Business Analytics

Forbes

University Canada West (UCW)

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Professor Sergey Pochikovskiy

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Executive Summary

This report covers a high-level analysis on "World's Largest Companies" according to Forbes Magazine (Kaggle, 2023). Being a source of information, Forbes helps the readers surf through key insights derived from markets and businesses in general. Among the many information the magazine provides, Profit per country and company, market value and similar information could be sourced based on the broader evaluations given by the Forbes staff. Being in a highly competitive industry with many large and strong players, business analysis is an essential tool for Forbes to stay relevant and competitive with many other players.

In addition, global changes after Coronavirus's outrage after 2020 definitely became an issue for many or the world's biggest businesses across the globe as there were new protocols made and commerce became affected negatively. However, companies such as Apple took advantage of digitality and could increase net income from 2021 to 2023 despite of the crisis which led the world to become paralyzed (Sanyit, R., Singh, R., Sadeque, S., Harrigan, S., 2023). Another huge company which battles constantly first positions is ARAMCO as prices for oil rise per year (Said, S., 2023). Same applies to some of the world's banks upon the listings for top rankings.

There is uncertainty about 2024 as Forbes is yet set to present their next reports based on the current analysis done inside of the global market within "Profit", "Sales", "Assets", "Market Value" and any disruptions inside of the globalization done by the major companies. Indeed, it is possible to have any thought's about any variables for the next year's outcomes as on average "Total Sales" round up to $151,965,959,596.00. The value mentioned before is essential for most calculations as it marks a possible outcome for 2024's "Total Sales" as an average for future considerations. Finally, United States of America (USA), China and Saudi Arabia establish as the most powerful economies for any projects or business opportunities among a huge dominance from corporations and industries in the countries discussed for any of the leaderboards in 2024.

Introduction

Assessing business trends and patterns is an essential part in business analytics. Research and analysis are conducted using various tools such as data visualization using dashboards, hypothesis testing and many statistical tools to achieve the intended objective of identifying trends and patterns.

This report covers a detailed analysis on Forbes Magazine, one of the largest financial and economical magazines as of 2023 (Forbes, 2023). Being a source of information, Forbes helps the readers surf through key insights derived from markets and businesses in general (Forbes,2023). Among the many information the magazine provides, Profit per country and company, market value and similar information could be sourced based on the broader evaluations given by the Forbes staff. Being in a highly competitive industry with many large and strong players, business analysis is an essential tool for Forbes to stay relevant and competitive with many other players. Companies are constantly in an uphill battle for a better positioning upon the market as it is annually conducted to see the biggest market share in revenues for the world's best industries and companies globally recognized (Kwong, V., 2023). There is a whole range of opportunities which helps to see profit, sales, assets, margins per countries, companies, and rankings upon the listings for the entire world. This is the main reason why it is possible to conduct answers to questions on profitability through hypothesis testing, case scenario studies, key measurements for mean, median, mode, standard deviation, skewness, Regression Analysis (RA) (If available for analysis as correlation and dependance upon variables might vary drastically) and more functional business analytics (BA) principles for better understanding of any conflicts of interest or visualization with any dashboard systems.

Background
Analysis

Forbes is one of the largest economical and financial magazines for the best rankings as of 2023 where companies are being studied under scrutiny by financial organisms and associations based on their revenues, countries Gross Domestic Product (GDP), social media for the business sector not only giving insights to future in investments but also increasing the viewers by sharing key data, averages and overall performance by the trending domains inside the job market as technological, social, environmental and political changes can influence the economical context.

Certainly, Forbes is a source of viability for insights into the economic system for most countries as it conducts studies on stocks, financial strategies, and industrial commercialization for the current year. This is a manner for businesses to be prepared for any future value investments into any bonds, stocks, resources, and knowledge needed for capital budgeting and decision-making analysis (Forbes, 2023).

Problem
Identification

▲ Data cleaning issues	◆ Independent ranks and data
● Notable market changes	■ Any decrease for companies

Data cleaning issues

- Mixed unorganized data makes "Correlation", "Regression" and insight visualization a tough task as it provides little to no actual information.
- Formats affect the interpretation for key datasets.
- Time tracking numbers and categorizing data can consume analysis timings.

Independent ranks and data

- No dependency one rank from another can make yearly studies for listings slower and tougher.

Notable market changes

- While some companies stayed in similar positions other corporations lost their standings after negative results constantly among 2021 and 2023 for further considerations into analysis.

Any decrease for companies

- Sudden decrease in "Sales", "Profit", "Assets" and "Market Value" affect standings and operations for any of the listings regarding 2024 or many other years.

Relevance
of the Industry

Media is communication towards the masses, and it conducts important influences upon the population of a territory as it acts as an informant towards millions about the latest gain or loss in stocks, importance for the best innovation upon technologies, domains and job offers as best countries to continue advancing for projects is measured as part of the rankings given by Forbes. Nevertheless, every year values and companies either increase their assets, profit, sales, and other essentials for considerations (Craft, 2023).
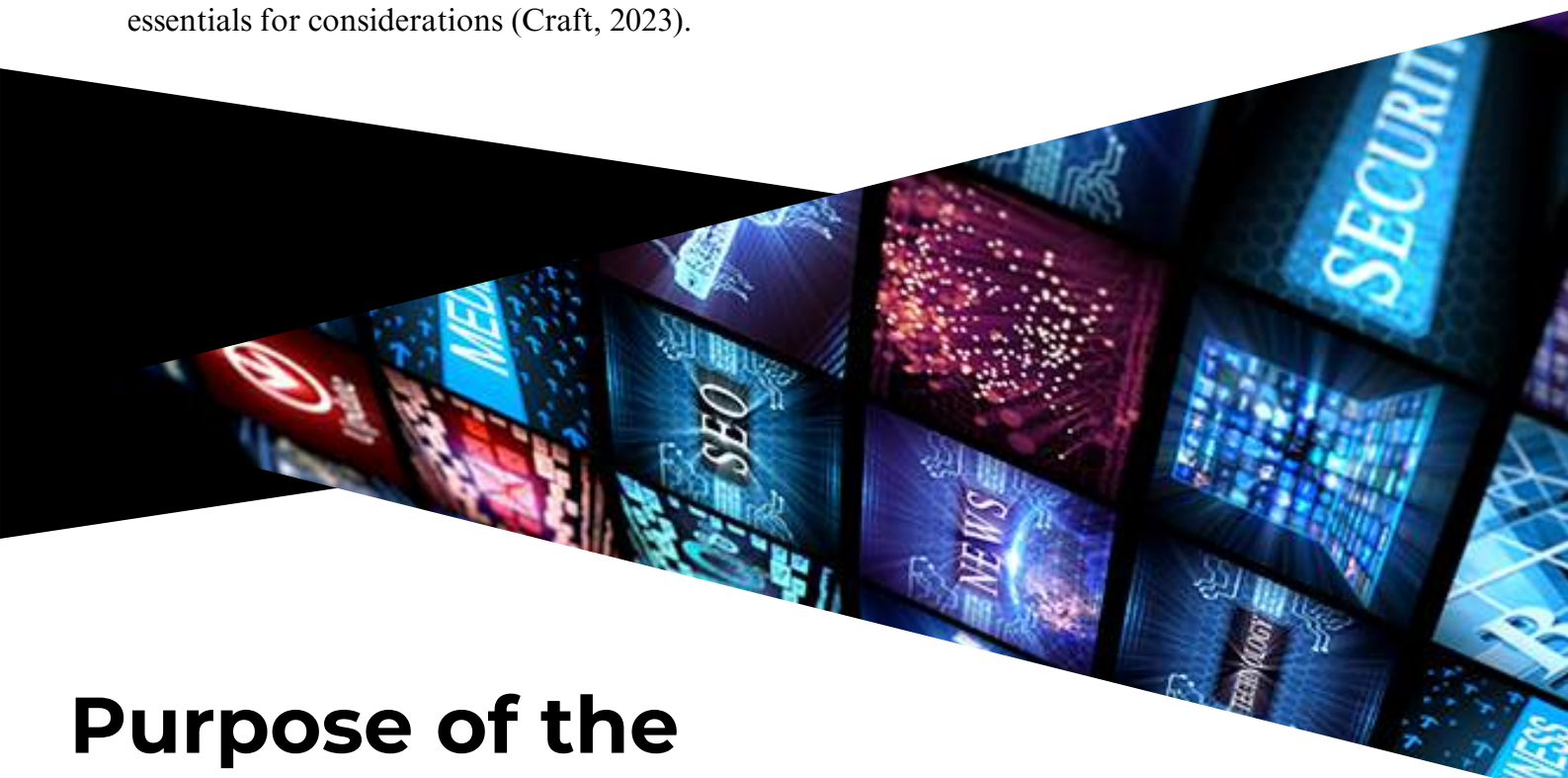
Purpose of the
Investigation (POTI)

Main purpose of the investigation to have the visualization, efficiency analysis by companies based on Forbes rankings, best countries for investment based on the top tier list businesses, viewing upon revenues based on correlation of variables and a brief future analysis of companies. Considering development projects for many countries and strategic alliances for decision making is focused on a structure based foremost on capital growth by the industry and companies across the globe, rankings and reliability for these businesses predicting their sales regarding a specific amount in 2023.

Objectives

- Describe the changes in economic impact between 2021 and 2023 regarding the world's biggest companies.

- Develop insights about scenarios for possible outcomes of some of the biggest companies around the world for their key growth.

- Conduct analysis tools usage for key measurements when maintaining positive financial management and considerations.

Scope

Benefits of working with such a prestigious news source for economy helps to understand the constant evaluations inside and outside of the stock markets influenced by negative and positive events globally.

Empirical

Mark Lennihan / AP

First, according to student Thomas F. Remington, Forbes magazine not only enlists wealth's global inequalities as it compares some of the most important businesses internationally, but it also conveys information into a study for the future regarding the probabilities of development for specific industries based upon the information on the threshold's fall or rise for the year about the wealth in the Saez & Zucman data from $ 1.9 million dollars in 1982 to $ 3.8 million in 2012 for the world's wealth accumulation across the globe (Remington, 2023). This is a beginning to view the economies and the backbone of the growing markets for businesses. Forbes is a channel for the truth and delivers an opening for opinions on the best technologies and domains.

