

Vendor Performance & Product Pricing Optimization

Executive Summary

This project provides a comprehensive analysis of vendor performance and product pricing efficiency using purchase, sales, and inventory data. The goal is to identify which vendors and brands are driving profitability, optimize pricing strategies, and uncover operational inefficiencies such as excess inventory or freight overheads.

Business Objectives

1. Evaluate vendor-wise profitability and freight cost efficiency.
2. Optimize pricing by analyzing margins between purchase cost and selling price.
3. Identify brands with low sales but high profit margins—potentially under-promoted or overpriced.
4. Highlight capital inefficiencies due to slow-moving or unsold inventory.

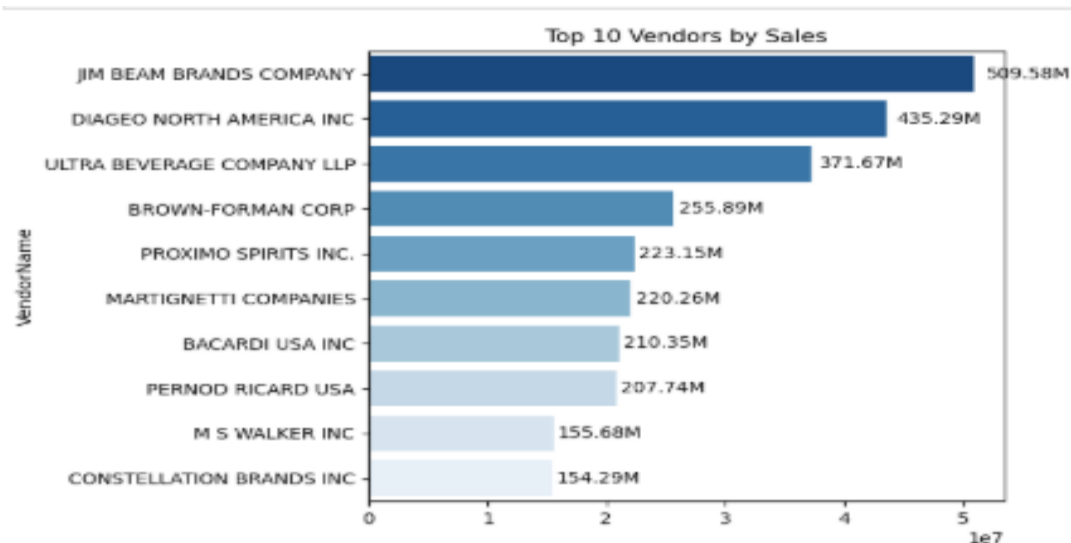
Data Sources

Data is extracted from an internal **SQLite database**, including:

Data Table	Description
Purchases	Product purchases by vendor and brand
Sales	Quantity sold and revenue per product
Purchase Prices	Historical cost per product per vendor
Vendor Invoices	Freight charges and total invoice amounts
Inventory Levels	Opening and closing inventory per product

