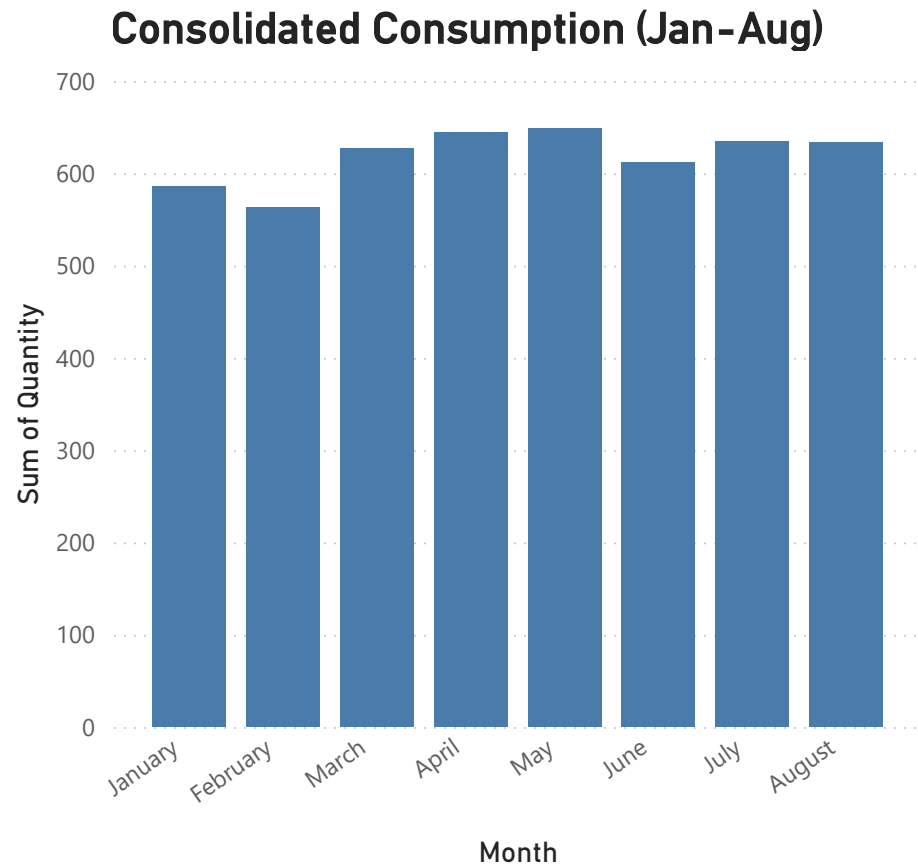Prepared by: **Arwa Menaouar**
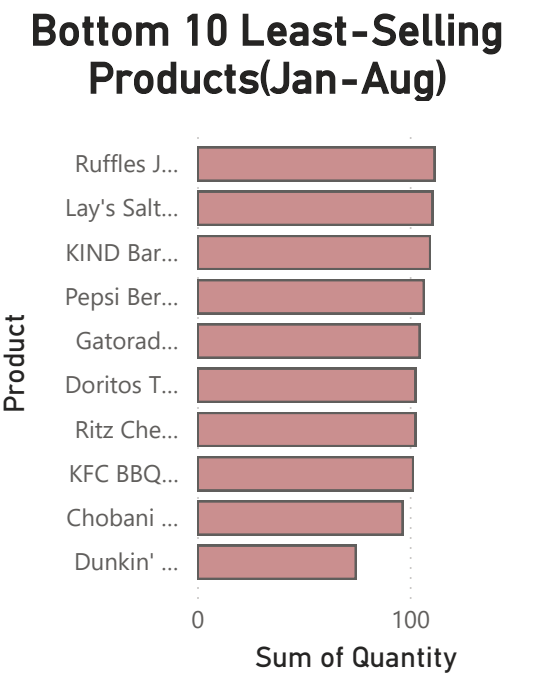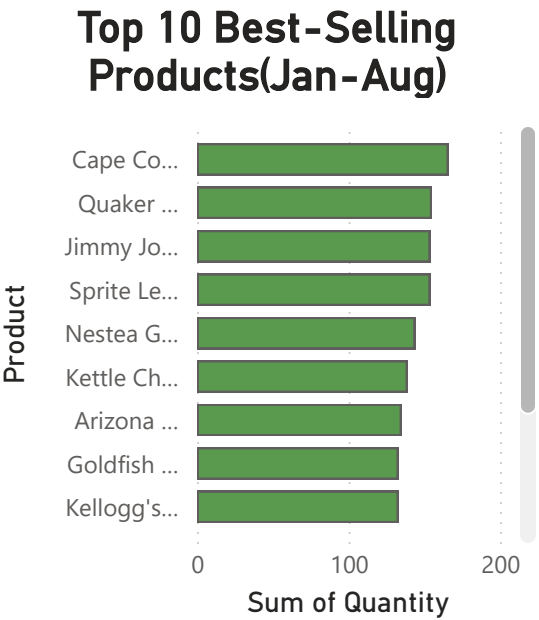
Overview:

