

Grocery Pricing Strategies: An Analysis of Vendor Positioning and Market Dynamics*

Examining Sales Frequency, Price Distribution, and Average Price Levels Across Major Grocery Chains

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This paper examines grocery pricing strategies across major vendors to understand how they position themselves in a competitive market. By analyzing sales frequency, price distribution, and average price levels, we identify distinct approaches used by each vendor to attract customers. Our findings reveal that some vendors, like Metro, rely on frequent promotions to appeal to a broad customer base, while others, such as No Frills and Walmart, prioritize everyday low pricing to cater to budget-conscious shoppers. This analysis highlights the varied tactics grocery vendors use to target different consumer segments, providing insights into the competitive dynamics that shape grocery pricing and customer choices.

1 Introduction

In recent years, competitive pricing and promotional strategies among grocery vendors have created a rich landscape for data analysis. By examining grocery price data collected across multiple vendors, we can gain insights into various aspects of vendor pricing, such as frequency of sales, price distribution, and average price levels. This analysis focuses on several major grocery vendors, comparing their sales frequency, price ranges, and average prices to better understand their market positioning and strategies.

This study investigates the frequency of sales events, the distribution of product prices, and the average price by vendor, highlighting the distinct approaches taken by each vendor to attract and retain customers. Through visualizations such as bar plots and box plots, the analysis reveals trends in vendor pricing strategies, showcasing how some vendors prioritize frequent discounts, while others maintain a steady low-price approach. The findings suggest

*Code and data are available at: [<https://github.com/AndyYanxunJiang/grocery-price-analysis.git>].

that vendors like Metro employ high-frequency sales with a broad price range, while No Frills and Walmart focus on consistently low prices. These patterns reflect the varied strategies used by grocery vendors to appeal to different consumer segments.

2 Data

We use the statistical programming language R (R Core Team 2023) and several libraries including tidyverse (Wickham et al. 2019), DBI ([citeDBI?](#)), RSQLite ([citeRSQLite?](#)), and ggplot2 (Wickham 2016). The data was sourced from a project database created by Jacob Filipp, containing grocery price data collected across various vendors.

2.1 Overview

The key attributes of the data include:

Current Price: The price of each product at the time of data collection, which helps in understanding price distribution across vendors. **Sales Frequency:** The frequency of discounted prices, indicating how often each vendor holds sales or promotional events. **Vendor:** The specific grocery store or vendor from which the pricing data was collected, allowing for comparisons between different grocery chains. Using this dataset, we analyzed the pricing and promotional strategies of each vendor, focusing on three main dimensions: frequency of sales, price distribution, and average price by vendor.

Section 3 presents our findings on these aspects and highlights the distinct strategies employed by different vendors.

3 Results

Our results on the frequency of sales by vendor is illustrated in Figure 1, while Figure 2 shows the distribution of prices across vendors. Additionally, Figure 3 highlights the average price by vendor.

3.1 Frequency of Sales by Vendor

In Figure 1, Metro stands out with a noticeably higher frequency of sales compared to all other vendors. This suggests that Metro might be employing an aggressive pricing strategy, using frequent sales promotions to attract a large customer base. In contrast, Loblaws and Voila follow at a second tier, with sales frequencies approximately half that of Metro. This moderate level of sales activity indicates a competitive, but less aggressive, approach. No Frills, Save-On-Foods, and Walmart have similar and relatively low frequencies, at around half the

