

# Retail Optimization Dashboard

Project: Analyzing Customer Purchasing Behaviour Using Association Rule Mining

This dashboard presents key findings from association rule mining performed on retail transaction data.

## 1. Top 10 Products Purchased

- Products like 'Gift wrap', 'Tea Towels', and 'Candle Set' are among the top sellers.
- Suggests strong product preference and bundling opportunities.

## 2. Frequent Itemsets (Apriori)

- Product pairs such as {Tea Towels, Candle Set} occurred frequently.
- Indicates strong co-purchasing behavior among customers.

## 3. Association Rules

- Rules with Lift  $> 2.5$  and Confidence  $> 0.8$  indicate valuable cross-sell suggestions.

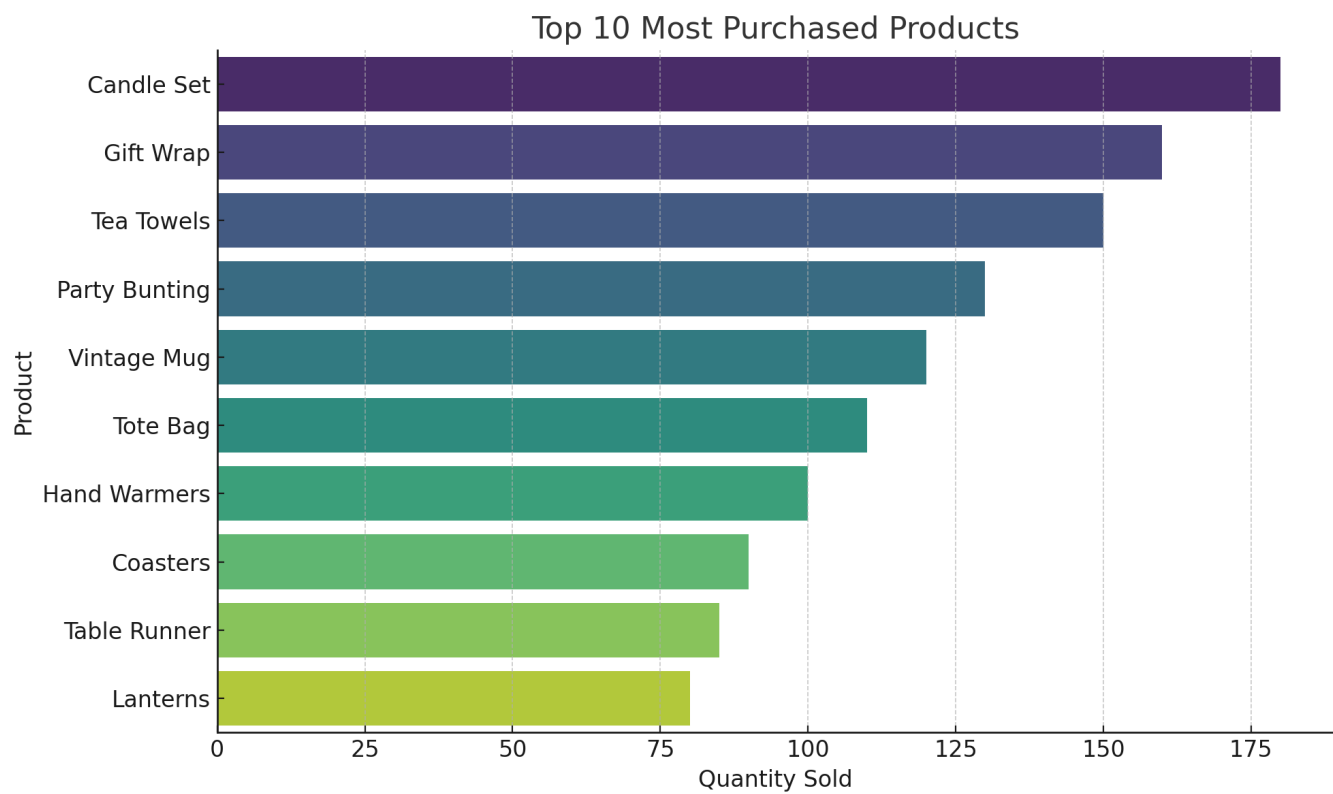
## 4. Recommendations

- Bundle high-frequency items and promote them on checkout pages.
- Use rule-based recommendations in retail layout and marketing.