This report analyzes eight months of vending machine transactions to understand consumption patterns, product performance, and customer payment behavior. The findings highlight consistent weekday demand, strong weekend activity, and clear revenue concentration across specific product categories. The goal is to provide actionable, data-driven recommendations to improve stocking efficiency, prevent product shortages, and optimize operational planning.

Consolidated Consumption (Jan-Aug)

Insights: Monthly consumption shows a generally upward pattern from January to May, though with early-year fluctuations. Sales begin at a moderate level in January, dip slightly in February, then rise steadily through March, April, and peak in May. A noticeable drop occurs in June, followed by a return to stable, slightly higher levels in July and August, indicating strong summer demand despite the June dip.

Top 10 Best-Selling Products(Jan-Aug)

Products shown: Cape Co..., Quaker..., Jimmy Jo..., Sprite Le..., Nestea G..., Kettle Ch..., Arizona..., Goldfish..., Kellogg's...

Bottom 10 Least-Selling Products(Jan-Aug)

Products shown: Ruffles J..., Lay's Salt..., KIND Bar..., Pepsi Ber..., Gatorad..., Doritos T..., Ritz Che..., KFC BBQ..., Chobani..., Dunkin'...

Filter by Machine

Machine

- ☐ Machine 1
- ☐ Machine 2
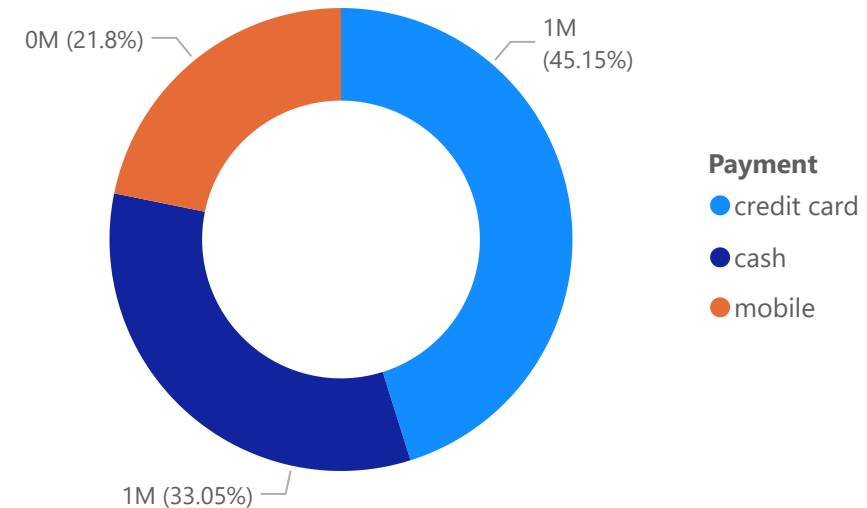- ☐ Machine 3
- ☐ Machine 4
- ☐ Machine 5

Insights:

The payment data shows a clear customer preference for card and cash-based transactions. *Credit card payments* account for **45.15%** of total revenue, making them the dominant method. *Cash* represents **33.05%**, while *mobile payments* contribute **21.8%**.

