Analyze NYSC Data

Dataset - Real Life NYSE Database

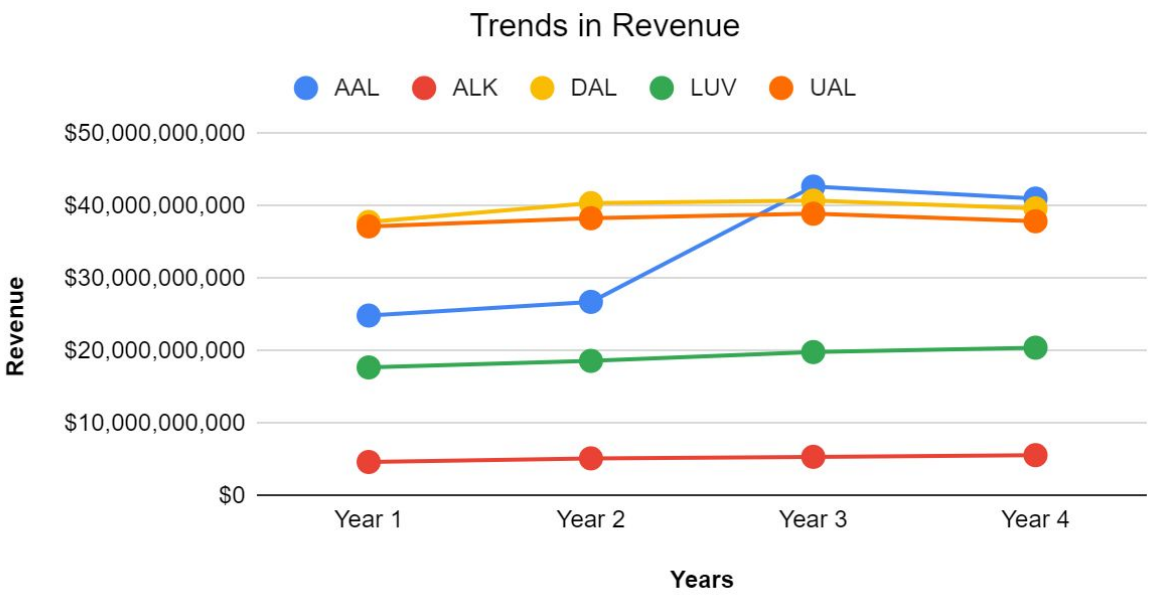
Statistical Inference performed on :

1. **GICS Sector: Industrials**
2. **GICS Sub-Industry: Airlines**
3. **Business Metric: Total Revenue**

- **Data Business Metric is Performed on :**

Ticker Symbol	Years	Period Ending	Total Revenue
AAL	Year 1	12/31/2012	$24,855,000,000
AAL	Year 2	12/31/2013	$26,743,000,000
AAL	Year 3	12/31/2014	$42,650,000,000
AAL	Year 4	12/31/2015	$40,990,000,000
ALK	Year 1	12/31/2012	$4,657,000,000
ALK	Year 2	12/31/2013	$5,156,000,000
ALK	Year 3	12/31/2014	$5,368,000,000
ALK	Year 4	12/31/2015	$5,598,000,000
DAL	Year 1	12/31/2013	$37,773,000,000
DAL	Year 2	12/31/2014	$40,362,000,000
DAL	Year 3	12/31/2015	$40,704,000,000
DAL	Year 4	12/31/2016	$39,639,000,000
LUV	Year 1	12/31/2013	$17,699,000,000
LUV	Year 2	12/31/2014	$18,605,000,000
LUV	Year 3	12/31/2015	$19,820,000,000
LUV	Year 4	12/31/2016	$20,425,000,000
UAL	Year 1	12/31/2012	$37,152,000,000
UAL	Year 2	12/31/2013	$38,279,000,000
UAL	Year 3	12/31/2014	$38,901,000,000
UAL	Year 4	12/31/2015	$37,864,000,000

- **Growth Trends in Revenue**



- **Analysis based on Growth in Revenue**

1. **American Airlines (AAL)**

Since Year 1, AAL has shown an upward trend in Revenue Growth with just a slight hiccup from Year 3 to Year 4. From Year 1 to Year 3 its revenue growth was about $17,795,000,000. Whereas in Year 4, it saw a negative trend as Revenue came down to $40,990,000,000.