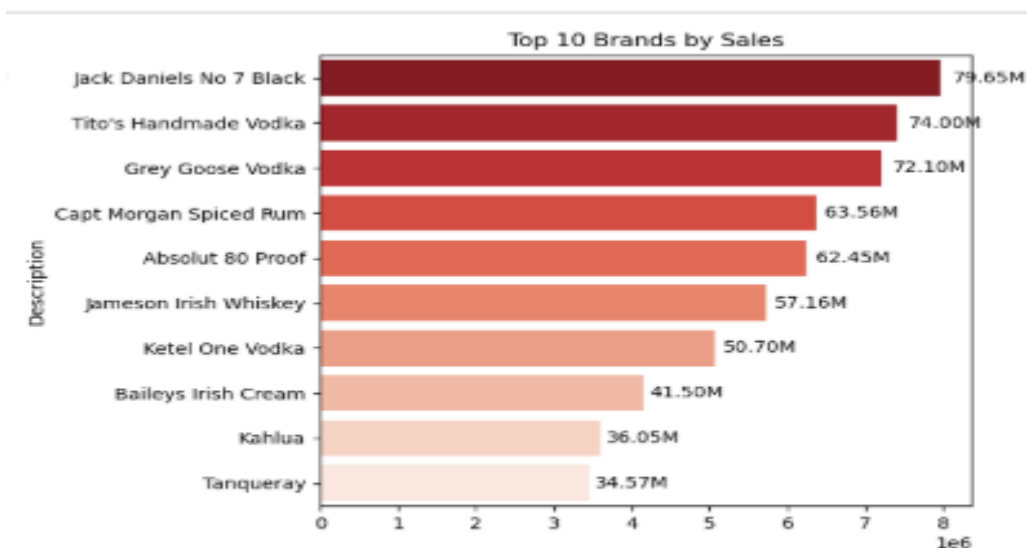
Key Findings

1. Top 10 Vendors by Sales



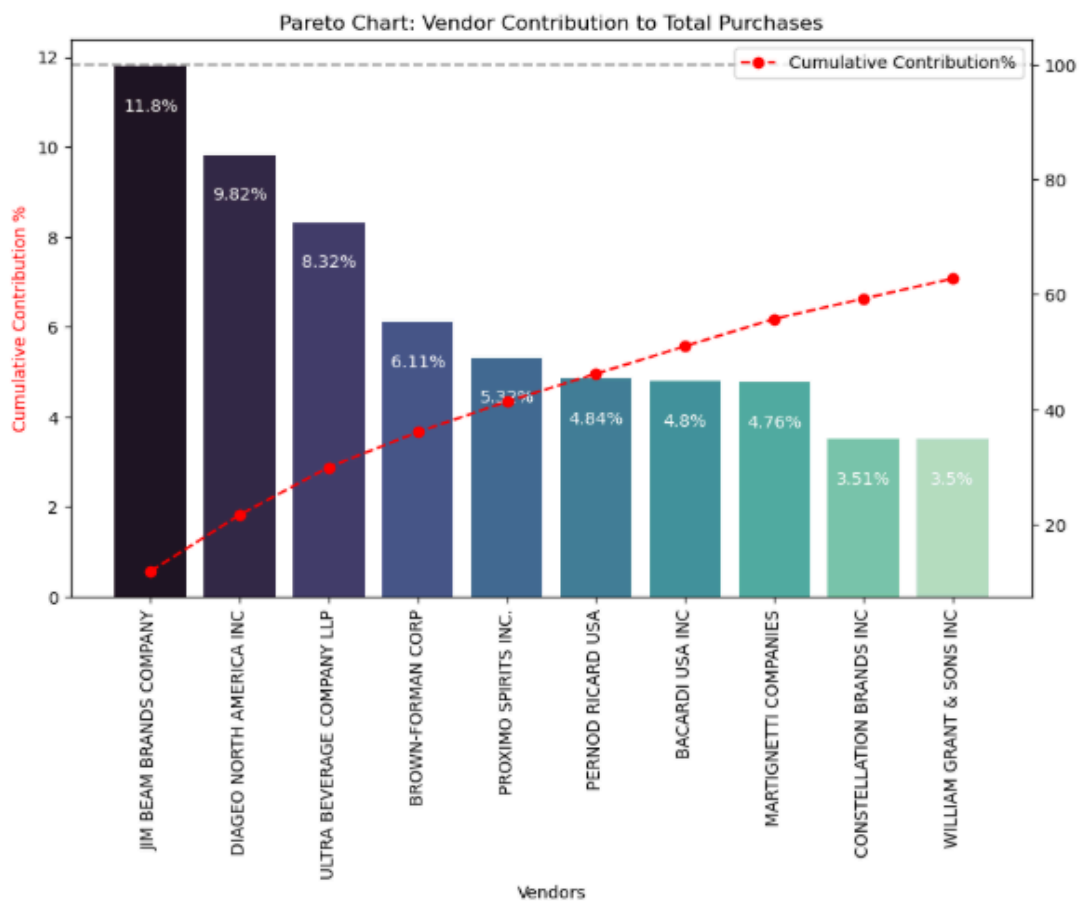
- **Jim Beam Brands Company** is the top vendor by sales, with sales of \$509.58 million.
- **Diageo North America Inc** is the second-largest vendor with \$435.29 million in sales.
- The top three vendors (Jim Beam, Diageo, and Ultra Beverage Company LLP) all have sales exceeding \$350 million.
- There's a significant drop-off in sales after the top few vendors, with the 10th vendor, Constellation Brands Inc., having sales of \$154.29 million, which is less than a third of Jim Beam's sales.