Certainly, projections shown for the current years have been affected by margins controlled by huge crisis among the entire planet as the "Forbes Rich List" is constantly changing its ranks based on revenues, expenses, financial equity, and relevance upon the evolution for new projects. However, tactics and solutions from professions for better resource management can be shown by the biggest companies' responses towards issues associated with the negotiations and wealth changes per year shown in Forbes as listed inside of the "Forbes Rich List" (Luo, B. & Tian, Z., 2023). This gives the data certainty of any negative outcomes for other types of businesses due to abrupt conditions upon the financial scenario for any hypothesis or predictions based in history.

As a matter of fact, Forbes also conducts investigations for the listings as part of the research is based on the usage of analytics and trends through different modules for learning of results on a company (Luo, B. & Tian, Z., 2023). Forbes is playing a huge part in the considerations for Return of Investment (ROI) in stocks and financial trading for the Wall Street financial services and other important sectors in the entrepreneurial world as well as the GDP for future in some of the largest countries (Peng, Huang, Yang & Sun, 2016).

Overall, it is difficult to know with an exact prediction the outcomes for the next ten years, but Forbes is one of the most trusts owned informative sources for the continuous improvement on what concerns inside the inside and outside of any business decision in macro and micro analysis.

Business

The multinational magazine "Forbes" is one of the largest and most well-known instruments for business growth search and creation of strategies against the current issues based on inflation and the companies around the world which top the markets. However, it also conducts deep thorough analysis about the performance based off profits, market share, market values, sales, and assets per year as it ranks into a listing for the highest earning companies. (Schnitfink, 2023).

The magazine acts as a link with the industry and its readers Forbes is a great opportunity to establish a knowledgeable standard for earnings and averages based on the market value for some of the biggest companies across the globe (Forbes, 2023). Particularly, business opportunities have given rise to the talks from new perspectives. This is one of the reasons analyses done by Forbes can take long timings during the year (Tani, 2023).

Credit Suisse, Paradeplatz in Zürich (Switzerland) / Roland ZH

Methodology
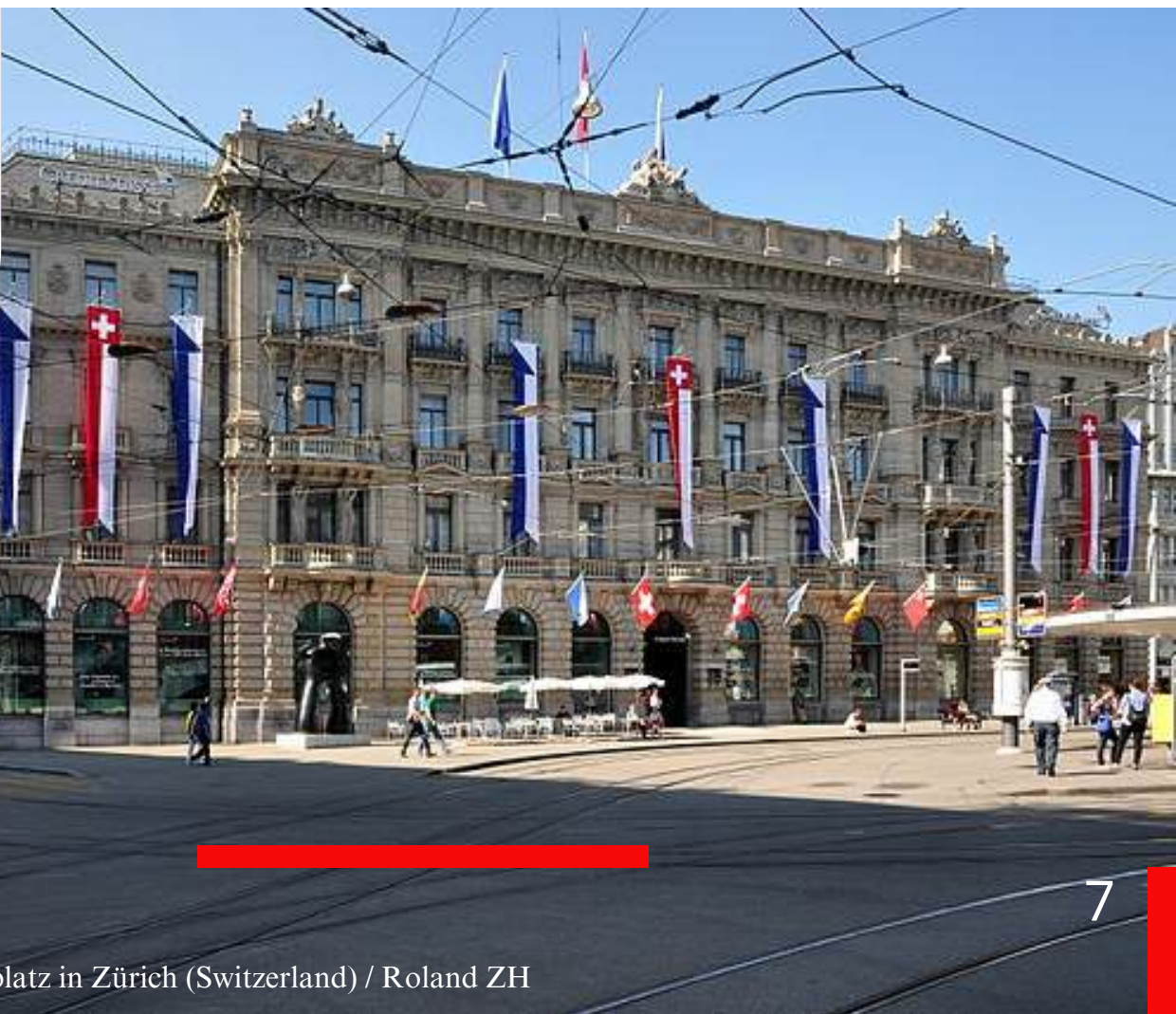
To begin with, as we all know data is changing the business world dynamically, moreover magazines like Fortune and Forbes are the top world leaders in publishing these data, and status regarding rapid change in the business world all around the globe. Media and publishing companies like Forbes collect these data by meeting their 400 members all around the globe this also includes interviewing the top-level management of different companies such as asset managers, financial advisors, and boards of directors. Then this type of data is used by the analyst to forecast future upcoming events, for instance, Michael Burry an investor and analyst predicted a stock market crash in 2008, on Wall Street by analyzing trends and data from companies like this (Ghosh, S., 2023).

Data Collected:

In this assignment, the data is collected from Kaggle which helped in performing different analyses and applying analytical tools (Berkay, A., 2023). Adding on, outliners are one of the most common problems that an analyst faces while collecting data, to put it simply, an outliner is an extremely high or low value that doesn't correlate with the existing data However, the data of Forbes was highly precise data and there were no outliners found.

- **Statistical Analysis:** Upon collecting the data, Central tendency or statistical analysis was done which included mean, mode median, and standard deviation.

The **mean** for the sales of the world's top 100 companies was $151,965,959,596.00.
The **median** for the sales of the world's top 100 companies was $ 109,430,000,000.00.
The **mode** for the sales of the world's top 100 companies was $ 60,220,000,000.00.
The **standard deviation** for the sales of the world's top 100 companies was $121,221,759,336.00.

- **Pattern Analysis:** According to the data companies performed exceptionally well in 2023 if we compare it with the year 2021, even if we see cluster analysis, we can easily see that in 2021 the trend was stagnant whereas if we consider 2023 the trend holistically changed, and some companies performed well in terms of market value, assets, and profits. The reason for stagnant growth in 2021 could be the pandemic.

- **Regression Model:** The regression models for both 2021 and 2023, were created and the **R Square** in both years was 19% and 27% respectively. This indicates that there could be no prediction made because for making predictions analysts must have at least 50% of **R Square**.

Tools and Techniques used in analyzing the Data

Initially, there were different tools and techniques used to analyze the data which included central tendency, calculation of regression, hypothesis testing, cluster analysis, and some "Pivot Tables" to give a better perspective to the stakeholder.

Following is the breakdown of why we used these tools and techniques:

- **Central Tendency:** To provide an accurate description of the data in the form of mean, median, mode, and standard deviation.

- **Calculation of Regression:** This analysis has been done to predict the value of the dependent variable for individuals for whom some information concerning the explanatory variables is available, or to estimate the effect of some variable on the dependent variable.

- **Hypothesis Testing**: it is used to test whether the null hypothesis can be rejected or approved. If the null hypothesis is rejected, then the research hypothesis can be accepted. If the null hypothesis is accepted, then the research hypothesis is rejected.

- **Cluster Analysis:** This analysis has been used when there is no relationship within the data, the objective of this analysis is to find a similar group of subjects and represent them in a cluster form on a graph. In this case, the companies that are performing equally are separated into similar clusters.

- **Pivot Tables:** A pivot table is known to be an interactive way to quickly summarize large amounts of data. To put it simply, this tool represents the data in a simple manner so that anyone can understand it. In the case of the top 100 companies by Forbes, this report used Pivot Tables to illustrate average sales and profits in 2021 and 2023.

Brent Lewin/Bloomberg

Analysis

Central Tendencies Calculations (CTC):

   Key measurements show a notable increase in overall upon 100 top companies worldwide according to the "Forbes Magazine". 2021's and 2023's average on "Sales", "Sales" median, Standard Deviation, and a skewness among all companies as a departure from a global economic crisis after a pandemic established a connection between current results and 2021's with 2023's comparison increment of values.

	2021	
107,191,313,192	Sales Average	
79,900,000,000	Sales Mode	
74,000,000,000	Sales Median	
85,729,182,844	Sales Standard Deviation (St. Dev)	
2	Sales Skewness	
	2023	
$151,965,959,595.96	Sales Average	
60,220,000,000	Sales Mode	
109,430,000,000	Sales Median	
121,221,759,336	Sales Standard Deviation (St. Dev)	
2	Sales Skewness	

Central Tendencies Calculations (CTC) for "Sales" 2021 and 2023

Regression Analysis (RA):

   In addition, Regression Analysis (RA) is not viable for the year 2021 as studies have shown that values on R Squared (R^2) under 0.50 can be non-related as there does not exists enough correlation between "Sales", "Market Value", "Profit" and "Assets" upon every company as they act as units or ranking data. In contrast, 2023 has a larger scale for correlation as values of 0.27 are higher than 2021 but it is still non-correlated completely due to variability upon rankings and companies. Furthermore, it is still available for analysis, but the model might not be accurate and does not describe tendencies for all companies as ranks act comparatively.