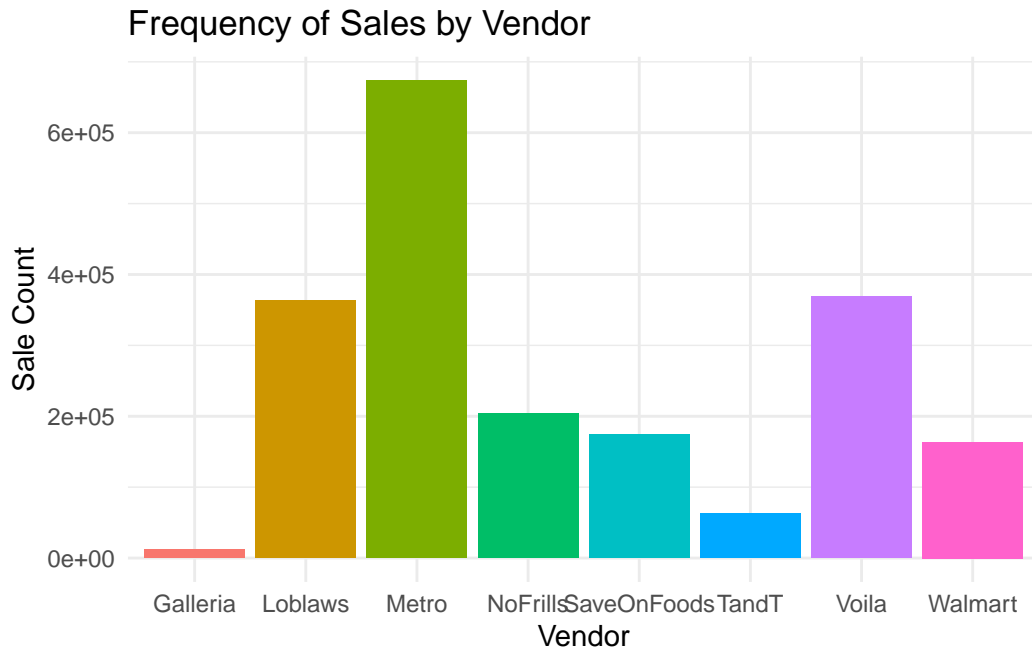


Figure 1: The Frequency of Sales by Vendor

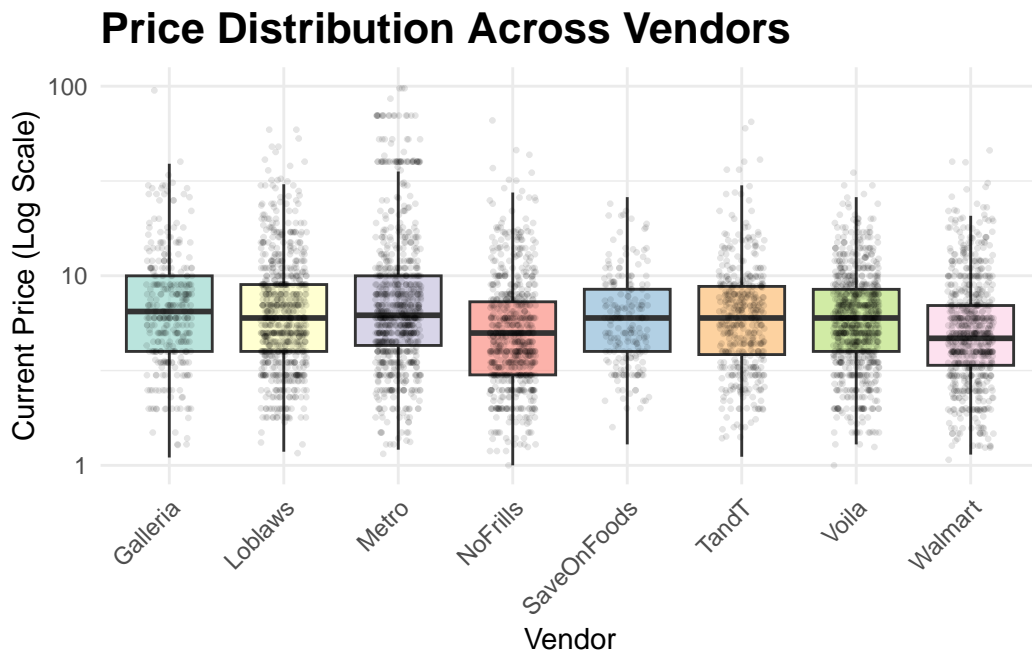


Figure 2: The Price Distribution Across Vendors

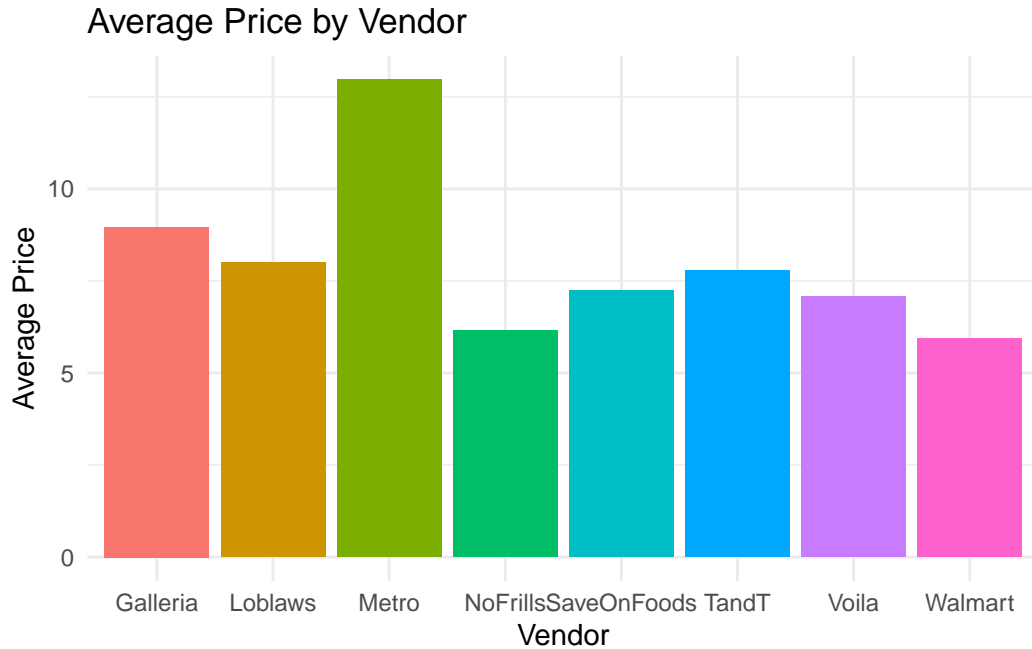


Figure 3: The Average Price by Vendor

level of Loblaws and Voila. This low frequency suggests that these vendors may focus less on frequent promotional events and more on maintaining stable pricing or lower base prices.

3.2 Price Distribution Across Vendors

Figure 2 reveals further distinctions in pricing strategy and positioning among the vendors. No Frills and Walmart show consistently lower price distributions, aligning with a budget-friendly image. This pattern suggests that these vendors aim to attract price-sensitive customers by offering lower-cost items, with minimal overlap into higher price ranges. Metro, on the other hand, displays a much wider price range, with a significant number of higher price points that are not seen in other vendors. This broad range suggests that Metro caters to a wide spectrum of customers, from budget-conscious shoppers to those willing to pay for premium products. Other vendors, such as Loblaws and Voila, show moderate price distributions, which are less spread out than Metro's but still cover a range that suggests a balanced approach rather than strictly budget or premium positioning.

3.3 Average Price by Vendor

Figure 3 aligns with the previous observations, highlighting Metro's position as the highest-priced vendor on average. This high average price, combined with Metro's wide distribution range, reinforces the notion that Metro offers a variety of products, including higher-priced or premium items. Galleria follows Metro with a relatively high average price, indicating a potential focus on specialty or premium goods. No Frills and Walmart emerge as the lowest-priced vendors on average, solidifying their positioning as budget-friendly options. The other vendors, such as Loblaws, Save-On-Foods, T&T, and Voila, occupy a middle ground, with average prices slightly above the lowest-priced vendors and below Galleria, suggesting a balanced pricing approach that caters to both cost-conscious and mid-range consumers.

4 Discussion

The results of this analysis reveal distinct pricing and promotional strategies among the grocery vendors, indicating how each vendor may be positioning itself within the market. Metro's high frequency of sales, shown in the sales frequency graph, suggests a competitive pricing strategy that relies heavily on promotional events to attract customers. This approach could be aimed at creating a perception of savings, encouraging frequent purchases, and catering to a broad range of customers who respond to discounts. The presence of frequent sales might also reflect Metro's intention to balance a diverse range of price points, as seen in the wide distribution of prices across products. This flexibility allows Metro to cater to both budget-conscious consumers and those willing to pay premium prices.

