
| Cold | 1 if cold weather on shore |
| Wind | Wind speed in knots |

The maximum length of the report is four pages, not including possible appendixes. You may use either R or Python (with an LLM such as ChatGPT, please include your prompt in the submission). **Submit the**

---

[1] See, for e.g., https://kontinentalist.com/stories/wet-markets-in-singapore-are-our-heritage-and-tradition for more information on wet markets in Singapore.

**report and code by Canvas, one submission per group. Please have the names and the student numbers on the cover page.**