BUAN 6337 PREDICTIVE ANALYTICS

GROUP PROJECT PRESENTATION

FOR CONAGRA FOODS

Conagra Brands: Driving Innovation in Food

- Conagra Brands is one of North America's leading packaged food companies and home to over 100 iconic brands, including Birds Eye®, Duncan Hines®, Healthy Choice®, Marie Callender's®, Reddi-wip®, and Slim Jim®.

- Conagra offers a diverse range of products across frozen, refrigerated, and shelf-stable categories, mainly focusing on sustainability, innovation, and aligning with consumer trends such as plant-based alternatives.

- Conagra actively invests in plant-based and meat substitute segments through brands like Gardein™.

- Conagra focuses on meeting rising consumer demand for healthy and ethical food choices by expanding its portfolio to align with consumer trends, such as plant-based diets and health-conscious eating.

Project Overview and Objectives

Market Overview

The global meat substitutes market was valued at $6.42 billion in 2023, with a projected CAGR of 12.25% through 2032. The U.S. market is expected to reach $4.23 billion by 2032, driven by increasing demand from vegans, flexitarians, and health-conscious consumers.

Project Objectives

- Understand Market Dynamics: Analyze performance metrics to assess current trends and identify opportunities for improvement.

- Enhance Product and Pricing Strategies: Optimize product offerings and pricing to balance competitiveness with profitability.

- Strengthen Distribution Networks: Expand distribution coverage in underpenetrated regions and optimize shelf space in high-performing stores.

- Leverage Data-Driven Insights: Utilize predictive analytics to forecast trends, assess promotional effectiveness, and guide strategic decision-making.
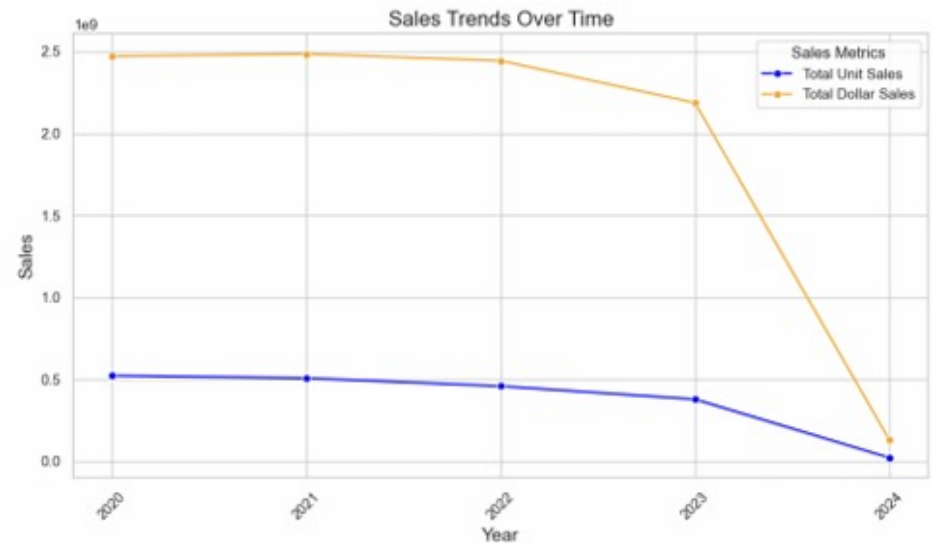
Key Insights from Data Exploration
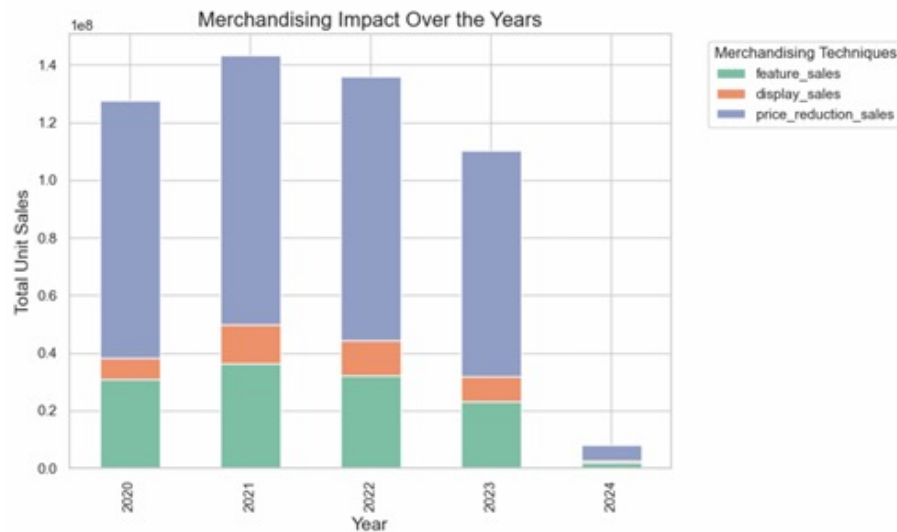
Sales Trends