On the other hand, No Frills and Walmart demonstrate a consistent commitment to low prices, with lower price distributions and the lowest average prices among the vendors. Their relatively low frequency of sales suggests a focus on everyday low pricing rather than relying on promotions to drive customer traffic. This approach is likely attractive to price-sensitive shoppers who value predictably low prices over the fluctuations associated with frequent sales. The data implies that No Frills and Walmart have established themselves as budget-friendly options, strategically positioning themselves as reliable choices for consumers seeking affordability.

Galleria, with a high average price and fewer sales, appears to target a different segment. The relatively high prices suggest a focus on specialty or premium products, positioning Galleria as a niche or premium vendor within the market. This positioning may attract consumers who prioritize quality or unique offerings over low prices. The lack of high-frequency sales events implies a strategy that focuses less on discount-driven customer acquisition and more on brand or product differentiation, possibly appealing to a specific audience that values specialty goods.

The remaining vendors, including Loblaws, Save-On-Foods, T&T, and Voila, demonstrate a more balanced approach. These vendors have moderate frequencies of sales and average prices, positioning them between the budget-oriented and premium segments. This strategy

likely appeals to a broad consumer base that includes both cost-conscious shoppers and those willing to spend slightly more for a variety of options. By maintaining average prices that are neither the lowest nor the highest, these vendors may capture customers seeking value without the extremes of budget or premium positioning.

Overall, the data illustrates a competitive landscape where each vendor's pricing and promotional strategy plays a distinct role in shaping customer perception and loyalty. Metro's aggressive promotional tactics, combined with a wide range of prices, allow it to attract a diverse audience. Meanwhile, No Frills and Walmart stand out as dependable low-cost options, appealing to value-driven customers. Galleria's premium positioning caters to a niche market segment, and the remaining vendors capture a middle ground, appealing to customers looking for a balance of price and quality. These findings underscore the varied strategies used by grocery vendors to differentiate themselves and compete for different consumer segments in a competitive market.

References

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