2021		SUMMARY OUTPUT	
SUMMARY OUTPUT			
		Regression Statistics	
		Multiple R	0.526957122
Regression Statistics		R Square	**0.277683809**
Multiple R	0.432621691	Adjusted R Square	0.254873824
R Square	**0.187161528**	Standard Error	1.04639E+11
Adjusted R Square	0.161492944	Observations	99
Standard Error	78502239210		
Observations	99		
		ANOVA	
ANOVA			*df*
	df	Regression	3
Regression	3	Residual	95
Residual	95	Total	98
Total	98		
			Coefficients
	Coefficients	Intercept	1.05243E+11
Intercept	74878341982	profits	2.760950777
profit	1.173365816	asset	-0.012658146
asset	0.000826908	market value	0.021067573
market valuation	0.061506099		

Regression Charts for 2021 and 2023

Analysis

Regression Analysis (RA):

Regression Analysis (RA) can be used for future predictions but in this case data is comparable, nevertheless, it remains independent.
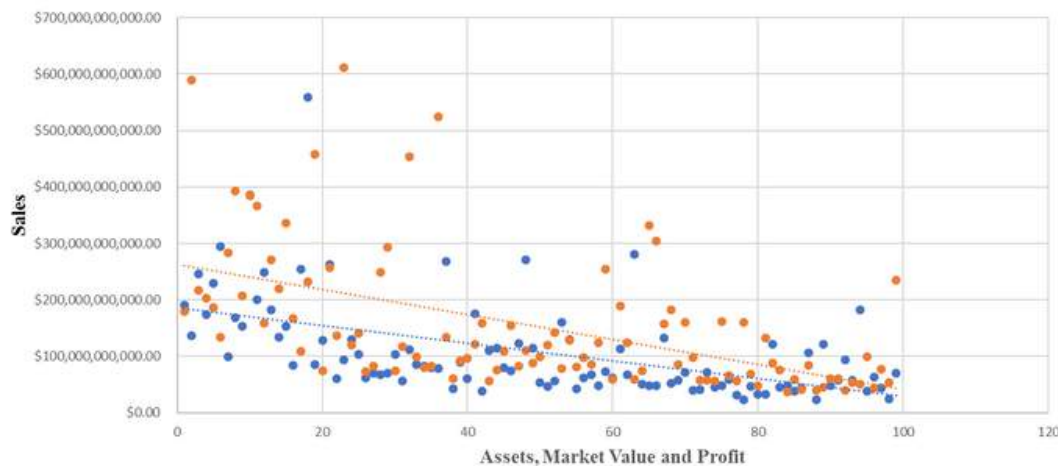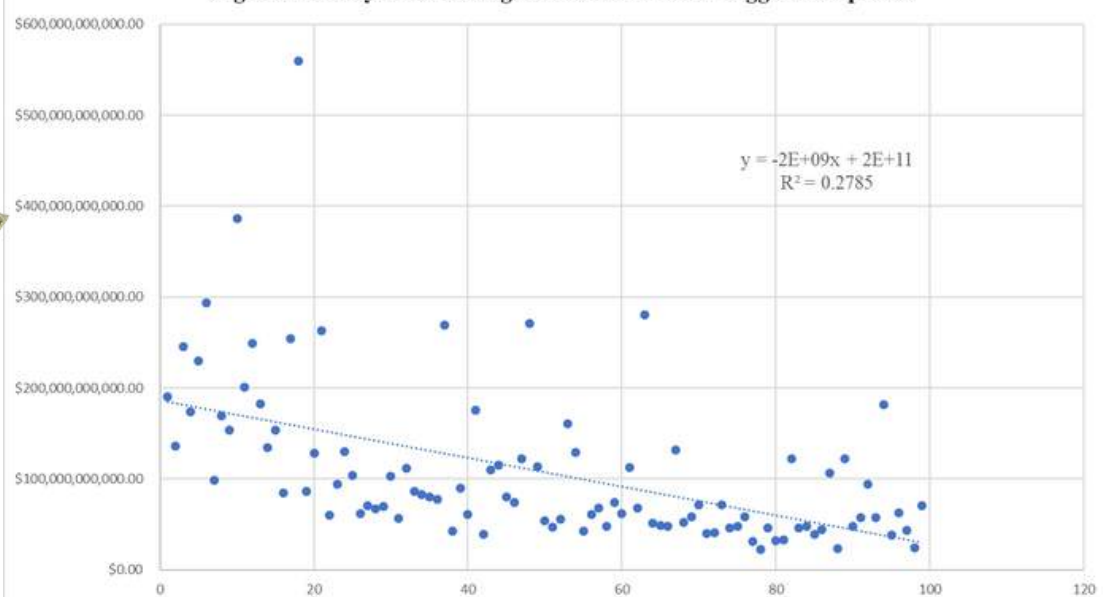

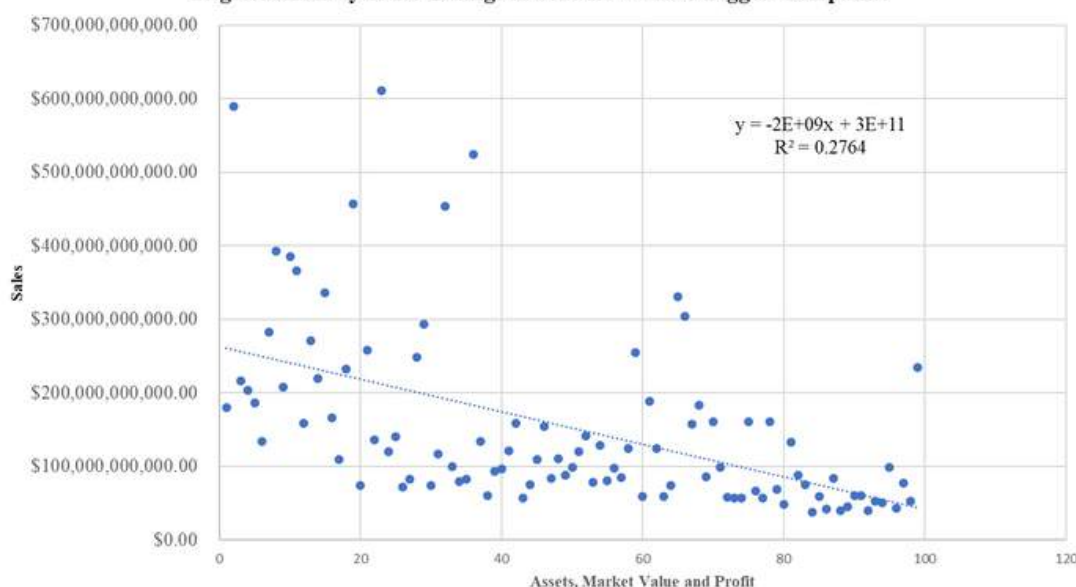
Due to values lower than 0.50 values are shown with "No Regression" or no dependency one company from another.

Analysis

Questions answered by Regression Analysis?

No

Is it possible to predict future markets accurately? Yes / No

Why?

First of all, rankings are independent and one company might no be affected like the competition.

Uncertainty, gives difficulty for predicting rankings as global crisis can vary quickly as shown by a global pandemic during 2020 (World Health Organization, 2019).

Values below 0.50 may have lack of influence among variables.

No

Does it mean "Regression Analysis" is wrong? Yes / No

Why?

Model might not be useful yet give certain insight. The issues come when this data changes abruptly predictions become useless.

It means the "Sales", "Assets", "Profit" and "Market Value" act independently among companies.

For comparison, it is still a manner to have a specific companies idea about performance for 2024.

English Bay /Jester 777

Analysis

Hypothesis Testing (HT):

In "Hypothesis Testing" for an entire year it can compare average and actual "Sales" for 2021 and 2023 for difference viewing regarding increase or decrease per those two years where **"Total Sales"** oscillate among $10,612,000,000,000.00 and $107,191,919,192.00 for 2021. For 2023, **"Total Sales"** $15,044,630,000,000.00 and $151,965,959,596.00. According to the assumption total "Sales" on average should remain between $ 200,000,000,000.00 for "Total Sales" and among average and $ 400,100,000,000.00 for Apple as an example.

Possible outcome for **Sales in 2024**

Assuming Sales for 2024 will have similar values to 2023 Hypothesis Testing for Sales 2024	
MEAN	151,965,959,596
Standard Deviation (St. De	121,221,759,336
Value to Find	200,000,000,000
N	100

Possible outcome for **Sales on Apple in 2024**

Apple 2024 Assuming Sales for 2024 will have similar values to 2023 Hypothesis Testing for Sales	
MEAN	151,965,959,596
Standard Deviation (St. Dev)	121,221,759,336
Value to Find	400,100,000,000
N	100

Apple 2023

Possible outcome for **Sales in 2024**

Possible outcome for **Sales on Apple in 2024**

Test Statistic:

$$z = \frac{\bar{x} - \mu_o}{\sigma/\sqrt{n}} = \frac{151965959596 - 15044630000000}{121221759336/\sqrt{100}} = -1228.55$$

p-Value Approach:
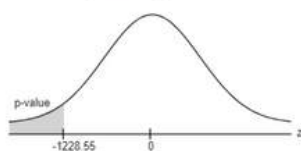
Standard Normal Table

z	.03	.04	.05	.06	.07
−1228.6	.0000	.0000	.0000	.0000	.0000
−1228.5	.0000	.0000	.0000	.0000	.0000
−1228.4	.0000	.0000	.0000	.0000	.0000

p-value $= .0000$

Rejection Rule: Reject H_0 if p-value $\le .05$

p-value $= .0000 \le \alpha = .05$

Conclusion: Reject H_o

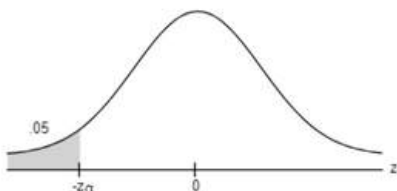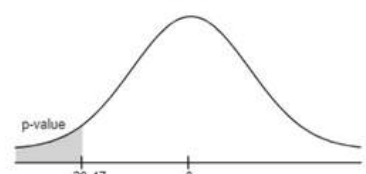Interpretation: Conclude $\mu < 15044630000000$

