

Project Report: Financial Analytics

1. Introduction

This project analyzes the top 500 companies in India based on their market capitalization and quarterly sales. The goal is to uncover key metrics and relationships to assist in making informed investment and strategic decisions.

2. Data Overview

The dataset includes the following columns:

- **Name**: Name of the company
- **Market_Cap_Crore**: Market capitalization in crores
- **Quarterly_Sales_Crore**: Quarterly sales in crores

3. Data Cleaning

- Dropped unnecessary columns (**S.No.** and **Unnamed: 4**).
- Removed rows with missing values in the **Market_Cap_Crore** column.
- Filled missing values in the **Quarterly_Sales_Crore** column with the median.

4. Analysis

Top 10 Companies by Market Capitalization

```
top_10_market_cap = data_cleaned.sort_values(by='Market_Cap_Crore',
ascending=False).head(10)
print("Top 10 Companies by Market Capitalization:")
print(top_10_market_cap)
```

The top 10 companies by market capitalization are the most valuable in the market and significantly influence the economy and stock market.

Top 10 Companies by Quarterly Sales

```
top_10_sales = data_cleaned.sort_values(by='Quarterly_Sales_Crore',
ascending=False).head(10)
print("Top 10 Companies by Quarterly Sales:")
print(top_10_sales)
```

The top 10 companies by quarterly sales showcase strong operational performance and high market demand.

Correlation between Market Capitalization and Quarterly Sales

```
correlation =  
data_cleaned['Market_Cap_Crore'].corr(data_cleaned['Quarterly_Sales_  
Crore'])  
print(f'Correlation between Market Capitalization and Quarterly  
Sales: {correlation}')
```

A positive correlation suggests that higher sales often lead to higher market capitalization, though other factors like profit margins and growth potential also play a role.

Distribution of Market Capitalization

```
plt.figure(figsize=(10, 6))  
data_cleaned['Market_Cap_Crore'].hist(bins=50)  
plt.title('Distribution of Market Capitalization')  
plt.xlabel('Market Capitalization (Crore)')  
plt.ylabel('Frequency')  
plt.show()
```

The distribution of market capitalization indicates market concentration, with a few companies potentially dominating the market if it's right-skewed.

Relationship between Market Capitalization and Quarterly Sales

```
plt.figure(figsize=(10, 6))  
plt.scatter(data_cleaned['Market_Cap_Crore'],  
data_cleaned['Quarterly_Sales_Crore'])  
plt.title('Market Capitalization vs Quarterly Sales')  
plt.xlabel('Market Capitalization (Crore)')  
plt.ylabel('Quarterly Sales (Crore)')  
plt.show()
```

The scatter plot reveals patterns and clusters, offering insights into different company segments based on sales and market value.

5. Conclusion

- **Top Companies by Market Capitalization:** These companies dominate the market and are likely to have a significant influence on the economy and the stock market.
- **Top Companies by Quarterly Sales:** These companies demonstrate strong operational performance and high market demand.
- **Correlation:** A positive correlation suggests that companies with higher sales tend to have higher market capitalizations, though other factors also play a role.

- **Market Capitalization Distribution:** Indicates the level of market concentration.
- **Scatter Plot Insights:** Provides a visual understanding of the relationship between market capitalization and quarterly sales.

6. Recommendations

- **Investment Strategy:** Focus on high market capitalization and strong sales companies for stable investments. Consider high-growth, lower market cap companies for higher risk and reward.
- **Market Analysis:** Benchmark against top companies to identify competitive position and improvement areas.
- **Strategic Planning:** Improve profit margins, growth potential, and investor relations for better market valuation. High market cap companies should maintain their market position by driving sales growth and investor confidence.

This report provides a comprehensive analysis of the top 500 companies in India, offering insights and recommendations to guide investment and strategic business decisions.