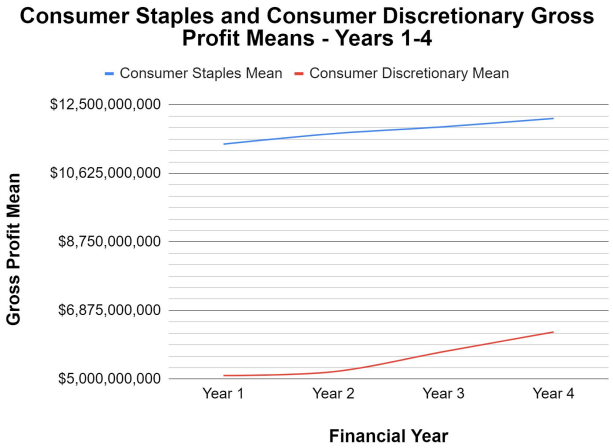
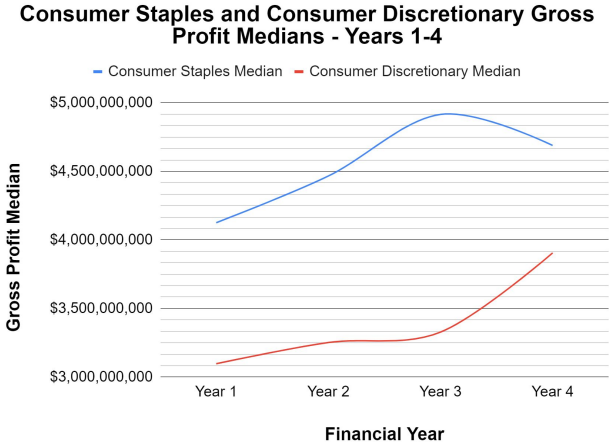
How did the Gross Profit differ across Years 1-4 between the Consumer Staples and Consumer Discretionary sectors?





Link to Google Sheets spreadsheet:
https://docs.google.com/spreadsheets/d/1OGcJXgjFsSD755KNkgJKDBiV5r6O4VWdGBvKbwrFZ-w/edit?usp=sharing

Note on data: I deleted COTY from my analysis (Consumer Staples) as the data was from several years before Year 1 for the other companies, and was a clear outlier with very low values. When we remove COTY, the differences between Staples and Discretionary decrease.

After analyzing the data for both the Consumer Staples and Discretionary sectors across Years 1-4, it was clear to see that the 2 sectors differ widely In terms of gross profit, with Staples having higher values in all categories (in the measures of spread, center, etc.).

The range for both sectors is quite large, but again, Staples has a significant lead in this category, with a range of approximately $120 billion versus Discretionary's $47 billion. These large ranges show that the data is rather spread out, and it seems likely that the standard deviation will be a better indication of spread within this data set.

Values for each of the sectors do not differ nearly so widely between the 1st quartile (Staples leading by ≈ +22%) and the median (Staples= +29%) however, which shows there is a slighter difference between the 2 sectors in this 25% of the data (gross profits between about $2 and $5 billion) than in the other 75%.

To show these differences more clearly, I created charts for both the means and the medians across Years 1-4 for both sectors. The graph for the means shows us that there is a large difference in means between the 2 sectors and that both had steadily increasing means over Years 1-4. The large standard deviations across Years 1-4 for the 2 sectors (approximately $6 billion for Discretionary and $21 billion for Staples) go to show that the mean is perhaps not the best measure to look at the center of this data for each sector.

When graphing the median on the other hand, we are able to see a more detailed/close up representation of the values, as well as a curve in the data, which was not visible when looking at the mean. Between Years 2 and 3, the Discretionary median plateaued before increasing again in Year 3, while the Staples median steeply increases between Years 2 and 3 and then decreases going into Year 4, which paints a different picture than when looking just at the steady increase of both sectors in the graph of the means. Discovering the reason behind these curves would likely be of interest to businesses in these sectors.