Total Sales 2023

p-value $= .0000 \le \alpha = .05$

Conclusion: Reject H_o

Interpretation: Conclude $\mu < 385100000000$

Critical Value Approach:

Standard Normal Table

z	.02	.03	.04	.05	.06
−1.7	.0427	.0418	.0409	.0401	.0392
−1.6	.0526	.0516	.0505	.0495	.0485
−1.5	.0643	.0630	.0618	.0606	.0594

Critical Value: $-z_\alpha = -1.64$

Rejection Rule: Reject H_0 if $z \le -z_\alpha$

$z = -19.23 \le -z_\alpha = -1.64$

Conclusion: Reject H_o

Interpretation: Conclude $\mu < 385100000000$

Test Statistic:

$$z = \frac{\bar{x} - \mu_o}{\sigma/\sqrt{n}} = \frac{151965959596 - 200000000000}{121221759336/\sqrt{100}} = -3.96$$

p-Value Approach:

Standard Normal Table

z	.04	.05	.06	.07	.08
−4.0	.0000	.0000	.0000	.0000	.0000
−3.9	.0000	.0000	.0000	.0000	.0000
−3.8	.0001	.0001	.0001	.0001	.0001

p-value $= 1 - .0000 = 1.0000$

Rejection Rule: Reject H_0 if p-value $\le .05$

p-value $= 1.0000 > \alpha = .05$

Conclusion: Do Not Reject H_o

Interpretation: Can't conclude $\mu > 200000000000$

Interpretation: Can't conclude $\mu > 200000000000$

Critical Value Approach:

Standard Normal Table

z	.02	.03	.04	.05	.06
−1.7	.0427	.0418	.0409	.0401	.0392
−1.6	.0526	.0516	.0505	.0495	.0485
−1.5	.0643	.0630	.0618	.0606	.0594

Critical Value: $z_\alpha = 1.64$

Rejection Rule: Reject H_0 if $z \ge z_\alpha$

$z = -3.96 < z_\alpha = 1.64$

Conclusion: Do Not Reject H_o

Interpretation: Can't conclude $\mu > 200000000000$

Test Statistic:

$$z = \frac{\bar{x} - \mu_o}{\sigma/\sqrt{n}} = \frac{151965959596 - 400100000000}{121221759336/\sqrt{100}} = -20.47$$

p-Value Approach:

Standard Normal Table

z	.05	.06	.07	.08	.09
−20.5	.0000	.0000	.0000	.0000	.0000
−20.4	.0000	.0000	.0000	.0000	.0000
−20.3	.0000	.0000	.0000	.0000	.0000

p-value $= .0000$
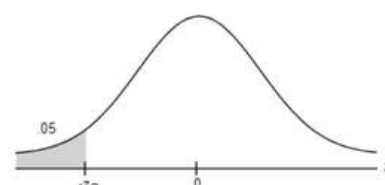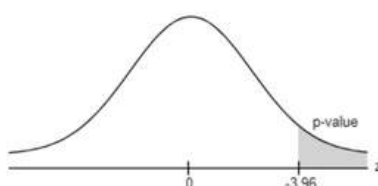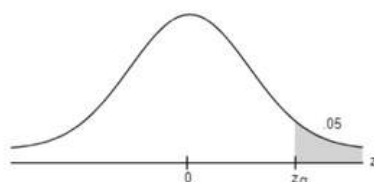
Rejection Rule: Reject H_0 if p-value $\le .05$

p-value $= .0000 \le \alpha = .05$

Conclusion: Reject H_o

Conclusion: Reject H_o

Interpretation: Conclude $\mu < 400100000000$

Critical Value Approach:

Standard Normal Table

z	.02	.03	.04	.05	.06
−1.7	.0427	.0418	.0409	.0401	.0392
−1.6	.0526	.0516	.0505	.0495	.0485
−1.5	.0643	.0630	.0618	.0606	.0594

Critical Value: $-z_\alpha = -1.64$

Rejection Rule: Reject H_0 if $z \le -z_\alpha$

$z = -20.47 \le -z_\alpha = -1.64$

Conclusion: Reject H_o

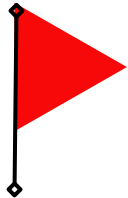Interpretation: Conclude $\mu < 400100000000$

Analysis

Cluster Analysis (CA):

Furthermore, clusters divided the biggest companies into seven tiers which establish a huge difference between the top three and the last hundred businesses out of the average upon the "Forbes Listings" with notable growth in 2023.
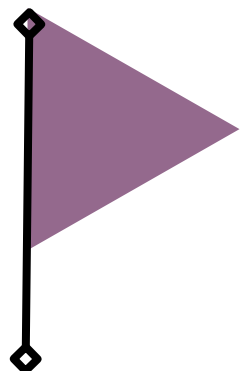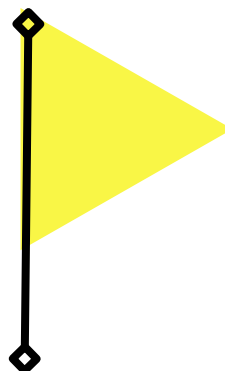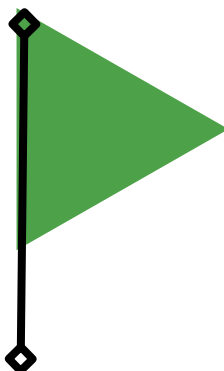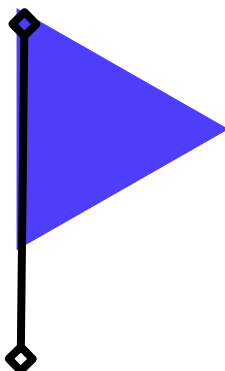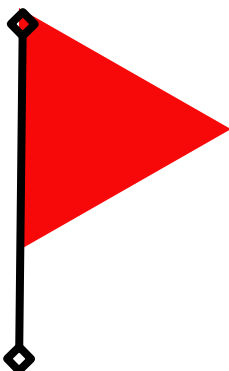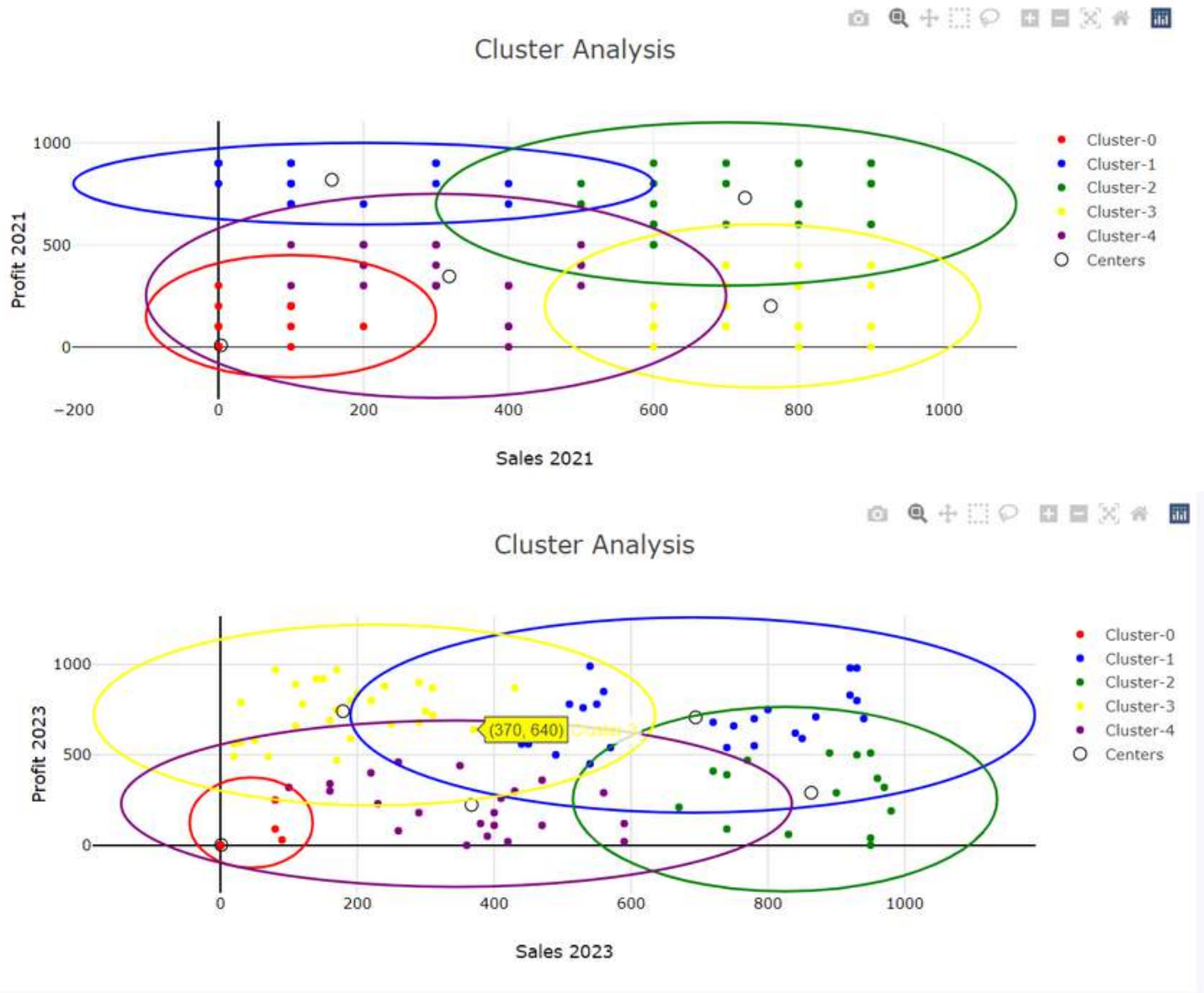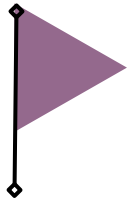
Analysis

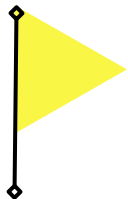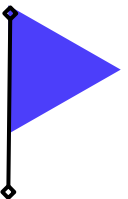**Cluster Analysis (CA):**

