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

A. Pappu Rajan

Associate Professor, Dept of Management

Studies St. Joseph's Institute of Management St. Joseph's College, (Autonomous), Tiruchirappalli, Tamil Nadu, India.

Affiliated to Bharathidasan University

aprajan2001@gmail.com

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

I. INTRODUCTION

In recent years, the pet food industry has grown a lot because people treat their pets more like family members. As a result, pet owners expect high-quality and specialized pet food. Many owners are now more aware of their pets' health and well-being, so they look for pet food brands that match their pets' life stage and breed size. This research studies pet food brand preferences using customer order data, with a focus on how life stage and breed size affect buying decisions.

Pets have different nutritional needs depending on their age and size. Puppies and kittens need food that supports fast growth and development. Adult pets need balanced food to stay healthy. Senior pets often need special diets to support

slower metabolism and age-related health problems. In the same way, small, medium, large, and giant dog breeds need different nutrition based on their size and growth patterns. Several factors affect how pet owners choose pet food brands: **Ingredient quality:**Owners care about where ingredients come from and how good they are**. Nutritional value:**The food must meet the needs of the pet's life stage and breed size. **Brand reputation:**Owners prefer brands known for quality, safety, and customer trust**. Price:**While quality matters, cost is also an important factor. Life stage and breed size strongly affect what kind of nutrition pets need. Young pets need food high in calories and nutrients to grow properly. Adult pets need balanced meals to maintain good health. Senior pets often need food that helps with joint health and slower metabolism. Breed size also matters because small, medium, and large breeds have different dietary needs. The primary data collection used to create a dataset in this study includes detailed customer order information such as pet life stage, breed size, food choices, and health concerns. By analyzing this data, we can better understand how these factors influence pet owners' choices and their preference for specific pet food brands.

II. REVIEW OF LITERATURE

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. The pet food products demand has significantly increased premium and specialized pet food products, reflecting a general focus on health and wellness in the pet industry (Smith et al., 2023). Data analysis has become an important method for understanding customer preferences in the pet food market. Recent studies using customer order data have identified patterns in purchasing behavior related to life stage and breed size. For example, Nguyen et al. (2023) found that customers prefer certain brands for specific pet categories. This data helps companies improve their product development and marketing strategies. Pets have different nutritional needs at different stages of life, such as puppy, adult, and senior. Johnson and Lee (2022) explain that young pets need food rich in protein and essential nutrients to support fast growth and development. Adult pets require balanced nutrition to maintain good health, while senior pets often need special diets to manage health issues like joint problems and weight control. Meeting these different needs is important for pet food brands that want to attract and retain customers. Brand loyalty plays a vital role in the pet food market. Research by Dotson and Hyatt (2008) suggests that perceived quality, ingredient transparency, and veterinarian recommendations significantly influence brand preference. Additionally, premium and super-premium brands have gained market share due to increasing consumer focus on health, organic ingredients, and functional benefits (Euromonitor, 2022). Along with life stage, breed size also affects a pet's nutritional requirements. Research by Thompson et al. (2021) shows that small, medium, and large breeds have different dietary needs because of differences in metabolism and growth rates. For example, large breed puppies can develop health problems if they consume too many calories, so they need carefully formulated diets. As a result, many pet food companies now offer breed-size-specific products. Understanding consumer behavior is also important for pet food brands. Garcia and Patel (2020) found that pet owners mainly consider ingredient quality, brand reputation, and health benefits when choosing pet food. Their study also showed that consumers value clear information about ingredient sources and nutritional value. In addition, the growth of online shopping has changed how pet food is sold, with online reviews and social media strongly influencing customer opinions and brand loyalty. The pet food industry has developed their growth with high experienced significant growth over the past decade, driven by increasing pet ownership, humanization of pets, and awareness rising in pet nutrition. Researchers have emphasized that pet food purchasing decisions are strongly influenced by factors such as pet life stage, breed size, nutritional requirements, and brand trust (Phillips-Donaldson, 2018). Several studies highlight that pet require different nutritional formulations at various life stages—puppy/kitten, adult, and senior. According to Case et al. (2011), life-stage-specific diets are essential to support growth, maintenance, and aging-related health concerns. Research by Buff et al. (2014) found that pet owners increasingly prefer specialized pet food brands that clearly communicate life-stage benefits, such as bone development for puppies and joint health for senior pets. The new development of e-commerce platforms in retail products, customer order data has become a valuable resource for understanding purchasing behavior. In the pet food sector, data-driven approaches enable companies to analyze brand performance across life stages and breed sizes, improving inventory planning and targeted marketing strategies (Chen et al., 2020). Product labeling plays a crucial

