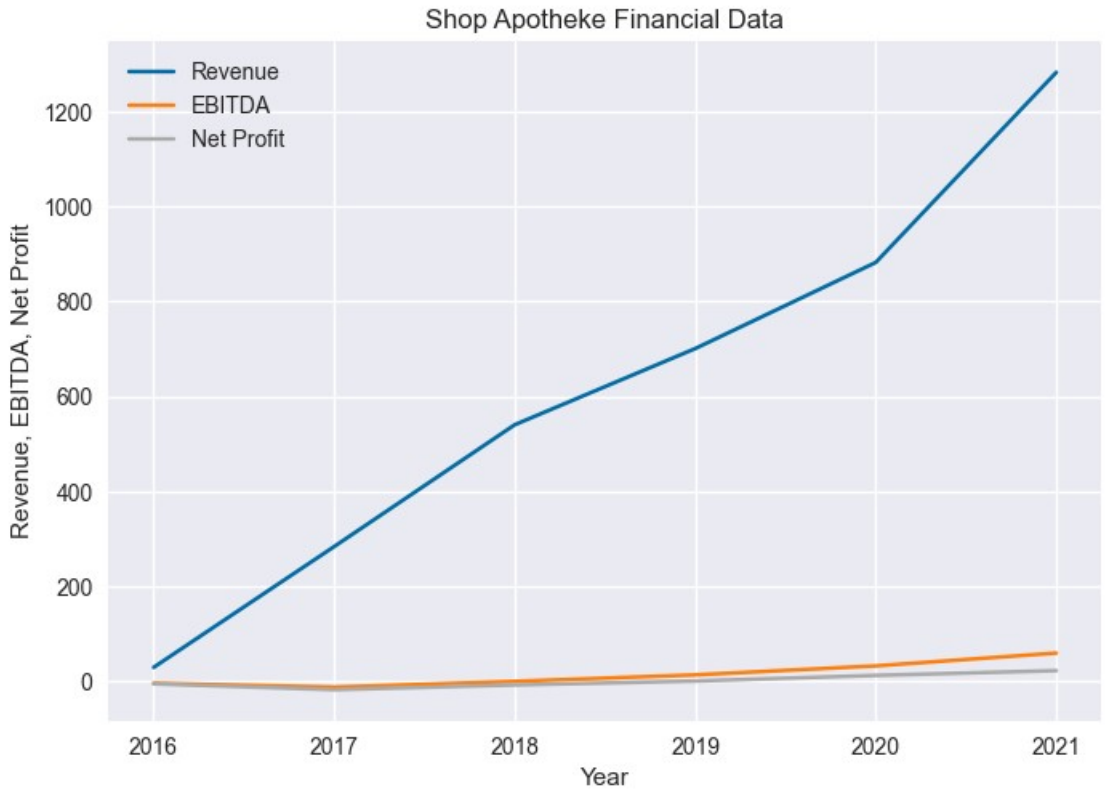
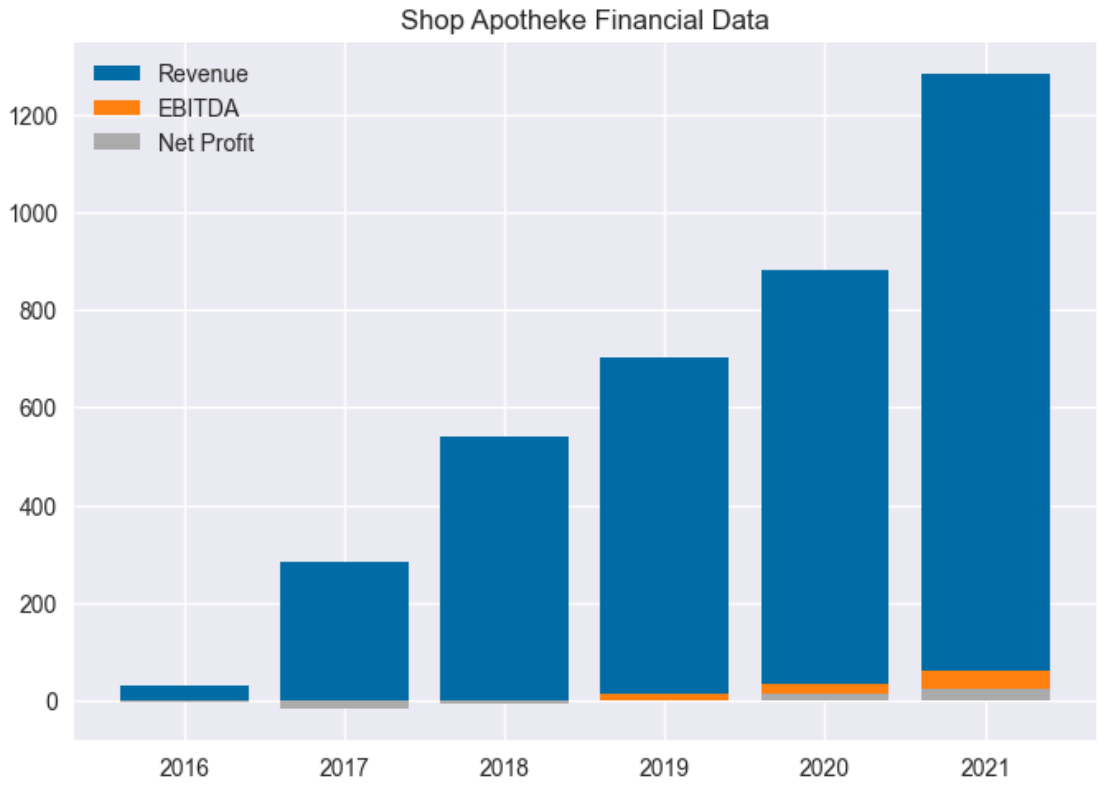
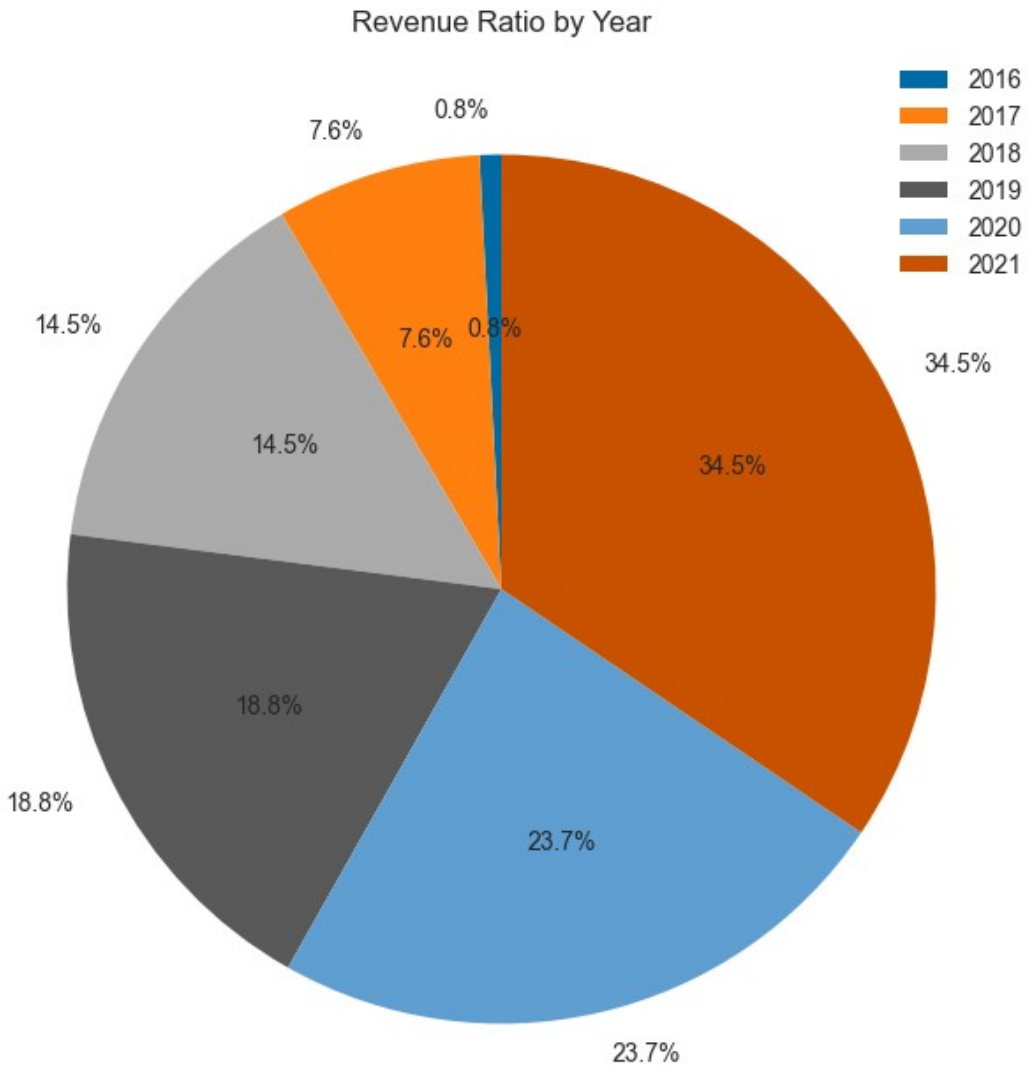
```python
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
import re

# Define file path
path = r'data.xlsx'

# Read data from Excel file into a DataFrame
df = pd.read_excel(path)

# Print the first few rows of the DataFrame to confirm the data was
read correctly
print(df.head())

# Clean up column names by removing parentheses, brackets, and extra
whitespace
df.columns = [re.sub(r"\(.*?\)|\[.*?\]","",col) for col in df.columns]
# Remove parentheses and brackets
df.columns = df.columns.str.strip().str.lower().str.replace(' ', '_')
# Strip whitespace, convert to lowercase, and replace spaces with
underscores

# Print the first few rows of the DataFrame again to confirm the
column names were cleaned up
print(df.head())

# Use a custom style for the plot
plt.style.use('tableau-colorblind10')

# Add a title and axis labels to the plot
plt.title('Shop Apotheke Financial Data')
plt.xlabel('Year')
plt.ylabel('Revenue, EBITDA, Net Profit')

# Plot the data for revenue, EBITDA, and net profit
plt.plot(df.year, df['revenue'], label='Revenue')