2021

Cluster	Companies
🚩 Lower Performance Companies	GSK, ROSNEFT
🚩 Regular- Low Performance Companies	ORACLE, PEPSICO
🚩 Regular Performance Companies	GE, Deutsche Telekom
🚩 Medium- High Performance Companies	VOLKSWAGEN AKTIENGESELLSCHAFT, Walmart
🚩 High Performance Companies	ICBC, J.P.Morgan

2023

Cluster	Companies
🚩 Lower Performance Companies	Itaú, COSTCO WHOLESALE
🚩 Regular- Low Performance Companies	ORACLE, eni
🚩 Regular Performance Companies	Mercedes-Benz, TD Bank
🚩 Medium- High Performance Companies	WELLS FARGO, Chevron
🚩 High Performance Companies	J.P.Morgan, saudi aramco
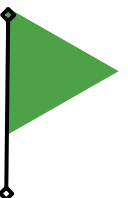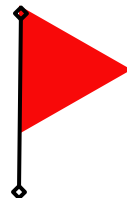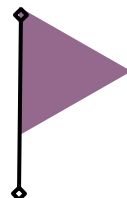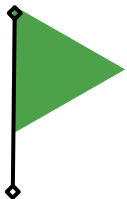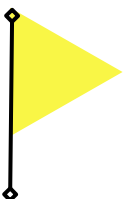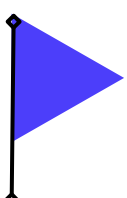
Pivot Tables (PT):

Pivot Tables help order and study individual averages on **"Sales"** and **"Profit"** per company for 2021 and 2023.

Questions answered by "Pivot Tables"?

Which companies topped the "Sales" and "Profit" on average for 2021 and 2023?

Any ideas why?

Many companies were affected negatively after the comeback from a global pandemic during 2020. On the other hand, many corporations decided to migrate digitally and continue their growth in market share (Jaumotte, Oikonomou , Pizzinelli , Tavares, 2023).

Values can vary between years as **"Sales"**, **"Profit"**, **"Assets"** and **"Market Value"** differ per time among companies.

Additionally, **"Pivot Tables"** give insights regarding the most important companies by ordering them into interactive layouts.

Row Labels	Average of Sales 2021	Average of Profit 2021
⊟ Walmart	5.592E+11	13500000000
United States	5.592E+11	13500000000
⊟ Amazon	3.861E+11	21300000000
United States	3.861E+11	21300000000
⊟ Apple	2.94E+11	63900000000
United States	2.94E+11	63900000000
⊟ PetroChina	2.807E+11	2900000000
China	2.807E+11	2900000000
⊟ Sinopec	2.711E+11	4800000000
China	2.711E+11	4800000000
⊟ CVS Health	2.687E+11	7200000000
United States	2.687E+11	7200000000
⊟ UnitedHealth Group	2.629E+11	16900000000
United States	2.629E+11	16900000000
⊟ Volkswagen Group	2.541E+11	9500000000
Germany	2.541E+11	9500000000
⊟ Toyota Motor	2.494E+11	14300000000
Japan	2.494E+11	14300000000
⊟ Berkshire Hathaway	2.455E+11	42500000000
United States	2.455E+11	42500000000
⊟ Saudi Arabian Oil Company (Saudi Aramco)	2.297E+11	49300000000

Also, Pivot Tables gives us insights towards biggest "Market Value per countries and companies through "Average Profit Share" if required upon analyzing data with Apple and ARAMCO leading.

Row Labels	Average of Sales 2023	Average of Profits 2023
⊟ Walmart	6.1129E+11	11680000000
United States	6.1129E+11	11680000000
⊟ Saudi Arabian Oil Company (Saudi Aramco)	5.8947E+11	1.5636E+11
Saudi Arabia	5.8947E+11	1.5636E+11
⊟ Amazon	5.249E+11	4290000000
United States	5.249E+11	4290000000
⊟ PetroChina	4.574E+11	22180000000
China	4.574E+11	22180000000
⊟ Sinopec	4.5356E+11	9850000000
China	4.5356E+11	9850000000
⊟ ExxonMobil	3.9316E+11	61690000000
United States	3.9316E+11	61690000000
⊟ Apple	3.851E+11	94320000000
United States	3.851E+11	94320000000
⊟ Shell	3.6589E+11	43510000000
United Kingdom	3.6589E+11	43510000000
⊟ UnitedHealth Group	3.3594E+11	20700000000
United States	3.3594E+11	20700000000
⊟ CVS Health	3.3117E+11	3970000000
United States	3.3117E+11	3970000000
⊟ China State Construction Engineering	3.0378E+11	7700000000
China	3.0378E+11	7700000000
⊟ Volkswagen Group	2.9347E+11	15630000000
Germany	2.9347E+11	15630000000

It is possible to organize per Average values for larger "Sales" on average where Wal-Mart, ARAMCO and Amazon top the listings for the current year 2023.

Analysis

Scenario Analysis (SA):

   Scenario Analysis (SA) provide a further viewing of possibilities if there where new customers inside a company or more revenues based in the possibilities of an outcome coming from **(Low, Medium (Base) (Closest to Reality) and High probability of occurring)**. In the following case it has been taken three of the major world's companies which are **ICBC, Apple** and **ARAMCO.**

Company	Year	Worst Case Scenario Analysis Value	Base	Best	Results
ICBC	2021	$ 19,050,000,000.00	$ 95,250,000,000.00	$171,450,000,000.00	$ 171,450,000,000.00
	2023	$ 21,677,000,000.00	$ 108,385,000,000.00	$195,093,000,000.00	$ 195,093,000,000.00
APPLE	2021	$ 29,400,000,000.00	$ 147,000,000,000.00	$264,600,000,000.00	$ 264,600,000,000.00
	2023	$ 38,510,000,000.00	$ 192,550,000,000.00	$346,590,000,000.00	$ 346,590,000,000.00
ARAMCO	2021	$ 22,970,000,000.00	$ 114,850,000,000.00	$206,730,000,000.00	$ 206,730,000,000.00
	2023	$ 58,947,000,000.00	$ 294,735,000,000.00	$530,523,000,000.00	$ 530,523,000,000.00

Company	Year	Sales
ICBC	2021	$190,500,000,000.00
	2023	$216,770,000,000.00
APPLE	2021	$294,000,000,000.00
	2023	$385,100,000,000.00
ARAMCO	2021	$229,700,000,000.00
	2023	$589,470,000,000.00

New sales based on probability for **ICBC, Apple** and **ARAMCO** are?

Best
Base
Worst
Case Scenario

If new sales come in any of the following businesses percentage for possibilities elevate chances of better earnings or not so favorable scenarios. This formula can be even used for millions of customers as a manner of establishing preparation for any happenings. Shows at least a three time increase for outcomes in this cases.
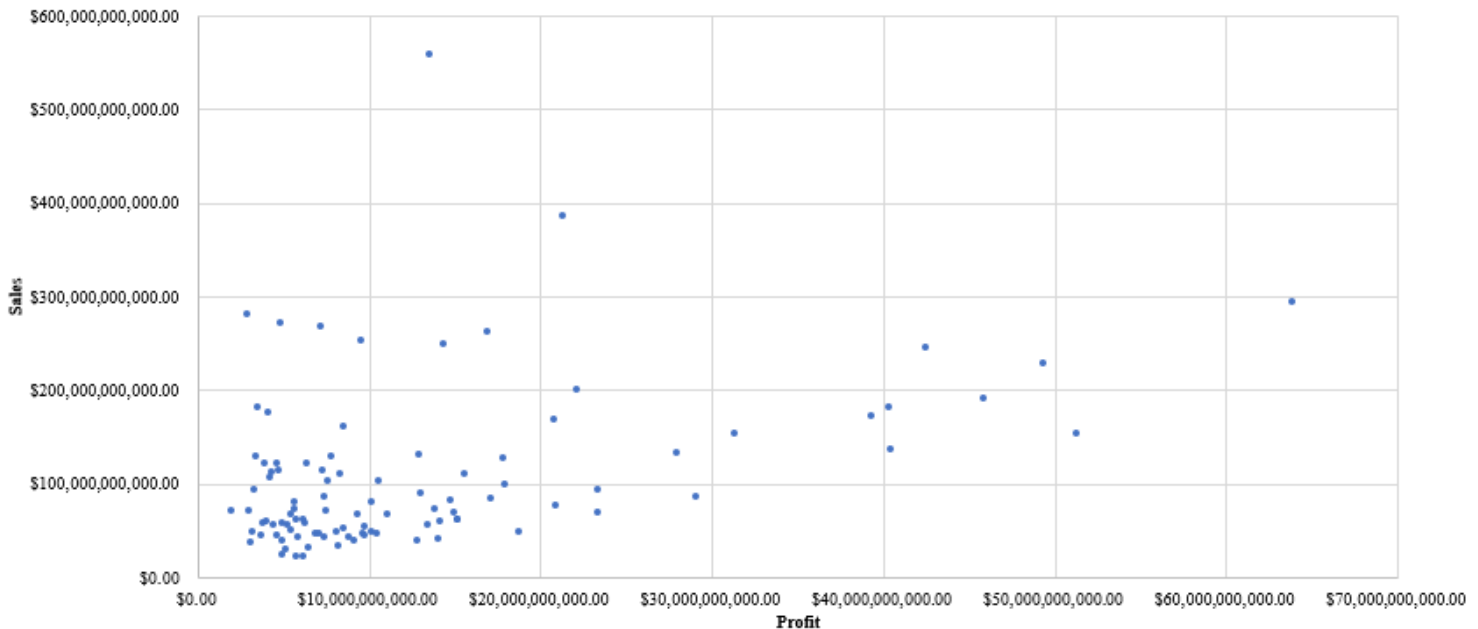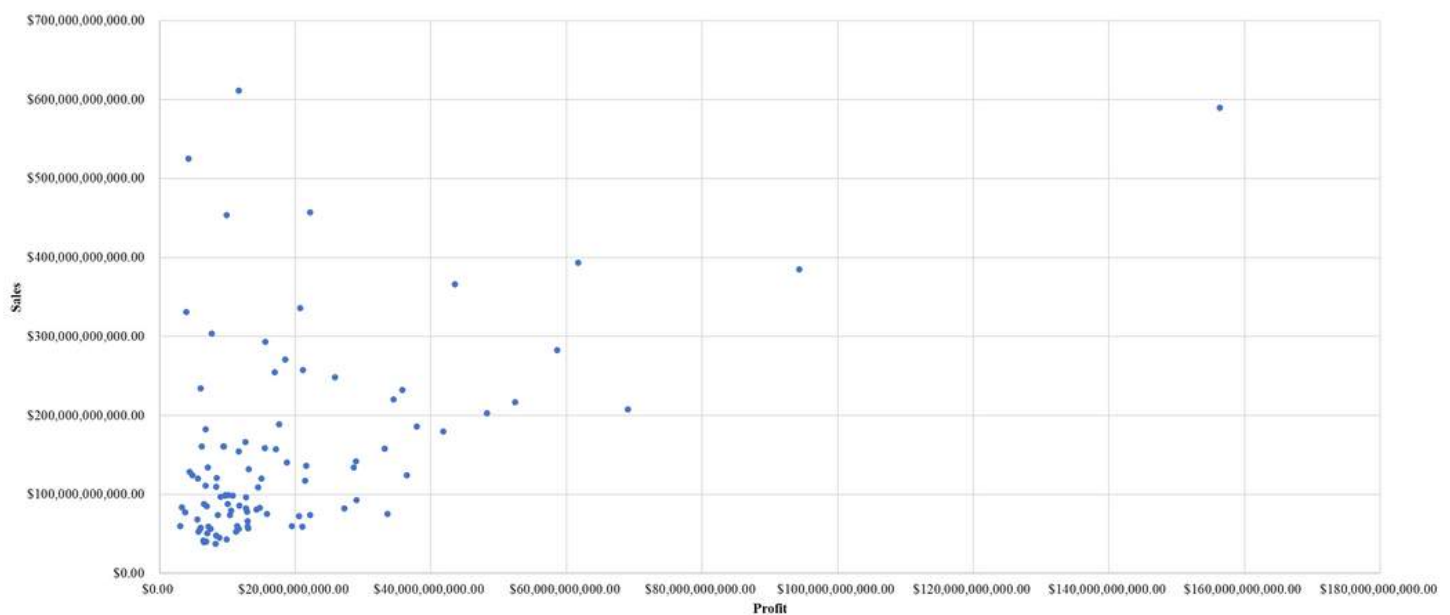
Analysis