2. **Alaskan Airlines (ALK)**

ALK has shown a very constant but very flat positive growth These are the revenue generated for each of the four years as we can see there isn't much increase $4,657,000,000, $5,156,000,000, $5,368,000,000, $5,598,000,000. ALK is also the company with the least revenue generated

3. **Delta Airlines (DAL)**

Where ALK has generated the least revenue, DAL has generated the most revenue. Similar to AAl, DAL also has shown a positive trend from Year 1 to Year 3, but its growth from Year 2 to Year 3 was pretty much flat and From Year 3 to Year 4 there was a dip in revenue from $40,704,000,000 to $39,639,000,000.

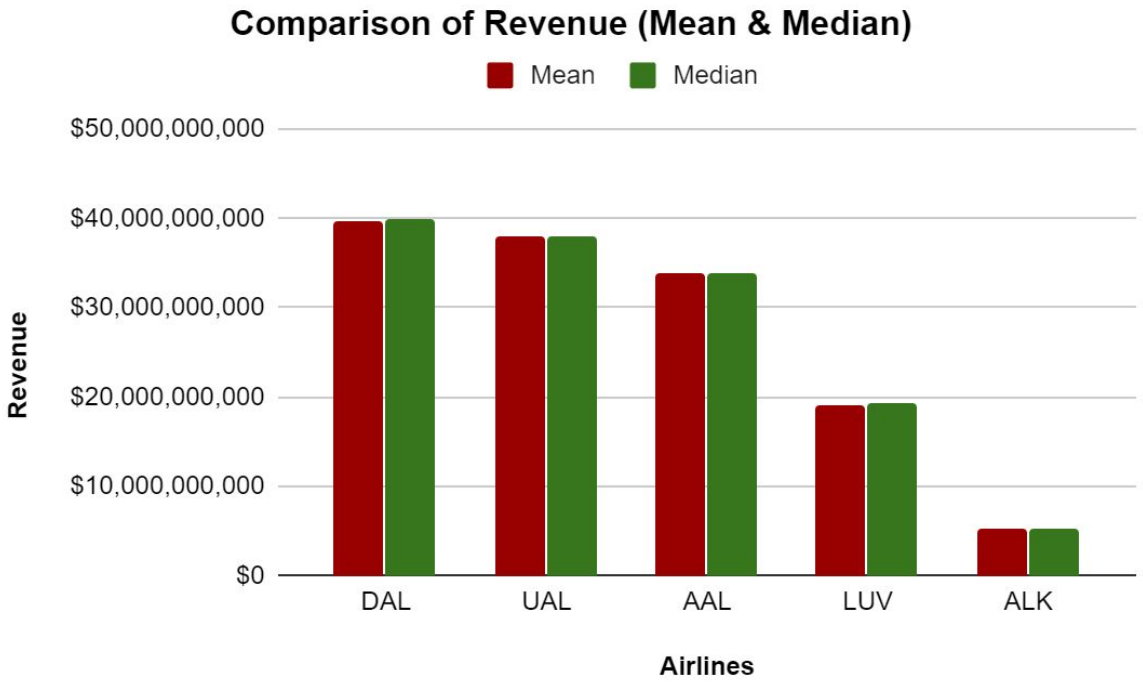
4. **Southwest Airlines (LUV)**

LUV is the second lowest on revenue generated from Year 1 to Year 4, but showing a positive trend and increasing its revenue each year. Its revenues were $17,699,000,000, $18,605,000,000, $19,820,000,000, $20,425,000,000 respectively from Year 1 to Year 4

5. **United Airlines (UAL)**

UAL is a somewhat similar trend to DAL, just a little lower in the revenue generated showing positive growth from Year 1 to Year 3 and then a negative dip from Year 3 to Year 4. The difference between revenue of Year 4 to Year 1 is about $712,000,000.