2. Top 10 Brands by Sales



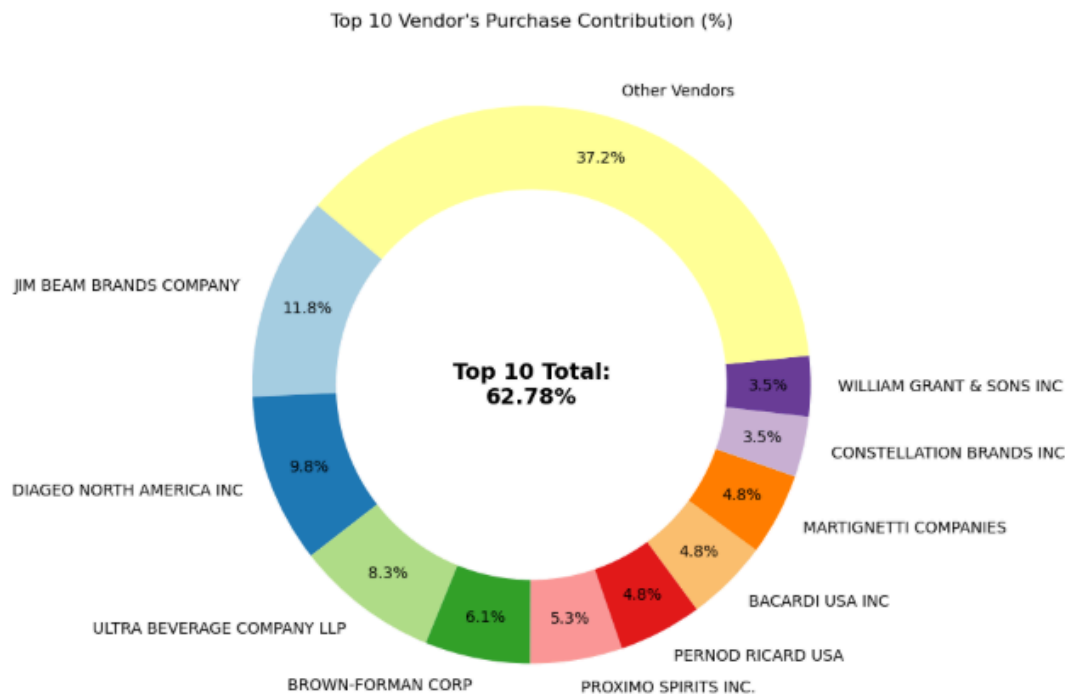
- **Jack Daniel's No 7 Black** is the top-selling brand with sales of \$79.65 million.
- **Tito's Handmade Vodka** is the second-highest selling brand with \$74.00 million in sales.
- **Grey Goose Vodka** is also a strong performer at \$72.10 million.
- The top 5 brands all have sales above \$60 million.
- The difference between the top brand (Jack Daniel's No 7 Black) and the 10th brand (Tanqueray) is substantial, with Tanqueray's sales (\$34.57 million) being less than half of Jack Daniel's.

3. Vendor Contribution to Total Purchases



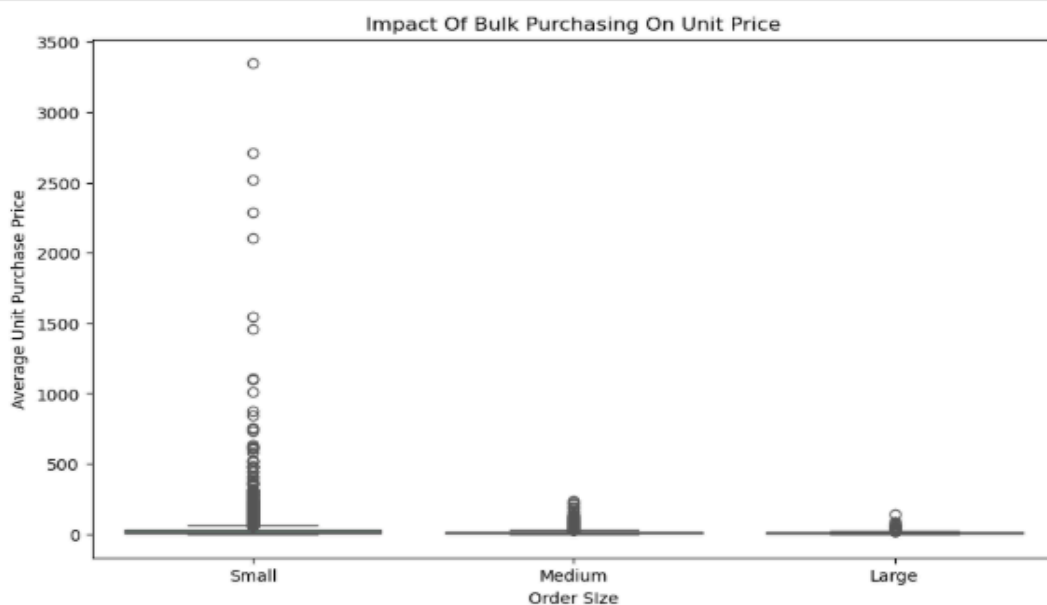
- **Vendors:** Jim Beam Brands Company is the top vendor by sales and contributes the most to total purchases. The top few vendors dominate the market.
- **Brands:** Jack Daniel's No 7 Black is the top-selling brand, followed closely by Tito's Handmade Vodka.
- **Pareto Principle:** A small number of vendors account for a significant majority of total purchases, illustrating the Pareto principle.