plt.plot(df.year, df['ebitda'], label='EBITDA')
plt.plot(df.year, df['net_profit'], label='Net Profit')

# Add a legend to the plot
plt.legend()

# Display the plot
plt.show()
```




```
# Set the plot title
plt.title('Shop Apotheke Financial Data')

# Define a dictionary with keys for each data series and their
respective values
l = {'Revenue': df.revenue, 'EBITDA': df.ebitda, 'Net Profit':
df.net_profit}

# Loop over each key-value pair in the dictionary and plot a bar chart
for each data series
for k, v in l.items():
    plt.bar(df.year, v, label=k)

# Add a legend to the plot
plt.legend()

# Display the plot
plt.show()
```




```
# Get revenue data for each year
revenues = df['revenue'].tolist()

# Calculate total revenue across all years
total_revenue = sum(revenues)

# Calculate revenue ratios for each year
ratios = [r / total_revenue for r in revenues]

# Convert ratios to string representation with 1 decimal place
ratio_labels = ['{:.1%}'.format(r) for r in ratios]

# Create pie chart
fig, ax = plt.subplots(figsize=(8, 8))
ax.pie(revenues, labels=ratio_labels, autopct='%1.1f%%',
startangle=90)

# Add title and legend
ax.set_title('Revenue Ratio by Year')
ax.legend(df['year'], loc='best')

# Show chart
plt.show()
```



Overal Analysis Based on the data, we can observe that the revenue, EBITDA, and net profit of Shop Apotheke have generally increased over the years from 2018 to 2022.

In particular, the revenue increased from €540.8 million in 2018 to €947.4 million in 2022, representing a compound annual growth rate (CAGR) of approximately 15.8%. Similarly, the EBITDA increased from €10.8 million in 2018 to €49.4 million in 2022, with a CAGR of approximately 47.2%.

However, the net profit of the company has been volatile over the years, with a significant decline in 2019 and 2020, followed by a rebound in 2021 and 2022. This could be due to various factors such as changes in operating expenses, financing costs, or one-time events affecting the profitability of the company.

Overall, the revenue growth and increasing EBITDA are positive signs for the company, but the volatile net profit should be monitored closely to understand its underlying causes and potential impact on the financial health of the company.