From an operational perspective, this distribution indicates that many customers already rely on both card and cash, suggesting that the company's plan to install vending machines that accept cash-only would not align with current user behavior.
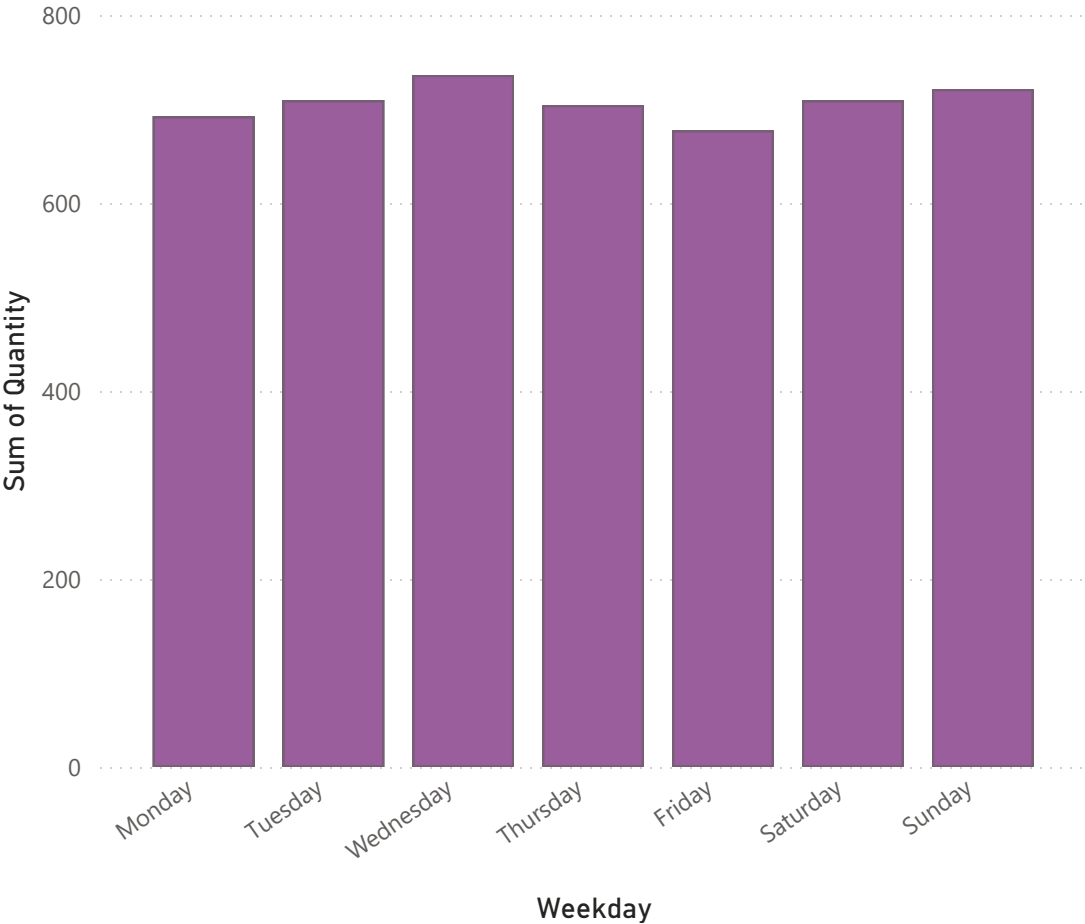
Introducing cash-only machines would likely reduce accessibility, create longer wait times, and potentially decrease overall sales, especially during peak office hours when convenience matters most.

Recommendation: Prioritize machines that support multiple digital payment options (credit card, Apple Pay/Google Pay, etc.). This aligns with actual consumption patterns and supports a smoother high-volume transaction flow.

Payment Method Distribution (Jan-Aug)

Payment
- credit card
- cash
- mobile

Sales by Weekday (Jan-Aug)
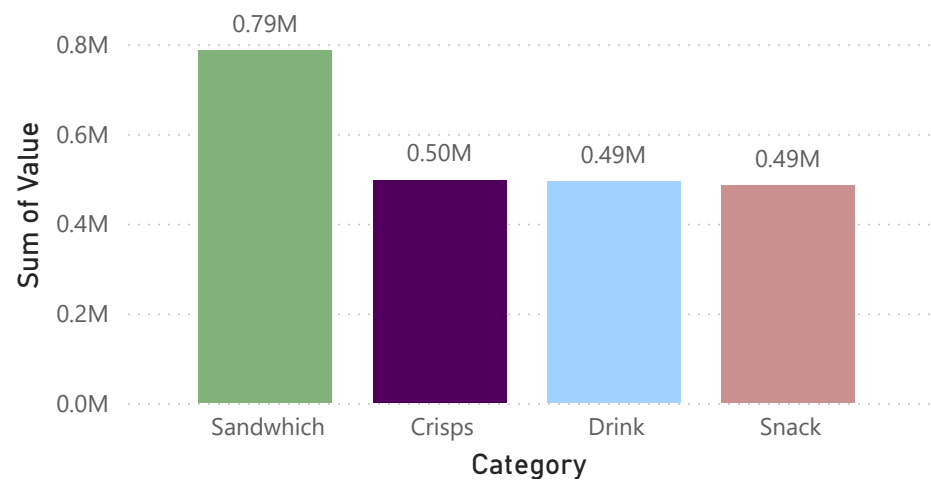

Sales Patterns

Sales volumes remain stable throughout the week, with only small fluctuations. Consumption peaks *mid-week* **(Wednesday: 736 units)**, while *Friday* shows the lowest volume **(677 units)**. Weekends perform surprisingly well, Saturday and Sunday both exceed early-week demand, suggesting that machines serve not only weekday traffic but also users outside standard office hours.