Correlation Analysis (CA):

Correlation Analysis (CA) distributes data based on a "Correlation Model" which indicates just like regression the joint values between two or more variables in a scatter pointed plot chart.


Correlation for 2021's Sales and Profit


Correlation for 2023's Sales and Profit

Despite of there not being a positive **"Regression Analysis (RA)"** upon result, indeed, there is the appearance of a positive **"Correlation"** for the values of **"Sales"** and **"Profit"** for the years of 2021 and 2023. This allows the studies to show how even among the top companies worldwide, direct sales, profit, assets and other key variables can affect the relationship between these aspects for continuous growth or decrease in listings carefully documented by Forbes Magazine.

Analysis

Correlation Analysis (CA):

Correlation for 2021's Assets and Market Value

Correlation for 2023's Assets and Market Value
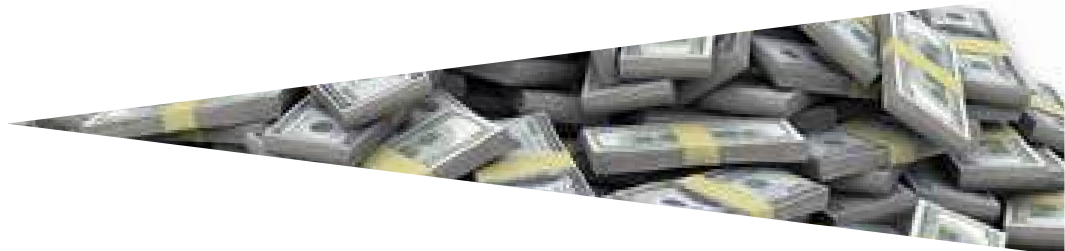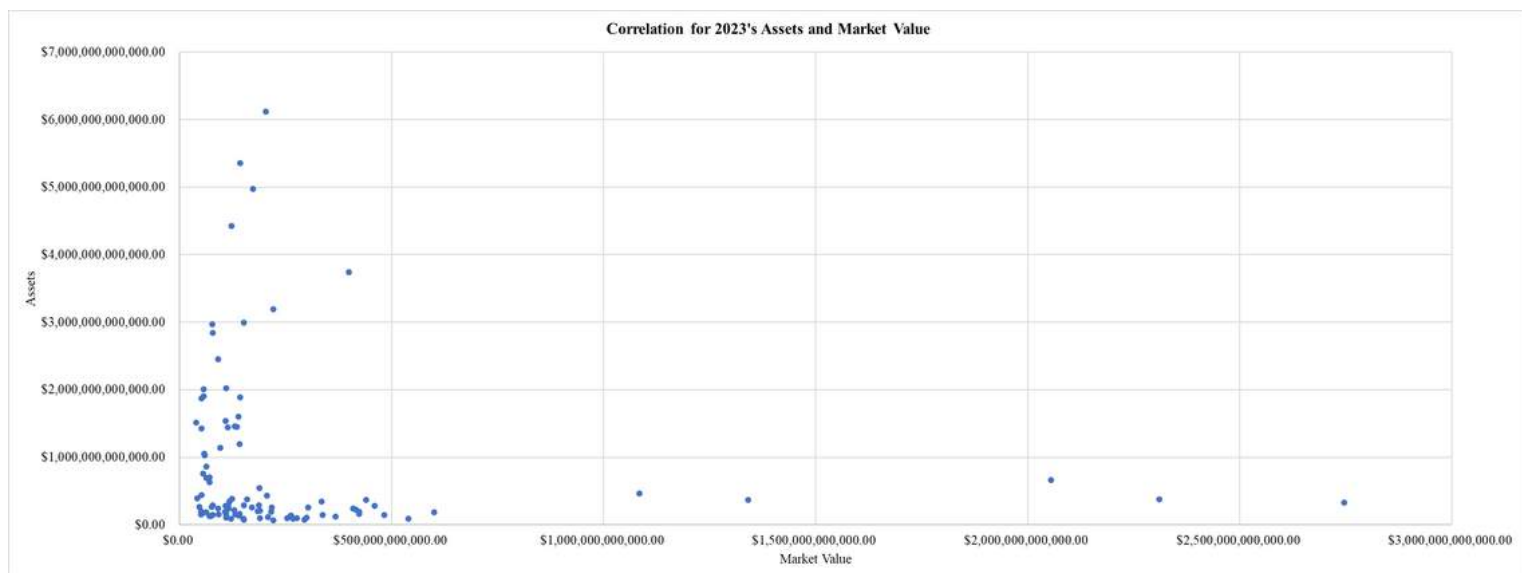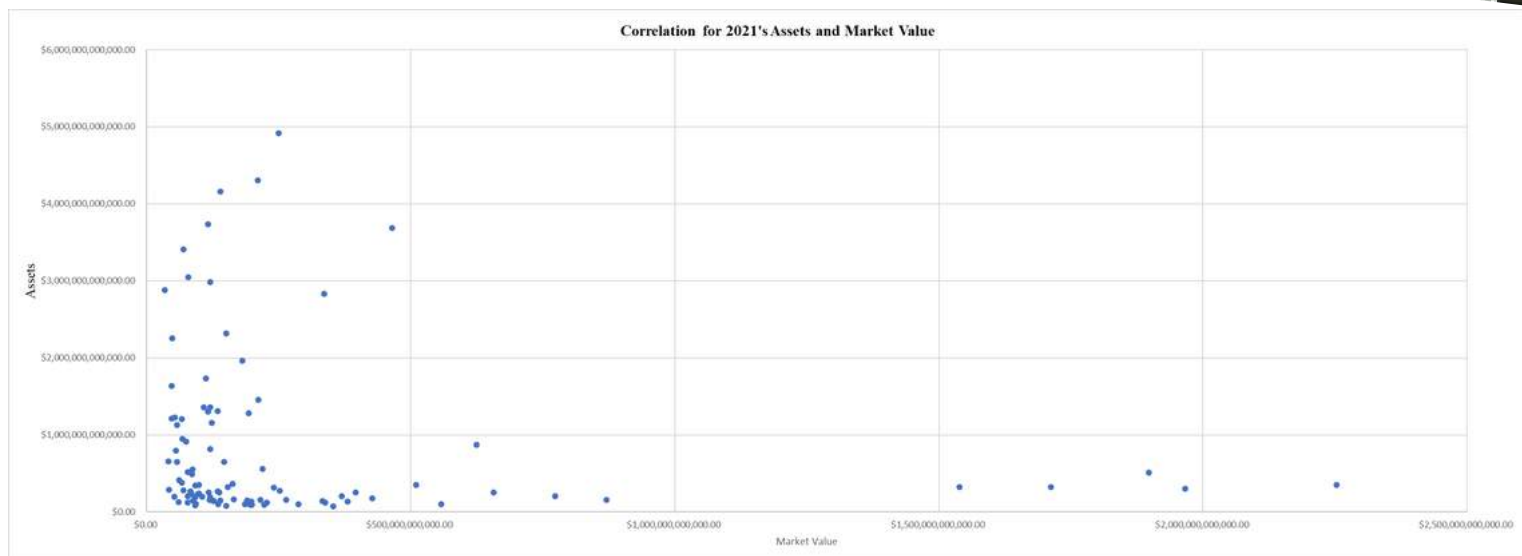
	Sales 2021	Profit 2021
Sales 2021	1	
Profit 2021	0.393816363	1
	Asset 2021	Market Valuation 2021
Asset 2021	1	
Market Valuation 2021	-0.126258951	1
	Sales 2023	Profits 2023
Sales 2023	1	
Profits 2023	0.505065519	1
	Asset 2023	Market Value 2023
Asset 2023	1	
Market Value 2023	-0.111280792	1

	Sales 2023	Profits 2023	Asset 2023	Market Value 2023
Sales 2023	1			
Profits 2023	0.505065519	1		
Asset 2023	-0.045528968	0.188125314	1	
Market Value 2023	0.438294912	0.738789531	-0.111280792	1

	Sales 2021	Profit 2021	Asset 2021	Market Valuation 2021
Sales 2021	1			
Profit 2021	0.393816363	1		
Asset 2021	0.021967143	0.294904392	1	
Market Valuation 2021	0.418244714	0.774881374	-0.126258951	1

	Sales 2021	Sales 2023
Sales 2021	1	
Sales 2023	0.254170651	1
	Profit 2021	Profits 2023
Profit 2021	1	
Profits 2023	0.523171343	1
	Market Valuation 2021	Market Value 2023
Market Valuation 2021	1	
Market Value 2023	0.262391472	1
	Asset 2021	Asset 2023
Asset 2021	1	
Asset 2023	0.172869899	1

"Correlation Analysis (CA)" shows the linking between every companies valuations and results which demonstrate the impact of one column with the other per year. The better values for "Correlation (CORREL)" is for **"Profits"** from 2021 and 2023 due to increase in revenues over the years after a global pandemic in 2020 (World Health Organization (WHO), 2019). In addition, new coming technologies within development open business opportunities.

