

Mini-Project Research Question 2

In 2022 alone, a \$136.8 billion was spent on pets in the U.S., reflecting the significant investment individuals and families make in caring for their animal companions. For instance, according to the ASPCA, the average annual expenditure on a cat is approximately \$634. This figure stands in stark contrast to the average annual spending per child in a middle-income, two-child, married-couple family, which amounts to approximately \$12,980, as reported by the Consumer Expenditures Survey in 2015. The increasing prevalence of online shopping has also extended to the pet products market, with a notable uptick in online purchases. Pet owners' propensity to shop online rose by almost 20%, from 72% in 2020 to 86% in 2021. This trend underscores the convenience and accessibility of online platforms for pet-related purchases, reflecting broader shifts in consumer shopping habits.

The exponential growth of ecommerce in the pet products sector is evidenced by the substantial amount spent on online purchases, which totaled an estimated \$16.28 billion in 2021. Projections suggest that this figure is set to soar, reaching \$60 billion by 2030. This surge in online spending underscores the importance of understanding the dynamics of online pet stores such as Chewy, the top 1 ecommerce pet store, which play pivotal roles in catering to the needs of pet owners in the digital age.

However, there is an overwhelming feeling for new pet owners to find good products, and nothing can beat the reviews from customers who have bought the products and data from the website when it comes to assess the products' quality. Therefore, this data project aims to analyze promotional pricing and customer reviews on Chewy website to inform optimal purchasing strategies for pet owners with following questions:

- What are the trends in promotional pricing for pet products on Chewy over multiple days?
- How do promotional pricing strategies vary across different product categories (e.g., food, toys, accessories) on Chewy?
- Can insights from promotional pricing data be used to develop a recommendation system to guide pet owners in making cost-effective purchasing decisions on Chewy?
- What factors impact the customers' reviews?

Web scraping techniques will be employed to extract data from the Chewy website, focusing specifically on products related to cats over multiple days. Data collected will include product details, prices, promotions, customer reviews, and ratings. Analysis will involve identifying trends in promotional pricing, examining variations in pricing strategies across different product categories, and exploring correlations between promotional pricing and customer reviews.

This data project aims to provide valuable insights into promotional pricing and customer reviews on the Chewy website, with a specific focus on products related to cats. By analyzing trends and variations in pricing strategies and examining factors influencing customer reviews through feature analysis and regression models, the project seeks to empower pet owners with informed purchasing strategies and recommendations. Ultimately, the findings of this research endeavor will contribute to enhancing the shopping experience and satisfaction of pet owners navigating the online pet products market.