In my variation of our project, I tried to find if the correlation between the mean price of S&P 500 stock and interest of the population in particular goods in the Netherlands.

We have selected the following items:

1.Cosmetica(Cosmetics)

2.Snoep(candy)

3.Delivery

4.Tupperware

After our research, we understood that because of COVID-19, people tended to stay home the number of people ordering food and beauty items has increased. Thus, we selected Cosmetics and Delivery. As the number of orders has increased, restaurants need more Tupperware. Finally, provided that many individuals were forced to stay home, the number of depressed and lonely people decreased. A study in the late 90th proved that people with those symptoms tend to consume more sweets; hence we selected Candies.

We selected a period from March till September 2020 as it was a fatal period of the pandemic.

Now let us go through it in more details,

First, we extracted a daily number of searches for each item (Appendix A, figure 1.1). And we found that in the Netherlands, the numbers for each group. Thereafter, we were curious to check which province was most interested in each group each day(the trend was the same for each week). As illustrated in graph 1.2 from Appendix A, Flevoland was leading in Cosmetics, while Friesland and North Holland, Zeeland were leading in Snoep, Delivery, and Tupperware.

In the next step, we extracted weekly data for S&P 500 for the same period. The graph provided us with the following information: Date, Open, High, Low, Close, Adj Close, Volume.”

After analyzing each column, we realized that we would explore only Date, High and Low Columns, dropping the rest of them. Then, we found the mean of High and Low and called the column “date\_average”(see Appendix B Figure 1.3).

Finally, we decided to merge both DataFrames according to the date(Figure 1.4 C). The idea behind that step was to be able to graph the correlation behind both of the DataFrames. After that, we decided to find a correlation between average data price per week and weekly interest in each good.

The result was following:

Cosmetics

Chart, scatter chart

Description automatically generated

Snoep

Chart, scatter chart

Description automatically generated

Delivery

Chart, scatter chart

Description automatically generated

Tupperware

Chart, scatter chart

Description automatically generated

Analyzing the results:

Despite our initial expectations, not all items analyzed showed a strong correlation. And while Cosmetics and Snoep showed a strong negative correlation, Tupperware and Delivery constituted a weak negative correlation. Besides, as seen from all the graphs, there were many outliers in the experiment. We could observe a high number of searches in Tupperware (426), despite the relatively high trading price of the stock (3108). Similar cases could be observed in other items as well.

In conclusion, we would like to state that the current pandemic increased interest in the number of products in the Netherlands and across the globe. Even though we can observe a stable increase in the number of searches as prices of stock decrease, there were enough cases that show that price changes were not the only reasons for the given trend. Our goal for the given project would be to continue the research and increase the time frame to a much larger period. A possible increase in accuracy might also be yielded by comparing the data with pre-corona records and observe the difference. Meanwhile, the project brought some impressive results; more work needs to be done.

**Appendix A**

Table

Description automatically generated

Figure 1.1

Table

Description automatically generated

Figure 1.2

**Appendix B**  
Table

Description automatically generated

Figure 1.3

**Appendix C**Table, Excel

Description automatically generated

Figure 1.4