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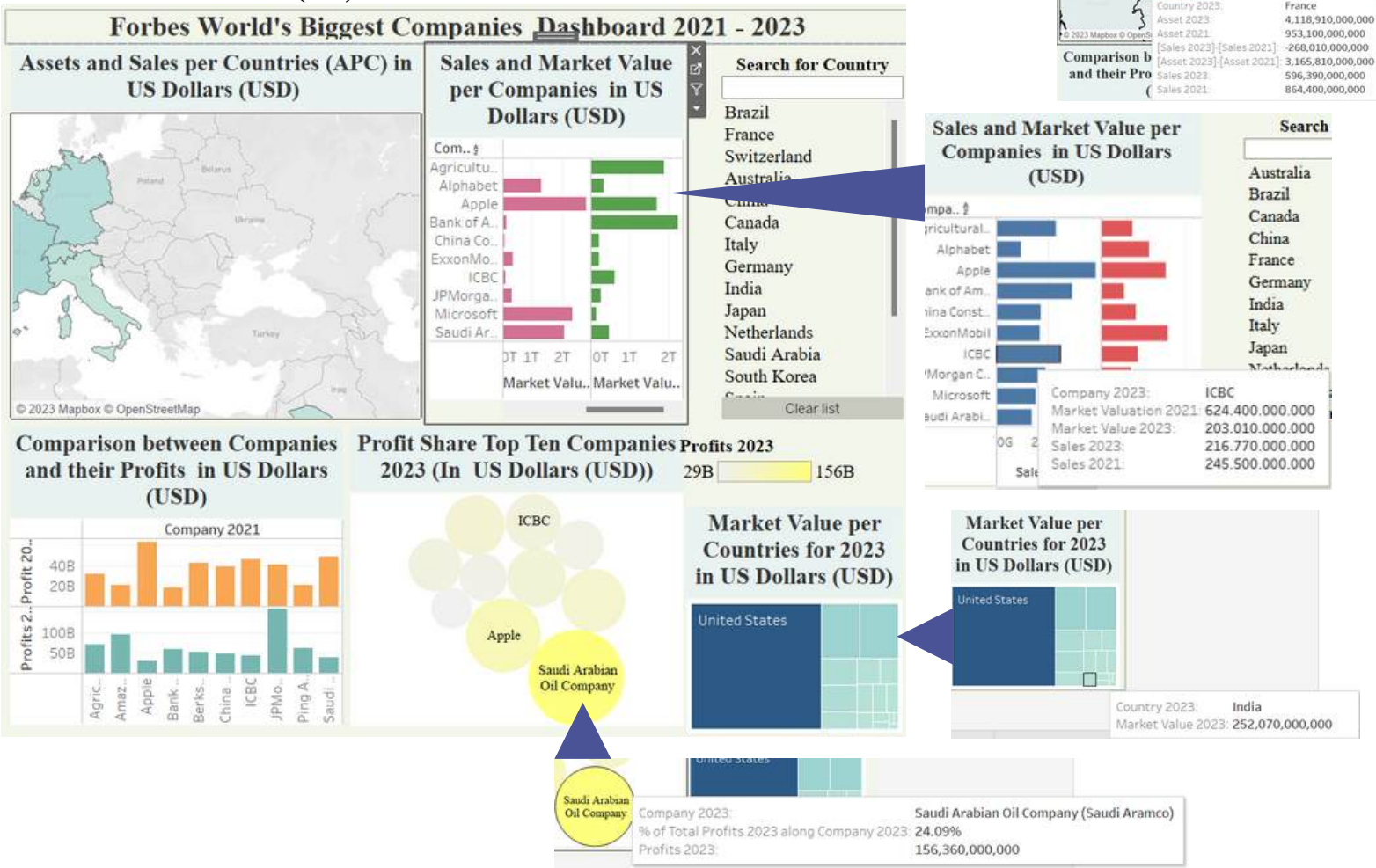# Analysis

Correlation Analysis (CA):

Correlation between 2021's and 2023's Sales

Correlation between 2021's and 2023's Market Value (MV)

Correlation between 2021's and 2023's Profit

Correlation between 2021's and 2023's Assets
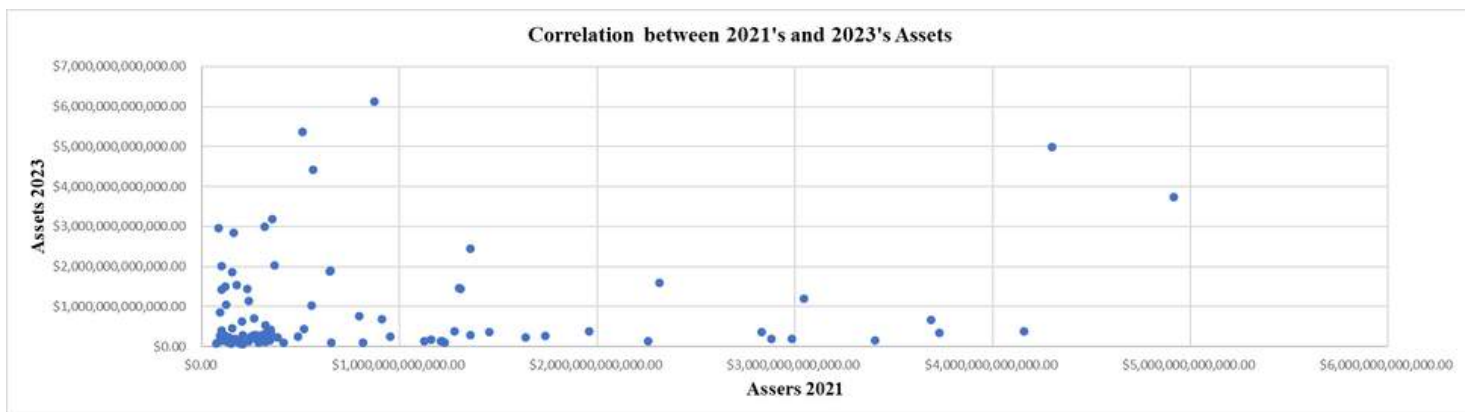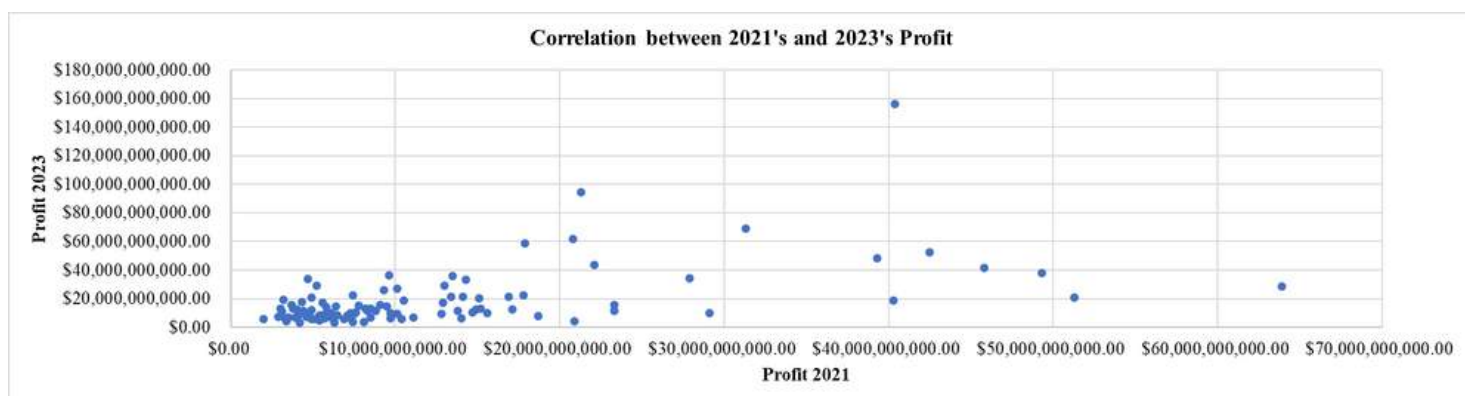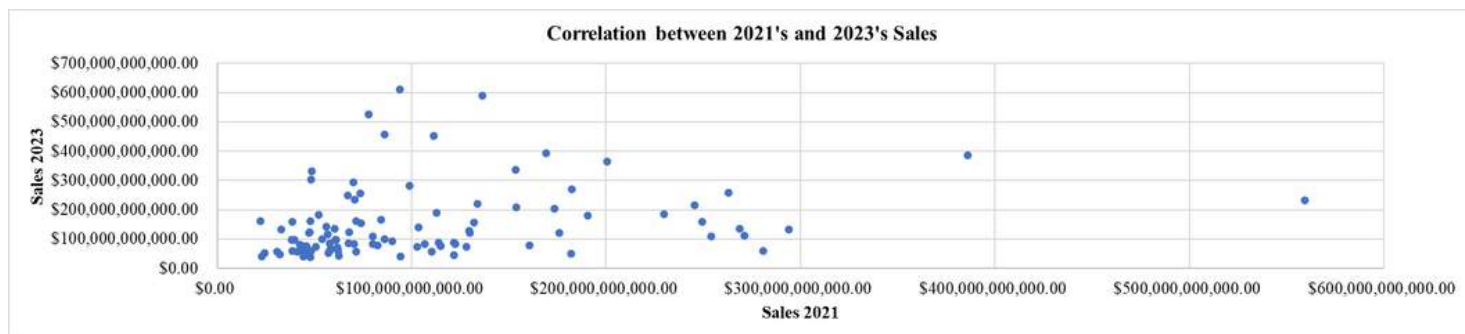
Analysis

Tableau Dashboard (TD):

"Tableau's Dashboard (TD)" handles descriptive and comparative data between 2021 and 2023 regarding the some of the world's largest companies in retrospective with the actuality for the vision of reality with global changes and the past to make decisions based on recent events which have intensified the economical growth or decrease worldwide. It answers to the questions of **"Assets", "Sales"** and **"Market Value"** for the biggest nations. Furthermore, it shows the evolution of some of the most prominent companies across the globe with **"Profits", "Sales"** and **"Market Value"** as an observation towards the current economical environment (Kumar, A., Paz, W., Gupta, R & Wijesekara, W., 2023).