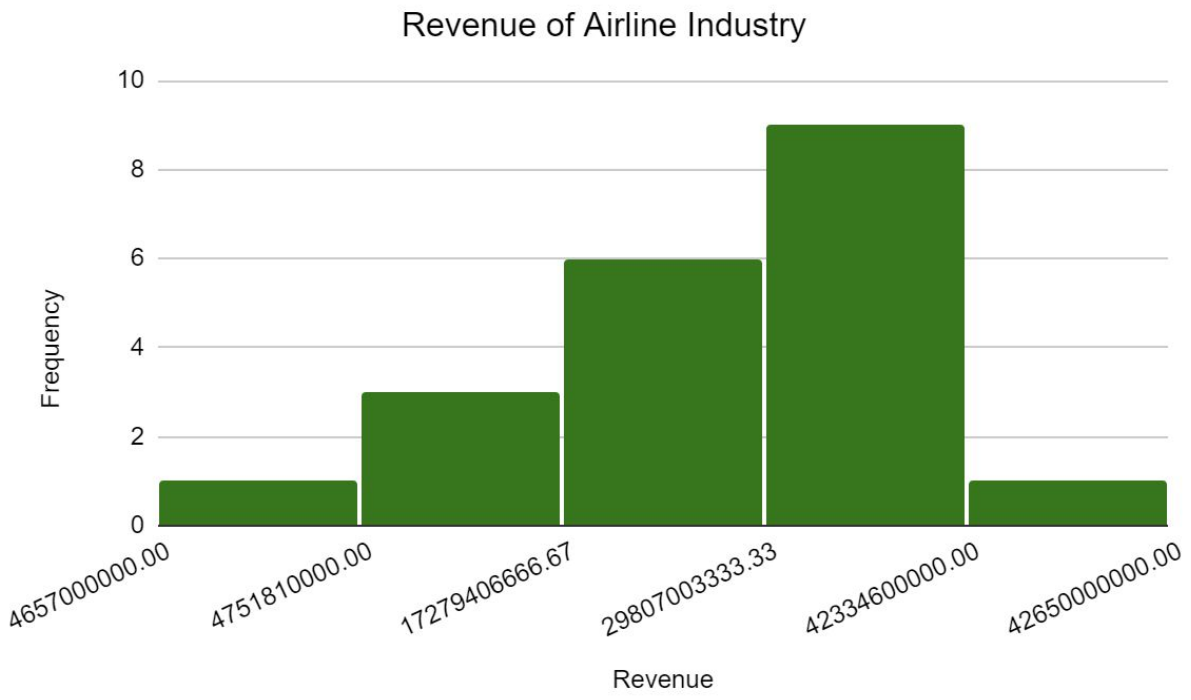
- **Analyses of Revenue based on Measures of Central Tendency**



From the following bar chart, we can analyze that Mean and Median are pretty close to each other with Median being just a little higher than Mean from which we can conclude that there are no outliers present in the data.

Airlines	Mean	Median
DAL	$39,619,500,000	$40,000,500,000
UAL	$38,049,000,000	$38,071,500,000
AAL	$33,809,500,000	$33,866,500,000
LUV	$19,137,250,000	$19,212,500,000
ALK	$5,194,750,000	$5,262,000,000

