

# PetFood Brand Analysis: Understanding Consumer Preferences by Life Stage and Breed Size

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**Abstract:** *The pet food industry has changed greatly in recent years due to changing consumer preferences and better awareness of pet nutrition. Studies show that pet owners are now more interested in pet food products that meet the specific needs of their pets based on life stage and breed size. This study examines consumer purchasing behaviour in the pet food market by analysing pet food brand preferences in relation to pet life stages and breed sizes using customer order data. The research aims to identify popular pet food brands across different life stages and breed categories, examine factors influencing brand selection, and provide insights to support product development and marketing strategies. The study utilizes a structured dataset containing customer order information, including pet life stage, breed size, food preferences, health issues, and order details. The primary data source for this research is a structured questionnaire dataset containing customer order information. Statistical Software tool Python is used for descriptive, inferential, and predictive analyses and Matplotlib for graphical representation of trends and patterns. A stratified sampling technique were applied to ensure adequate representation across pet life stages. Data pre-processing techniques were applied to ensure quality and consistency, followed by segmentation analysis using clustering and latent class methods to identify distinct customer groups. Predictive modelling techniques, including logistic regression, random forest, and neural networks, were employed to forecast brand preferences based on customer and pet attributes. The findings reveal significant variation in nutritional needs and purchasing behaviour across pet life stages and breed sizes. Results indicate a high initial adoption of wet food that stabilizes over time, strong consumer preference for specific dry food brands. Puppy owners demonstrated the highest online activity, while owners of senior pets spent more time researching products online. Ingredient quality, brand reputation, and price sensitivity emerged as key factors influencing purchasing decisions. The study analyses the data and give better understand how these factors influence pet owners' choices and their preference for specific pet food brands as well the finding will help the pet food industry for their decision making with improving the business performance.*

**Keywords:** Customer Behaviour, Pet Food, Band Analysis, Consumer Preference