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Results

Results:

2021
Top Countries Market

2023
Top Countries Market
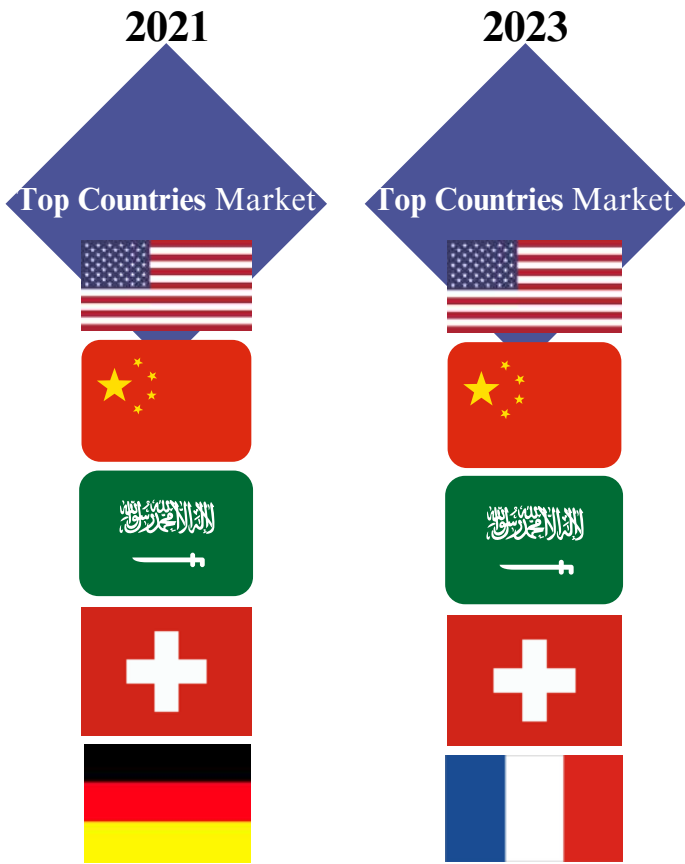
2024

Possible **"Sales"** between $ 151,965,959,596.00 or similar values to the average but will not exceed significantly on average more than $ 400,100,000,000.00 for

2024

Possible **" Total Sales"** between $ 151,965,959,596.00 and $ 200,000,000,000.00 on average in global among Forbes 100 biggest companies for 2024.

2024 will increment positively according to the correlation shown for 2023 upon companies and their **"Sales"** and **"Profit"**.

2023 Profit Share

One of the main causes can be the petrol scarcity and Saudi Arabian companies commercializing due to high prices after Ukraine War started (Gambrell, J.,2023).

Global pandemic's digital environment caused sales in these types of products to increase because of a large amount of technological appliances and electronics needed (Yu, D.E., 2020)

2021 Profit Share

Apple maintained more stability on **"Sales"** and **"Market Value"**. This can be forecasted due to their production steady for more "Revenues" (Wu, D. & Mochizuki, T., 2023).

Results

Sales and Market Value per Companies in US Dollars (USD)
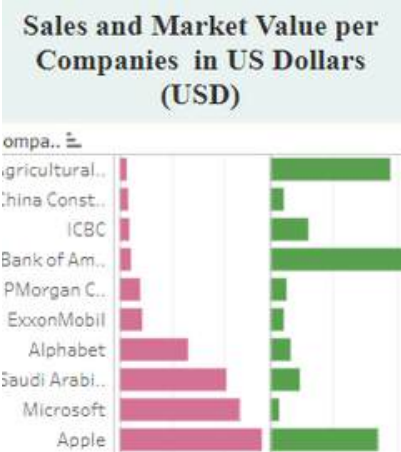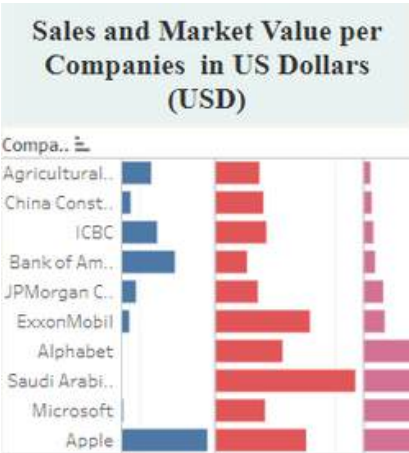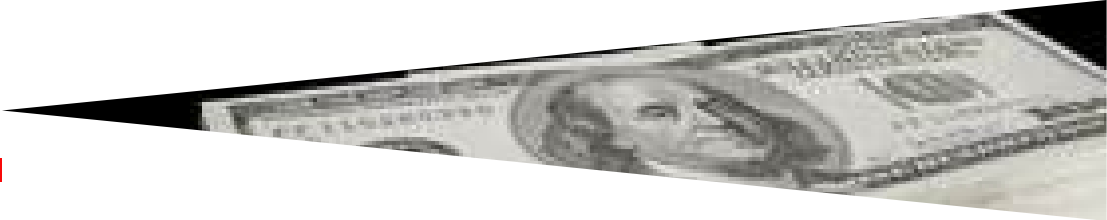
Bank of America had the most notable difference of all the companies upon **"Market Value"** growth. On the other hand, for **"Profit"** one of the most prominent companies were **Apple** and **ARAMCO** between both years battling for first spots constantly.

Comparison between Companies and their Profits in US Dollars (USD)
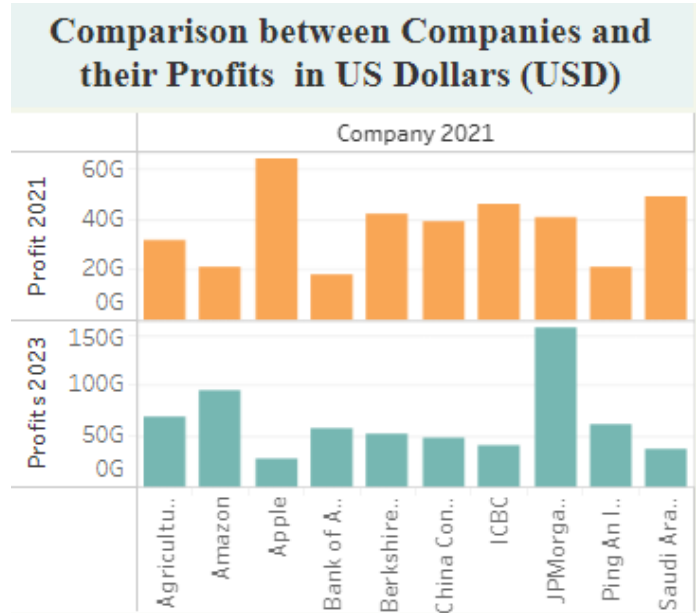
Values for 2024 can they be above the average for 2023 or will they remain like current earnings by the "World's Biggest Companies"?

-Possible outcomes shown by application of "Hypothesis Analysis" for 2024 as it shows it will remain seemingly same as 2023's sales.

-Clusters help act as a demonstrative help for possible stability upon competition among world's biggest companies.

-"Correlation Analysis" establish a linking between "Sales and Profits 2021 and 2023". While, "Pivot Tables" help carefully analyze the fact "Assets", "Sales", "Market Value" and "Profits" between years changed among some of the companies which were on the right path after a global pandemic (World Health Organization (WHO), 2019).

-"Scenario Analysis" recognizes the apparition of "What-If" and possible sales revenues for examples on businesses such as ICBC, Apple and ARAMCO with the major probability as average earnings on base around three times on average or more.

-Insights such as stable growth within the overall analysis done with the tools mentioned above are a manner of giving approval towards top companies' success (Apple, ARAMCO, JPMorgan, Amazon, Microsoft, Alphabet, among others which hardly fell after the Ukraine War's start (Kilfoyle, M, 2023).

Conclusion and Recommendations

Conclusion:

Overall, the global economy is currently affected by the major and minor changes occurring in every country. Also, this is a fundamental issue for many multinational companies across the world as they are constantly affected by the macro and microanalysis in the financial industries with the biggest businesses such as ARAMCO, Apple, ICBC, JPMorgan and more inside. Nevertheless, maintaining close numbers to averages per year is a manner of limiting from falling into massive loss for revenues and net income shown on statements.

Recommendations:

- Companies should maintain stability and good **Net Working Capital (NWC)** to have contemplation of any **"Worst Case Scenarios (WCS)"** or any unfavorable crisis such as the global pandemic caused by COVID-19 during 2020 which decreased production and the global economy (World Health Organization (WHO), 2019).

- Get yearly data per quarters for **"Time Trend Analysis (TTA)"** and better forecasting for future values on **"Sales", "Profits", "Assets"** and **"Market Values"** per companies or an overall study.

- **"Regression Analysis (RA)"** could be done per quarters or monthly as data would be co-dependent of all the values in an ascendent manner among companies.

- Ranking updates should be done twice every year for comparison and progressive predictions for the next years with closer accuracy to reality regarding **"Forbes's Data"**.

- Using numbers in unfiltered currencies and decimal place incongruencies will affect final results. It is a must to keep standards for any databases used from scratch or any website such as **"Kaggle"** (Kaggle, 2023).

- Make sure data has the availability of constant updates for any automatization of changes on sheets.

- Multiple sources can be good for qualitative data but for quantitative data is better to keep a single reliable source for any format discrepancies.

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