Total unit and dollar sales have declined sharply from 2020 to 2024, with the steepest drop between 2023 and 2024.

Dollar sales fell from ~$2.5B in 2020 to less than $0.5B in 2024. Unit sales show a similar decline, indicating both volume and revenue losses.
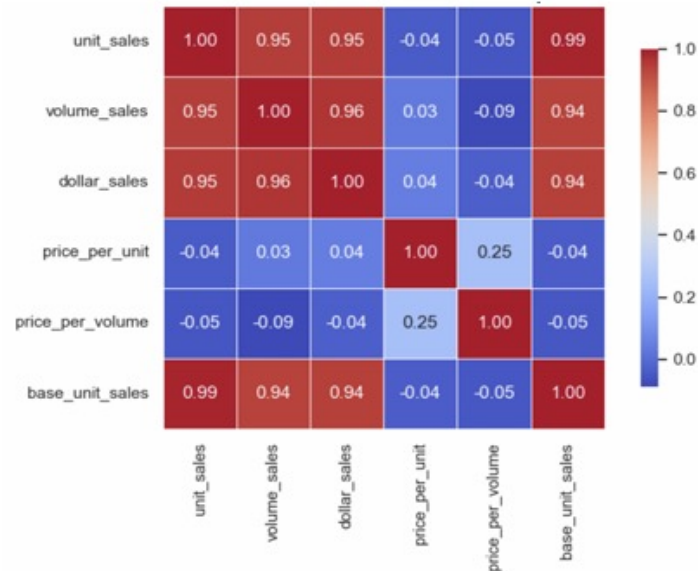
Merchandising Effectiveness

Price reductions consistently drove the highest sales impact across all years.

Merchandising effectiveness peaked in 2021 but saw a steady decline through 2024.

Key Insights from Data Exploration

Heatmap
Moderate negative correlation between Price per Unit and Unit Sales indicates price sensitivity among consumers. Incremental metrics show positive correlations with overall sales, highlighting the effectiveness of promotions.
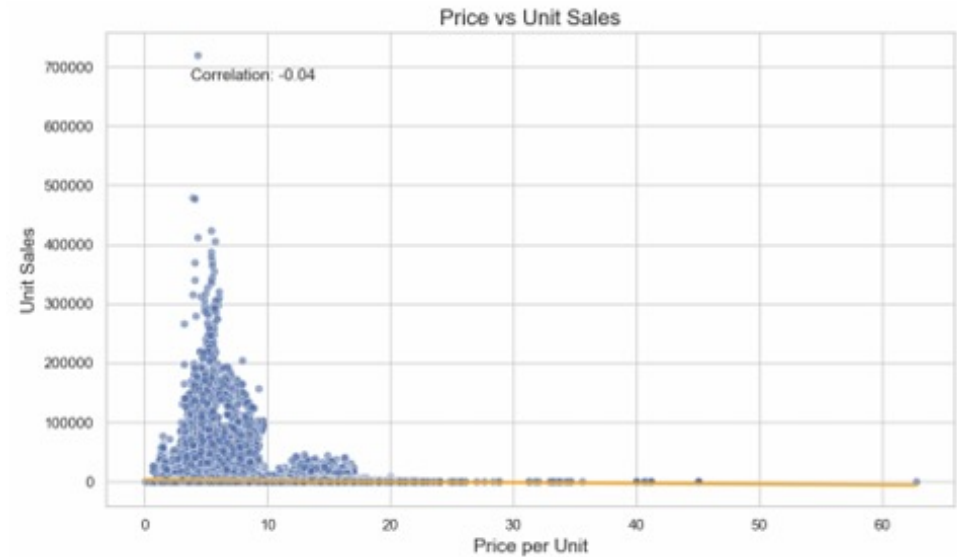
Scatterplot
Unit sales are concentrated in the lower price range (<$10), indicating significant price sensitivity. The correlation coefficient of -0.04 suggests a weak linear relationship between price and unit sales. There is volume drop-off i.e. unit sales drastically decline as prices exceed $10.

