Retail Sales Case Study

May 2025

1. Executive Summary

An in-depth analysis was conducted on retail sales performance for a specific product, focusing on sales volume, promotional activities, and daily gross profit. The objective was to assess the product's market response, profitability drivers, and promotional effectiveness. The analysis was done on snowflake (SQL) and PowerBI for visualization.

Key Findings:

- **Sales Trends**: Sales showed a volatile pattern over the analysis period, with peak performance during promotional periods. Average Selling Price of the product is **R37** per unit
- **Promotional Impact**: Promotions significantly influenced sales volumes, with a marked uplift. However, the net impact on profit varied depending on discount levels and cost structures.
- **Profitability Insights**: Daily gross profit remained fluctuating depending on the type of sales, with high-profit days closely aligned with strong sales performance during effective promotions. Certain promotions, however, eroded profit margins due to deep discounting.
- The Daily Average Sales is **R177 502**, the Daily Average Quantity Sold is **5014** and the Average % Gross Profit is approximately **-0,87%**

2. Methodology

1. The daily selling price was calculated using the formula bellow:

$$\boldsymbol{Price\ per\ Unit = \frac{Daily\ Total\ Sales}{Daily\ Units\ Sold}}$$

2. The average unit price was calculated using the total sales and total units over the period.

$$\boldsymbol{Average\ Selling\ Price\ per\ Unit = \frac{Total\ Sales}{Total\ Units\ Sold}}$$

Total Sales – Revenue generated in a day
Units Sold – The quantity sold in a day

2. Methodology

3. The daily percentage gross profit was calculated using the formula below:

$$\boldsymbol{Daily\ \%\ Gross\ Profit} = \left(\frac{\boldsymbol{Sales - Cost\ of\ Sales}}{\boldsymbol{Sales}}\right) * \mathbf{100}$$

4. The daily percentage gross profit per unit was calculated as follows:

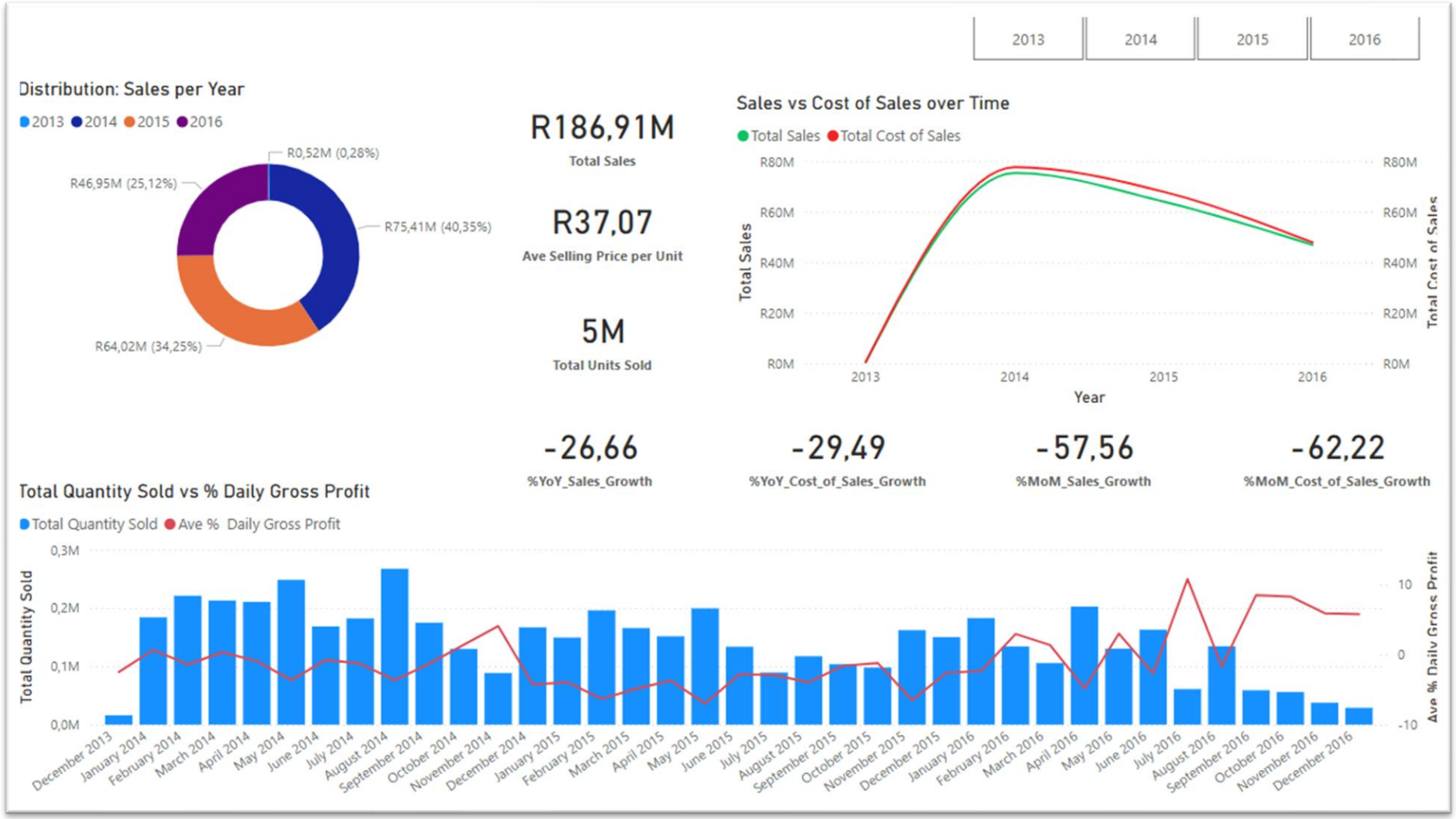
$$\boldsymbol{Daily\ \%\ Gross\ Profit}\ \mathbf{per\ unit} = \left(\frac{\boldsymbol{Sales/unit - Cost\ of\ Sales/unit}}{\boldsymbol{Sales/unit}}\right) * \mathbf{100}$$

5. Promotion periods can be identified as follows:

- Sales and/or quantities significantly higher than the daily average.

Calculating the daily average sales and daily average quantity sold, as well as the average % gross profit for the product.

4. Sales Performance over Time Analysis



Key Highlights

- The sales and costs appear to be proportionally linked, with the costs slightly higher than sales over time
- At the end of 2016, both sales and costs have significantly been reduced, which shows less product was sold during the period
- On days when more quantity is sold, the % gross profit has been low which shows that the product performs better when not in promotion

5. Recommendations

- Optimize promotional strategy by focusing on high-conversion campaigns that maintain healthy profit margins.
- Investigate underperforming sales days for operational or market-related issues.
- Consider pricing strategies that balance volume growth with profitability sustainability.