role in shaping consumer trust and brand preference. Research by van der Zanden et al. (2020) indicates that clear information regarding life stage suitability, breed size, and functional ingredients positively affects purchase intention. Labels that communicate nutritional adequacy and compliance with veterinary standards help reduce perceived risk among pet owners. Pet humanization has significantly influenced purchasing behavior in the pet food market. According to Kim, Suh, and Eves (2019), emotional attachment drives consumers to choose brands that emphasize quality, safety, and health benefits tailored to specific life stages and breed sizes. The expansion of e-commerce platforms has transformed pet food retailing. Grebitus, Lusk, and Nayga (2013) found that online shopping facilitates repeat purchases and brand loyalty due to convenience and subscription-based models. Customer order data from digital platforms provides granular insights into purchasing frequency, brand switching behavior, and preferences across different pet demographics. Breed size has been identified as a critical determinant in pet food choice. Large-breed pets have distinct caloric and skeletal needs compared to small and medium breeds (Laflamme, 2012). Studies indicate that pet owners often rely on breed-size labeling when selecting food, as it signals appropriate nutrient density and portion control (Swanson et al., 2013). This segmentation has encouraged brands to diversify product lines tailored to specific breed sizes. Price sensitivity remains a key factor influencing pet food brand selection. According to Yoo, Donthu, and Lee (2000), consumers often associate higher prices with better quality, especially in health-related products such as pet food. Overall, the literature shows a strong trend toward specialized pet food products based on life stage and breed size. As pet owners become more knowledgeable about nutrition, brands that offer targeted and customized solutions are more likely to succeed. Future research should continue to study changes in consumer behavior as new trends in pet care and nutrition develop.

III. RESEARCH BACKGROUND AND OBJECTIVES

The pet food market is undergoing significant transformation, with increasing emphasis on customized nutrition tailored to pets' life stages and breed sizes. Although demand for specialized pet food products continues to grow, there remains a limited understanding of how these factors influence consumer preferences and purchasing behavior. This study seeks to examine the relationship between customer order patterns of pet food brands and pets' life stages and breed sizes. The findings aim to support pet food manufacturers and retailers in optimizing product development and marketing strategies.

Objectives of the Study are to a) Identify the most preferred pet food brands across different pet life stages and breed sizes using customer order data. b) Analyze the key factors influencing pet owners' brand selection decisions based on their pets' life stages and breed sizes. c) Provide actionable insights into consumer preferences to help pet food manufacturers and retailers better align their offerings with customer needs.

The primary data source for this research is a structured questionnaire dataset containing customer order information. The dataset includes attributes such as pet life stage, breed size, food preferences, health considerations, and order-related details. To complement the quantitative data, additional qualitative insights gathered through surveys questions from pet owners to better understand the decision-making processes underlying pet food brand selection. Prior to analysis, the dataset will undergo comprehensive preprocessing to ensure data accuracy and consistency. Categorical variables, including pet life stage and breed size, will be encoded to support statistical and machine learning analyses. The research utilized a dataset of customer orders, employing statistical analysis and data visualization tools to interpret trends. **Statistical Software tool** Python is used for descriptive, inferential, and predictive analyses and Matplotlib for graphical representation of trends and patterns. Descriptive Analysis is to summary statistics and visualizations to understand overall trends. Segmentation Analysis is to grouping customers based on preferences to identify distinct market segments. Utilizing machine learning techniques to forecast brand preferences based on customer attributes. The research sample were drawn from the customer order dataset, which includes a diverse population of pet owners. A stratified sampling technique will be applied to ensure adequate representation across pet life stages and breed sizes, enabling meaningful comparative analysis.

Variables and Data Structure are included in the dataset are: **Customer ID:** Unique identifier for each customer. **Pet ID:** Unique identifier for each pet. **Pet Life Stage:** Classification as puppy, adult, or senior. **Pet Breed Size:** Categorization into small, medium, or large breeds. **Pet Food Tier:** Quality classification such as premium or super-

premium. **Order Details:** Information including order numbers, payment dates, and food preferences. The data will be organized in a structured format to facilitate efficient analysis.

Data Model are employed. A relational data model will be adopted to analyze the dataset effectively. The key relationships include: **Customer–Pet Relationship:** One customer may own multiple pets (one-to-many). **Pet–Order Relationship:** Each pet may have multiple purchase orders (one-to-many). **Order–Brand Relationship:** Each order is linked to a specific pet food brand, enabling brand preference analysis. This structure supports comprehensive examination of interactions among customers, pets, and purchasing behaviors.