Effectiveness of Promotional Methods on Sales

Key Insights	Non-holiday promotions delivered a 9.05% sales lift, adding ~$1.42B in incremental revenue.	Holiday promotions were less effective, with minimal incremental sales.	Correlation analysis showed strong positive relationships between incremental metrics and total sales.
Methodologies	**Segmentation Analysis** Compared unit and dollar sales during holiday vs. non-holiday periods.	**Correlation Analysis** Identified relationships between incremental dollars and sales metrics.	**Promotional Performance Assessment** Examined the lift generated by promotional campaigns.

Effects of Price on Sales by Region

Key Insights	Price sensitivity observed: higher prices reduce unit sales.	High-performing regions achieved better sales due to superior distribution and optimized pricing.	Regression analysis (R^2 ~0.72) highlighted the strong influence of pricing and distribution on sales.
Methodologies	**EDA** Heatmaps and bar charts visualized trends in pricing and sales across regions.	**Correlation Analysis** Explored relationships between pricing metrics and unit/dollar sales.	**Regression Analysis** Quantified the impact of pricing, distribution, and incremental units on sales.

Relationship Between ACV Distribution and Dollar Sales

Key Insights

High ACV coverage regions achieved 20–30x higher dollar sales than low coverage areas.

Correlation (>0.7 in high-coverage areas) confirmed the strong link between ACV and sales.

Regression models predicted $915 sales increase per unit rise in ACV.

Methodologies

Descriptive Analysis
Summarized mean and median sales for high vs. low ACV coverage.

Correlation Analysis
Evaluated the relationship between ACV Weighted Distribution and dollar sales.

Regression Modeling
Created predictive models to quantify sales growth with ACV increases.

Strategic Recommendations

Optimize Promotions

Leverage successful non-holiday promotions by scaling effective tactics (price reductions, displays).

Redesign holiday campaigns to address challenges like market saturation and align with consumer behavior.

Refine Pricing Strategies

Maintain competitive pricing to balance volume growth and profitability.

Address price sensitivity by focusing on lower price ranges to boost unit sales.

Expand Distribution

Prioritize increasing ACV Weighted Distribution in high-performing regions and stores.

Focus on expanding shelf space for frozen and ground meat substitutes rather than overall store count.

Tailor Strategies for Regional Performance

Invest in underperforming areas by improving distribution efficiency and targeted campaigns.

Use regional insights to customize pricing and promotional strategies.

Conclusion
Vision for Conagra

- Expand Resources for Innovation: Allocate R&D funding for advanced plant-based product lines, emphasizing emerging ingredients and technologies.

- Adopt Advanced Analytics: Build predictive models to identify high-growth areas, optimize pricing, and assess the ROI of promotions.

- Strengthen Strategic Partnerships: Collaborate with retail partners to secure more shelf space and launch co-branded marketing efforts.

- Scale Globally: Explore global markets where plant-based demand is growing, leveraging existing strengths in distribution and marketing.