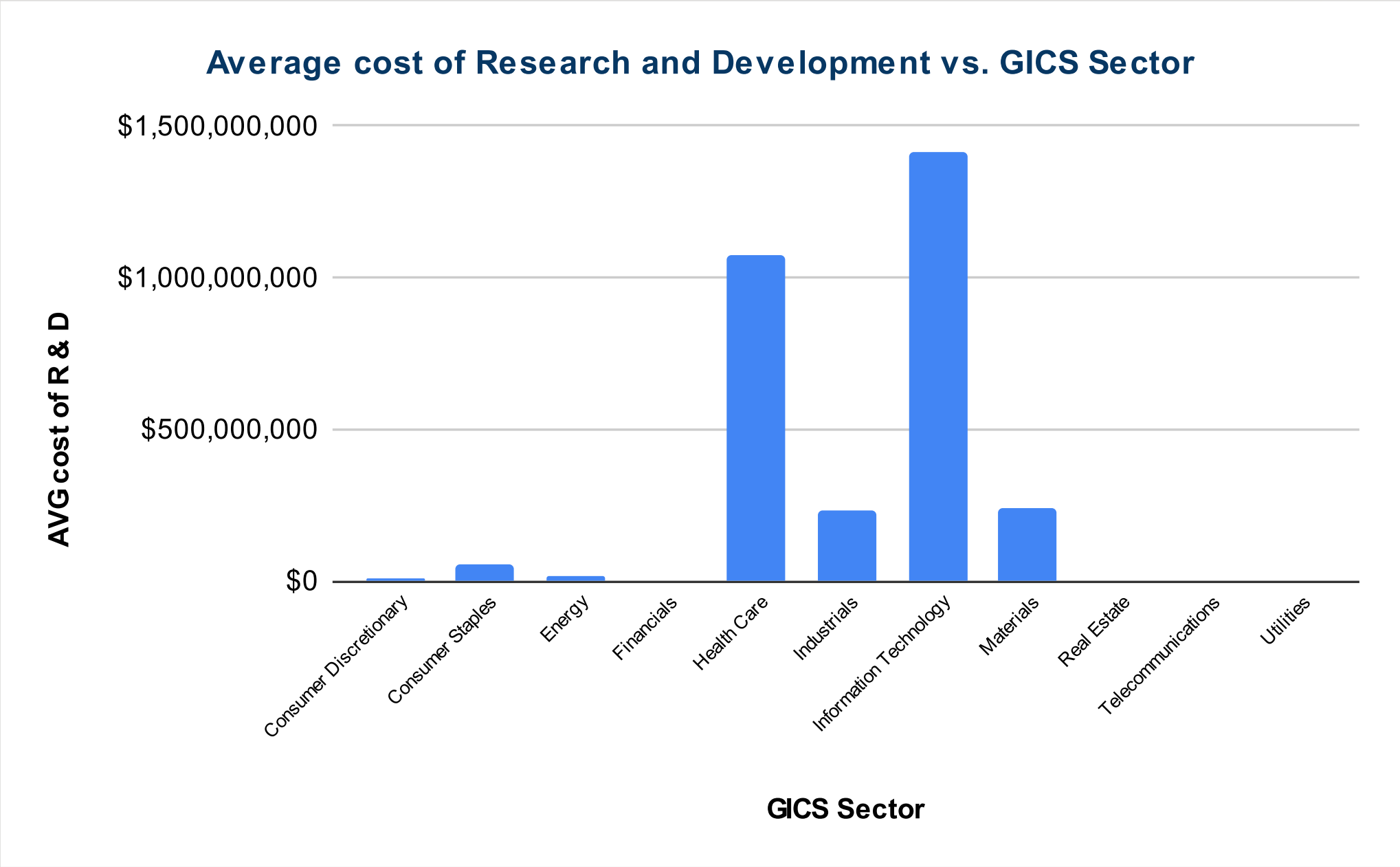


Business Analytics Nanodegree

Project 2: Analyze NYSE Data

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Q1: What's the average cost of R&D for each GICS sector?



This bar chart is conveying the average cost of Research and Development with the corresponding GICS sector for all years. It clearly shows us how some GICS sector exceed others in terms of R&D cost. For example sectors such as *“Information Technology”* and *“Health Care”* tends to have a much higher R&D cost, comparing to the rest. Which gives us an idea on the operating expenses and operating income costs.

The mean of *“Information Technology”* is (\$1,41 billion), whereas the mean of *“Health Care”* is approximately (\$1,17 billion). Also the range of *“Information Technology”* is (\$12 billion) which is higher than the range of *“Health Care”* (\$8 billion). This means that variability in *“Information Technology”* sector is higher, since the range is more spread out.

Additionally, the standard deviation for *“Information Technology”* is about (\$2,5 billion) and is higher than the standard deviation for *“Health Care”* which is (\$1,8 billion), this indicates a higher variability in R&D expenses in the *“Information Technology”* sector compared to *“Health Care”* sector.

Q2: What's the average Gross Profit for each GICS sector throughout the years?

In this multi-series-column chart, we're visualizing the average of Gross Profit for each GICS sector for every year.

We notice how the Gross Profit varies for each GICS sector throughout each year. The Gross Profit seems consistent for each sector, mostly increasing in the final year (year 4). However we also see how the *"Telecommunications Services"* sector has the highest Profit Gross of all. It reaches up to 35 billion dollars from year 1 to year 4.

The range for Gross Profit in *"Telecommunications Services"* sector is higher than, for example *"Financials"* sector, which tells us that Gross Profit in *"Telecommunications Services"* is more volatile and less stable than in other sectors.

The standard deviation for *"Telecommunications Services"* sector is about (\$1,5 billion) and is way higher than the standard deviation for *"Financials"* sector which is around (\$159 million), and it indicates that *"Telecommunications Services"* sector has more variability in Gross Profit compared to all sectors.