This pattern indicates consistent demand every day, driven by both regular weekday activity and steady off-peak or weekend usage. Machines are relied on continuously rather than in short spikes.

Recommendation: *Refill Timing*
To maintain availability before the two strongest cycles, mid-week and weekend, machines should be refilled on Tuesday morning and again on Friday morning. This ensures machines are stocked ahead of peak demand and minimize stockouts with efficient operational effort.

Total Revenue by Product Category

Sum of Value

- 0.8M
- 0.79M (Sandwhich)
- 0.6M
- 0.50M (Crisps)
- 0.49M (Drink)
- 0.49M (Snack)
- 0.4M
- 0.2M
- 0.0M

Category

Total Volume Sold (Jan-Aug)

4948.00

Sum of Quantity

Total Revenue by Product Name

Product:
- Jimmy John's S...
- McDonald's Sea...
- Subway TurkeyT...
- Panera VeggieD...
- Arby's CheesyR...
- Starbucks Tuna...
- Quiznos PestoC...
- Cape Cod Garlic...
- Quaker Oats Oa...
- Jersey Mike's M...
- Nestea GingerZi...
- Kellogg's Fruity...
- KFC BBQChicke...
- Coca-Cola Citru...

0%   50%   100%

Sum of Value

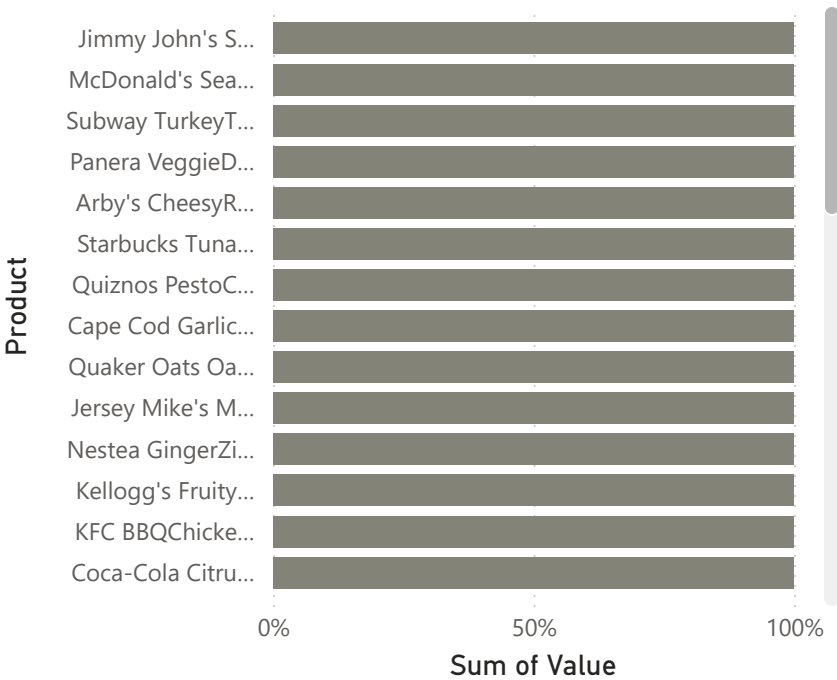## Average Selling Price (Jan-Aug)

456.89

Average Selling Price

Insights: The highest revenue comes from Sandwiches (0.79M), followed by Crisps (0.50M) and Drinks (0.49M), indicating strong demand for higher-priced, meal-type items. Snack products generate the lowest revenue despite steady unit sales.

A total of 4,948 units were sold across all categories from January to August. The average selling price of 456.89 reflects the combined effect of both premium sandwich items and mid-priced snacks and drinks.

These financial patterns highlight the importance of maintaining strong stock availability for sandwiches and top-performing beverage items, as they drive the majority of total revenue.

Recommendations:

Sales trends show consistent daily demand, with clear mid-week and weekend peaks. To support this pattern, vending machines should be refilled twice weekly on Tuesday morning and Friday morning to ensure availability during the two strongest consumption cycles.

Financial analysis highlights that sandwiches drive the majority of revenue. Crisps, drinks, and snacks follow at similar revenue levels, forming a consistent mid-range group. Stock planning should therefore prioritize sandwiches first, while ensuring stable availability of the other three categories due to their steady and comparable performance. Low-performing products that consistently show weak sales across machines should be reduced or replaced to make room for higher velocity items.

Payment behavior strongly favors credit card payments, representing the largest share of the transaction value. For this reason, installing cash-only machines would reduce accessibility and likely decrease sales. Multi-payment machines remain the most effective option.

Overall, optimizing refill timing, emphasizing high-revenue product categories, and maintaining flexible payment options will improve both operational efficiency and customer satisfaction across all machines.