**Summary Conclusion**

**Twitter Stock Market Analysis**

**Overview of the Analysis**

This project analyses **Twitter's stock market performance** from **2018 to its delisting**, utilizing **data analysis, statistical tests, visualizations, and an interactive dashboard**. The objective was to identify **stock price trends, market volatility, trading volume behavior, and key events influencing the stock**.

**Key Findings from Data Analysis**

1. **Stock Price Trends:**

* Twitter’s stock exhibited **significant fluctuations** between 2018 and delisting.
* Periods of **growth** were followed by **sharp declines**, indicating sensitivity to **market trends and news events**.

1. **Market Volatility:**

* A **large gap between High and Low prices** on multiple occasions suggests **high volatility**.
* The stock showed **price spikes and crashes**, possibly due to **earnings reports, acquisitions, or external market conditions**.

1. **Trading Volume Insights:**

* **High trading volumes coincided with major stock price movements**, suggesting investor reactions to critical news.
* Volume patterns indicated that **traders were highly responsive to financial reports and policy changes**.

1. **Impact of Events:**

* The **final stock price adjustments before Twitter’s delisting** reflected market reactions to its acquisition.
* **Earnings reports and regulatory changes led to volatility**, with noticeable spikes in price and trading volume.

**Statistical Tests & Their Insights**

1. **T-Test Analysis:**

* A **T-test comparing High and Low prices** confirmed that **Twitter’s stock was highly volatile**, with significant differences between its peak and bottom prices.
* The **Close price was found to be dependent on intraday price movements**, meaning market trends played a strong role in setting closing prices.

1. **Chi-Square Dependency Test:**

* The **Chi-Square test revealed strong dependence** between the High, Low, and Close prices.
* This suggests that **Twitter’s stock price movements followed structured patterns** rather than being random.

**Visualizations Used in the Analysis**

📊 **Stock Price Trend Chart** – Showed **Twitter’s closing price movements over time**.  
📊 **Trading Volume Bar Chart** – Identified **investor activity spikes during major events**.  
📊 **Word Cloud of Key Insights** – Highlighted the **most important themes and patterns** from the analysis.

These visualizations provided a **clear picture of Twitter’s stock behaviour**, helping to explain **how and why price fluctuations occurred**.

**Interactive Dashboard for Client Presentation**

A **fully interactive dashboard** was built using **Power BI & Python (Streamlit)**, allowing users to:  
1. **View stock price trends across different time periods (6M, 1Y, 3Y, Full Data)**  
2. **Analyse trading volume trends to track investor activity**  
3. **Explore key insights dynamically** through charts and text summaries  
4. **Understand market behaviour** via an interactive word cloud

This dashboard ensures that stakeholders can **analyze Twitter’s stock movements efficiently and interactively**.

**Final Conclusions & Recommendations**

**Investment Strategies:**

* **Short-term traders** could profit from volatility, especially during major announcements.
* **Long-term investors faced higher risks**, as external factors such as acquisitions, earnings reports, and regulatory changes heavily influenced stock movement.

**Market Trends & Predictions:**

* The statistical tests confirmed that **stock prices followed structured patterns**, meaning **technical indicators (e.g., Moving Averages, RSI) could enhance trading strategies**.
* **Further analysis using sentiment data (Twitter posts, news trends) could reveal correlations between public perception and stock performance.**

**Future Research Opportunities:**

* Comparing Twitter’s stock with other **social media companies (Meta, Snapchat)** to see how industry trends affected its performance.
* Conducting a **deeper dive into earnings reports and economic conditions** to understand key drivers behind price fluctuations.

**Final Takeaway**

This comprehensive analysis, supported by **statistical tests, visualizations, and an interactive dashboard**, offers **valuable insights into Twitter’s stock journey**. The findings can assist **investors, analysts, and decision-makers** in making informed financial decisions.