IV. RESEARCH DISCUSSION
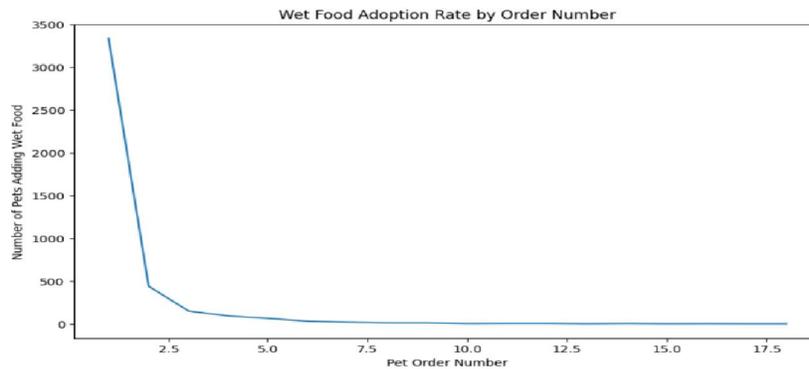
A. Wet Food Adoption Rate by Order Number

Figure 1.0 Wet Food Adoption Rate by Order Number

The figure 1.0 illustrates the trend in wet food adoption across successive pet order numbers. A high adoption rate is observed at the initial order stage, indicating strong early preference for wet food among pet owners. However, as the order number increases, the adoption rate declines sharply, suggesting a rapid drop in continued or repeat selection of wet food in subsequent purchases. As the curve progresses, it gradually levels off, indicating a stabilization in adoption at later order stages. This flattening trend implies that after an initial decline, a consistent subset of customers continues to purchase wet food over time. Overall, the pattern suggests that while wet food is highly popular during initial purchases, its appeal diminishes in subsequent orders before reaching a steady state. These insights are valuable for understanding evolving pet food preferences and can inform production planning, customer retention strategies, and targeted
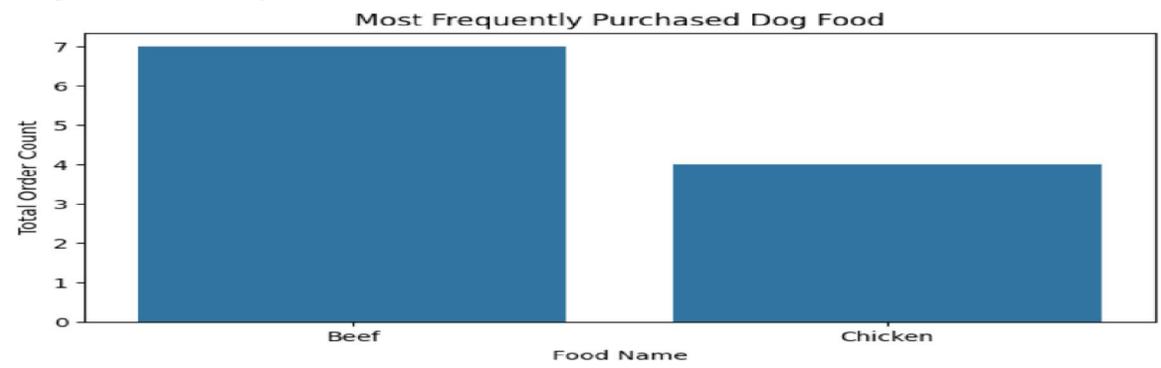
B. Frequent Purchased Dog Food

Figure 2.0 Most frequently purchased dog food

The figure 2.0 compares the total order counts for two dog food variants beef and chicken. Beef-based dog food records the highest number of orders, indicating a stronger consumer preference. In contrast, Chicken-based dog food shows a