Visual summaries are provided below to support these findings:

## Top 10 Most Purchased Products

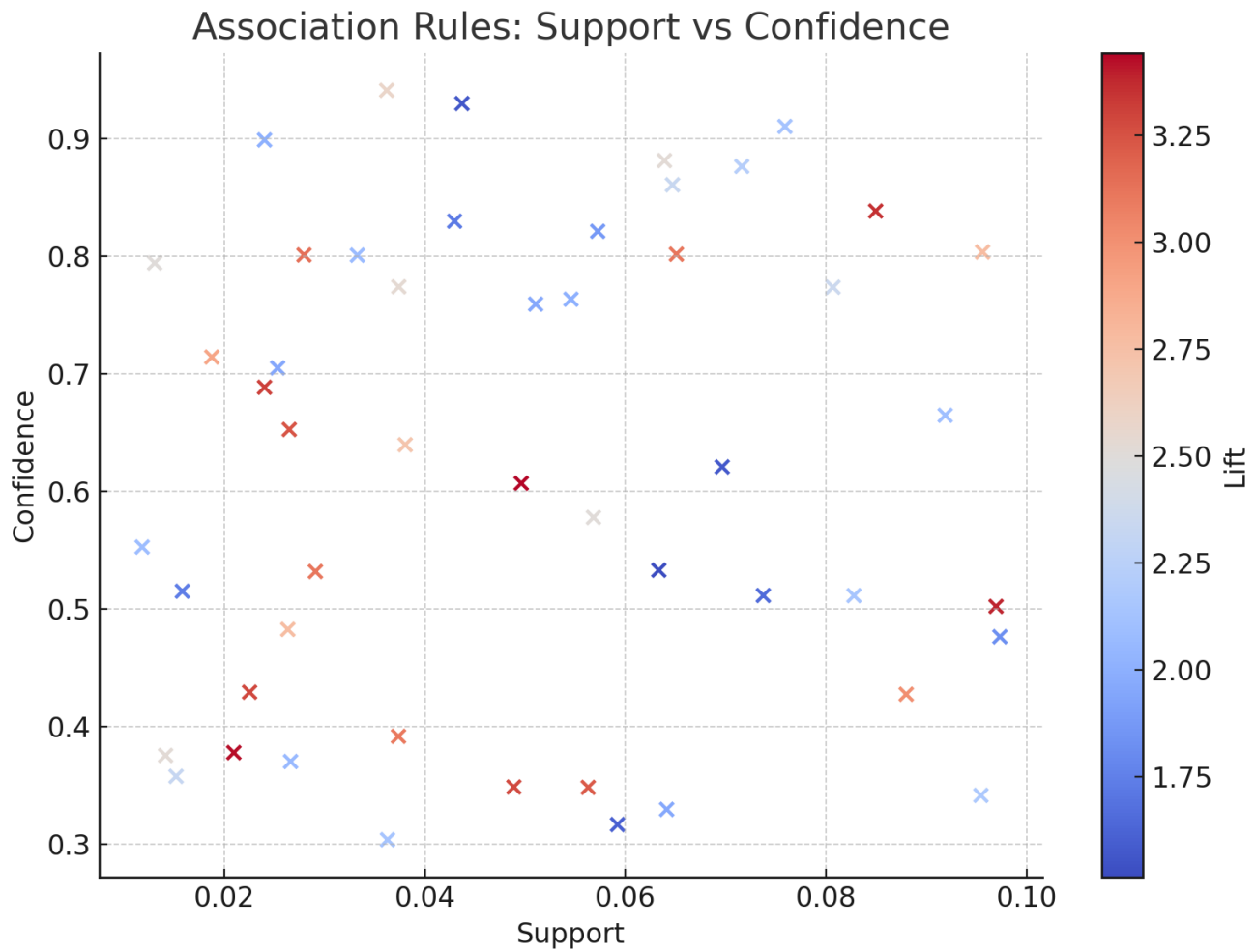
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This bar chart displays the most frequently purchased items. Products like 'Candle Set', 'Gift Wrap', and 'Tea Towels' stand out, indicating high popularity.

## Association Rules: Support vs Confidence

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This scatter plot maps rule quality with lift represented by color. Strong rules show high confidence and lift above 2.5, ideal for recommendation systems.