

Decomposition for AtliQ Hardware

Considering the nature of AtliQ Hardware's business and the potential for improving their overall performance and sales, I believe the very important analysis to focus on is "Customer Analysis - Segmentation of Customers." Understanding the customer base and their buying behavior is crucial for tailoring marketing strategies, optimizing product offerings, and improving customer satisfaction, which can ultimately lead to increased revenue and profits.

Research Area: Customer Analysis – Segmentation of customers.

Objective: The primary objective of this research is to conduct a comprehensive customer analysis for AtliQ Hardware, aiming to gain valuable insights into customer behavior, preferences, and purchasing patterns. By achieving this objective, the research will successfully identify distinct customer segments and potential opportunities to enhance the business's performance and customer engagement.

Research Questions:

1. What are the primary customer segments for AtliQ Hardware based on platform, channel, and region?
2. How do customer segments differ in terms of their purchase frequency, value, revenue contribution, and profitability?
3. What are the characteristics of high-value customers, and how can the company enhance business relationships with them?
4. How has customer purchasing behavior evolved over time and across different markets?
5. Which product categories are the most popular among different customer segments?
6. What are the key factors influencing customer loyalty, repeat purchases, and retention for each customer segment?
7. How much revenue does each customer segment contribute to the overall business?
8. Are there any untapped customer segments that can be targeted for business growth?
9. Are there any specific customer segments with high growth potential that the company can target for business expansion.

Hypothesis:

1. Customers with a higher Customer Lifetime Value are more likely to purchase products from the 'E-Commerce' platform compared to 'Brick & Mortar' platform at AtliQ Hardware.
2. Customers in the 'EU' region exhibit higher customer loyalty and retention rates compared to customers in other regions at AtliQ Hardware.

3. Customers in the 'Retailer' channel exhibit higher product category diversity in their purchases compared to customers in the 'Direct' and 'Distributor' channels at AtliQ Hardware.

Key Metrics to Calculate:

- Customer Retention Rate: The percentage of customers who remain loyal to AtliQ Hardware over a specific period.
- Churn Rate: The percentage of customers who stop making purchases or leave AtliQ Hardware over a specific period.
- Average Check: The average amount spent by customers in a single purchase transaction.
- Purchase Frequency: The average number of purchases made by customers within a specific period.
- Customer Lifetime Value (LTV): To measure the value of different customer segments over time.
- Customer Acquisition Cost (CAC): The cost incurred to acquire a new customer, including marketing and sales expenses.

Research Plan:

1. Data overview and preprocessing:
 - Connect to the SQL database and explore all available tables.
 - Clean and preprocess the data, ensuring data integrity and consistency.
2. Customer Segmentation:
 - Segment customers based on platform, channel, and region to identify distinct customer groups.
3. Customer Behavior Analysis:
 - Calculate customer retention rate to assess customer loyalty over time.
 - Compute churn rate to measure the percentage of customers who stop making purchases or leave AtliQ Hardware.
 - Determine the average check (average transaction amount) and purchase frequency to understand customer spending patterns.
4. Customer Lifetime Value (LTV) and Customer Acquisition Cost (CAC):
 - a. Calculate customer lifetime value (LTV) to measure the value of different customer segments over time.
 - b. Calculate customer acquisition cost (CAC) to understand the cost incurred in acquiring new customers, including marketing and sales expenses.
5. Financial Performance Analysis:
 - Analyze revenue and profits for each customer segment to assess their contribution to the overall business.

6. Product Category Analysis:

- Identify the most popular product categories among different customer segments.

7. Visualization and Insights:

- Visualize the findings using charts, graphs, and dashboards for easy interpretation.
- Generate actionable insights and recommendations to improve customer engagement, satisfaction, and overall business performance.

Tools and Libraries:

- Python: Use Python programming language for data cleaning, manipulation, and analysis.
- SQL: Connect to the database and retrieve relevant data for analysis.
- Pandas: Manipulate and preprocess the data efficiently.
- Matplotlib, Seaborn, Plotly: Create visualizations and charts for data exploration and presentation.
- Tableaus: Create dashboard.