4. Key Vendor and Brand Performance Insights



- The top 10 vendors make up 62.78% of total purchases.
- "Other Vendors" (outside the top 10) account for a substantial 37.2%.
- Jim Beam Brands Company is the single largest contributor among the top 10 at 11.8%.

5. Impact Of Bulk Purchasing On Unit Price

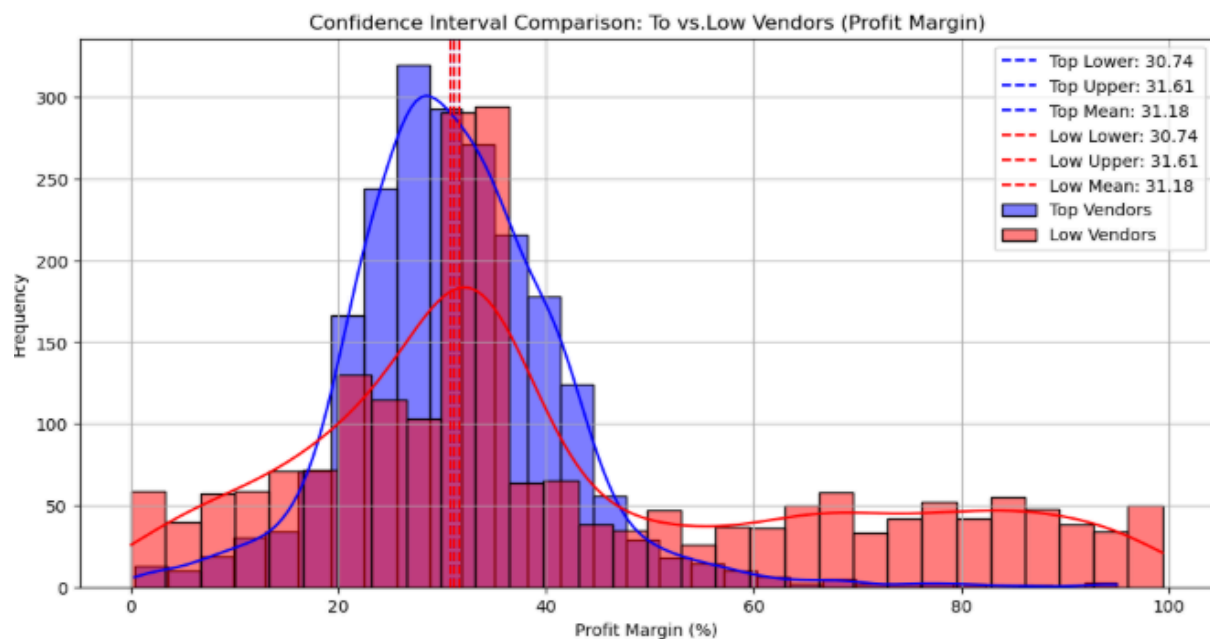


- Vendors buying in bulk (Large Order Size) get the lowest unit price (\$10.78 per unit), meaning higher margins if they can manage inventory efficiently.
- The price difference between Small and Large orders is substantial (~72% reduction in unit cost)
- This suggests that bulk pricing strategies successfully encourage vendors to purchase in larger volumes, leading to higher overall sales despite lower per-unit revenue.

6. Total Unsold Capital

- Total Unsold Capital: 2.71M

7. Profit Margin Analysis: Top vs. Low Vendors



- **Significant overlap** in profit margins between "Top" and "Low" vendors.
- **Top Vendors** have a **lower mean profit margin (31.18%)** but a tighter distribution, suggesting more consistent profitability.
- **Low Vendors** have a **higher mean profit margin (41.57%)** but a wider, more spread-out distribution, indicating more variable profitability.
- The data suggests "low vendors" (likely referring to low sales volume) might achieve higher per-unit margins.

7. Profit Margin Disparity: Significant Difference

- There is a statistically significant difference in mean profit margins between top and low-performing vendors. Low-performing vendors exhibit a *higher* average profit margin.

Insights & Implications

- **High-performing vendors:** Provide best value due to superior profit-to-cost ratios and efficient logistics.
- **Pricing optimization:** Several products are priced too close to cost. **Selective price hikes** or **bundling** strategies are recommended.
- **Low-performing vendors:** Likely need **better promotion, repositioning, or renegotiation** on terms.
- **Inventory cleanup:** Vendors contributing to high unsold inventory should be **reviewed or replaced**.
- **Top 10 Vendors & Brands by Sales**

Recommendations

- Prioritize vendors with the highest net profit-to-cost ratio.
- High-performing vendors: Explore selective price increases or bundling.
- Low-performing vendors: Focus on marketing, competitive pricing, or better distribution.