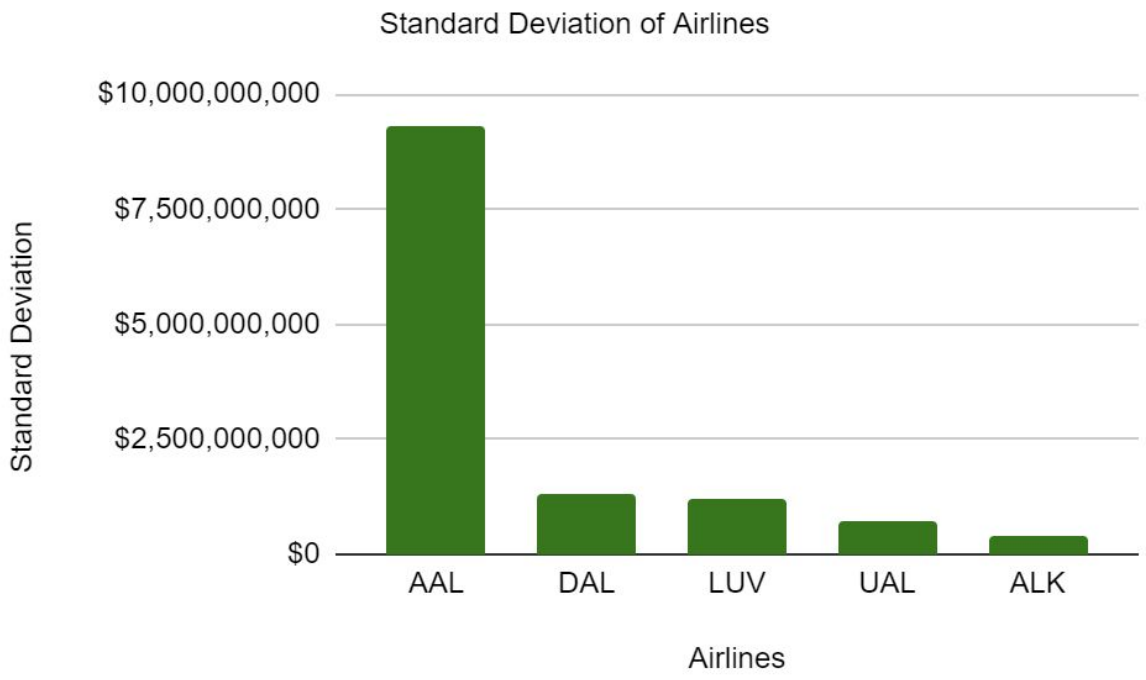
- **Analyses of Revenue of Airline Industry**



From the chart:

1. We can confirm that it is negatively Skewed Distribution / Left Skewed Distribution.
2. This is supported by the Median and Mean Graph above where Median > Mean.
3. The histogram shows us clearly that the airline industry has a bulk of high revenue generation.
4. International airlines constitute the majority of the revenue generated which are AAL, UAL & DAL.
5. An outlier in the data which is $42,650,000,000 which was revenue generated by AAL in 2014 accomplished by no one else.

- **Analyses of Revenue based on Measures of Dispersion**



From the above bar chart, we confirm the following analysis on the Standard Deviation of each airline.

1. There is a huge variation in the Standard Deviation of the various airlines. We can see that the data points are spread out over a large range of values for companies. With AAL having a clear Majority with a Standard Deviation of $9,306,494,381 which is just less than '3x' of the combined total of the rest of the airline companies by $1,690,939,975.
2. ALK has the smallest Standard Deviation of $401,373,787, which is related to the data points and Revenues across years
3. DAL, LUV, UAL each have a Standard Deviation of $1,308,611,096, $1,221,515,555, $734,311,015 respectively. All three companies lie close to the mean and have very little variance supported by the Revenues across years.

- **From the above analysis, we come up to the conclusion that:**

1. AAL, DAL, UAL are among the Highest Grossing Airlines generating higher revenues.
2. These Companies' growth rate and revenue depend on the operations and size.
3. Companies like ALK and LUV fall in the Lower and Middle level in Industry generating low revenue and mediocrely flat growth.

- **Link to Excel Files: Projectdata_NYSE**