

# Canadian Bread Price Variations Across Vendors\*

## An Observational Study on Pricing Trends and Data Limitations

Amy Jin      Diana Shen      Maggie Zhang      Claire Chang

November 14, 2024

This study analyzes the average price of bread across various vendors to understand pricing trends and highlight differences in consumer costs. By examining observational data, we found notable variations in bread prices between vendors, with some consistently offering higher or lower prices. These findings shed light on how vendor practices, product offerings, and possible external factors can impact bread affordability. Understanding these price variations is important for consumers seeking cost-effective options and for stakeholders aiming to address pricing disparities in everyday essentials.

## 1 Introduction

Bread is a staple food item across households, and understanding price variations among different vendors can provide insights into the accessibility and affordability of basic food products. This study aims to examine the average price of bread across various vendors in Canada to identify patterns and potential disparities in pricing. Using data on both overall average prices and per-unit prices (where available), we assess how bread pricing differs between vendors and highlight the factors that may contribute to these differences.

The primary estimand in this analysis is the average price of bread offered by each vendor. Additionally, for vendors that provide per-unit pricing, the analysis includes the average unit price, which helps standardize cost comparisons across varying product sizes and quantities. The focus on vendor-based pricing provides a granular view of how pricing might vary by store brand and supply chain factors.

Our results indicate a noticeable range in average bread prices across vendors. For instance, Walmart exhibits the highest average bread price among the surveyed vendors, while Voila

---

\*Code and data are available at: [https://github.com/aj3616/Canadian\\_Groceries\\_SQL/tree/main](https://github.com/aj3616/Canadian_Groceries_SQL/tree/main)

offers the lowest average price. However, the availability of unit prices is limited, with only Walmart providing sufficient data to calculate an average per-unit price. This lack of unit price data highlights a gap in the dataset, suggesting inconsistencies in reporting or data availability across different vendors.

Understanding these variations in bread prices matters for consumers and policymakers alike. For consumers, awareness of price disparities between vendors can guide more cost-effective shopping decisions. For policymakers, identifying patterns in food pricing could support initiatives aimed at improving food affordability and accessibility. By shedding light on vendor-based pricing differences, this study contributes to broader discussions on food cost dynamics and potential areas for consumer advocacy.

The remainder of this paper is structured as follows. Section 2 discusses the data used for this analysis, including key variables and sources, with particular attention to the quality metrics that affect polling accuracy. Section 3 contains the graphs and tables of our findings. Finally, our Section 3 discusses the implications of our findings and suggests directions for future research by addressing three critical aspects: correlation vs. causation, missing data, and sources of bias.

## 2 Data

### 2.1 Overview

We use the programming language R (R Core Team 2023) to analyze and visualize our data, which allows us to make clear graphs and summaries. Our data comes from a recent study on grocery prices in Canada (Filipp 2024), providing detailed information about bread prices at different stores. Following the approach in Telling Stories with Data (Alexander 2023), we look at price patterns by store and consider what they mean for shoppers and decision-makers.

### 2.2 Measurement

Some paragraphs about how we go from a phenomena in the world to an entry in the dataset.

## 3 Results

```
Rows: 8 Columns: 3
```

```
-- Column specification -----
```

```
Delimiter: ","
```

```
chr (1): vendor
```

```
dbl (2): overall_avg_price, overall_avg_unit_price
```

- i Use ``spec()`` to retrieve the full column specification for this data.
- i Specify the column types or set ``show_col_types = FALSE`` to quiet this message.

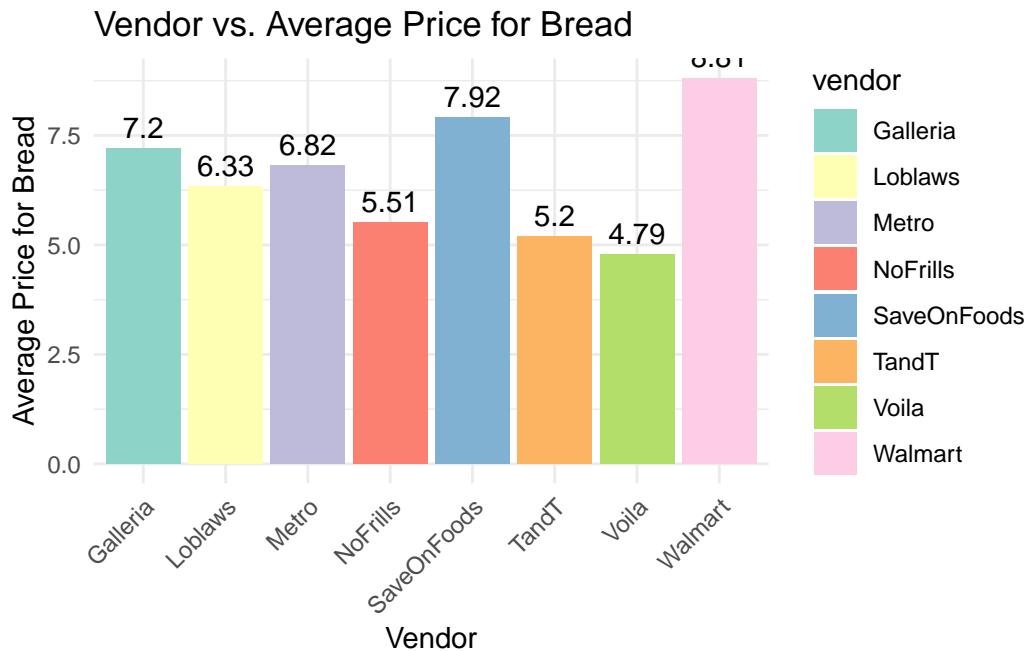


Figure 1: Overall Average Price

## 4 Discussion

### 4.1 First discussion point

If my paper were 10 pages, then should be be at least 2.5 pages. The discussion is a chance to show off what you know and what you learnt from all this.

### 4.2 Second discussion point

Please don't use these as sub-heading labels - change them to be what your point actually is.

### **4.3 Third discussion point**

### **4.4 Weaknesses and next steps**

Weaknesses and next steps should also be included.

## **Appendix**

### **A Additional data details**

### **B Model details**

#### **B.1 Posterior predictive check**

#### **B.2 Diagnostics**

## References

- Alexander, Rohan. 2023. *Telling Stories with Data*. Chapman; Hall/CRC. <https://tellingstorieswithdata.com/>.
- Filipp, Jacob. 2024. “Hammer.” <https://jacobfilipp.com/hammer/>.
- R Core Team. 2023. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.