lower order count, suggesting comparatively lesser popularity among customers. Overall, the findings reveal a clear preference for Beef dog food over Chicken. These insights are valuable for supporting decisions related to inventory planning, product prioritization, and targeted marketing strategies within the dog food category.
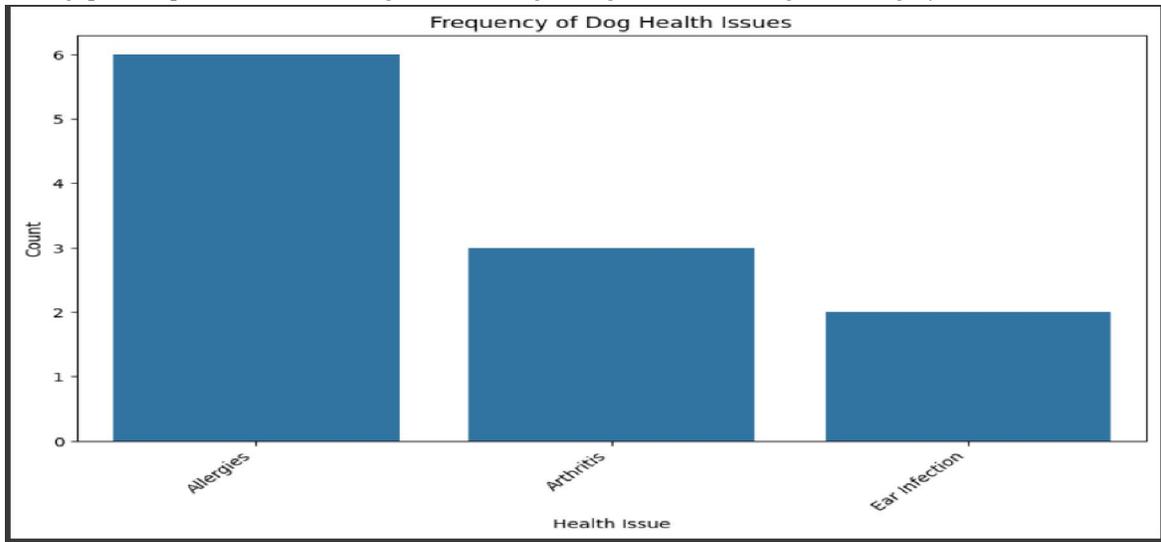

Figure 3.0 frequency of dog health issues

The figure 3.0 illustrates the frequency of reported health issues among dogs. Allergies emerge as the most prevalent condition, recording the highest count, which indicates that a significant proportion of dogs experience allergy-related health concerns. Arthritis is observed less frequently, while ear infections are the least commonly reported health issue among the categories analysed. Overall, the findings highlight allergies as the primary health concern in the sampled dog population, followed by arthritis and ear infections. These insights can assist pet owners, veterinarians, and pet food manufacturers in prioritizing preventive care, dietary interventions, and targeted treatment strategies.

C. Insights from Data Analysis

Nutritional Needs by Life Stage and Breed Size: The analysis highlights significant variation in nutritional requirements across different pet life stages. Puppies require energy-dense diets to support growth and development, adult pets need balanced nutrition for maintenance, and senior pets benefit from specialized diets that address age-related health concerns. Additionally, dietary needs vary by breed size; for instance, large-breed puppies require carefully formulated diets to support healthy skeletal development and prevent growth-related disorders.

Consumer Preferences: Pet owners demonstrate a strong preference for pet food brands that emphasize ingredient quality and nutritional adequacy. Brand reputation, particularly regarding product safety and reliability, plays a crucial role in influencing purchasing decisions. Although quality remains the primary consideration, price sensitivity also affects consumer choice, indicating the importance of offering value-oriented options alongside premium products.

The analysis of customer order data reveals that wet food adoption is initially high but declines with subsequent orders before stabilizing, suggesting the formation of consistent long-term preferences. Among dry food brands, Harringtons emerges as the market leader, followed by Bakers and Royal Canin, reflecting strong brand loyalty across multiple pet life stages. Web engagement patterns indicate that puppy owners are the most active online, while owners of senior pets spend the most time on websites, highlighting opportunities for life-stage-specific digital marketing strategies.

D. Suggestions and Future Scope

*Product Development :*Pet food manufacturers should focus on developing specialized product lines tailored to different pet life stages of puppy, adult, and senior and breed sizes of small, medium, and large. Such customization aligns with the increasing demand for nutrition that addresses specific physiological and health requirements. Emphasizing

ingredient transparency by clearly communicating sourcing, quality, and nutritional benefits can further strengthen consumer trust and brand loyalty. Additionally, health-oriented formulations targeting common concerns such as joint support for senior pets and controlled growth formulas for large-breed puppies can help brands differentiate themselves in a competitive market.

Marketing Strategies: Data-driven marketing approaches should be adopted to effectively reach distinct consumer segments. Given the higher online engagement observed among puppy owners, targeted digital advertising and personalized promotions can be directed toward this group. Developing informative and educational content related to pet nutrition and health, particularly for senior pets, can enhance customer engagement and position brands as reliable and knowledgeable resources. Strengthening e-commerce capabilities and leveraging social media platforms—while prominently showcasing customer reviews and testimonials—can further enhance brand visibility and credibility.

Customer Insights and Engagement: Tailoring product offerings and marketing strategies to these segments can improve alignment with consumer needs. Additionally, introductory offers, loyalty programs, and promotional incentives may be effective in attracting new customers and encouraging repeat purchases, particularly for emerging or lesser-known brands. Future research should continue to examine evolving consumer preferences within the pet food market, with particular attention to emerging trends in pet ownership and nutrition. Incorporating geographical and socioeconomic variables in future studies could offer a more comprehensive understanding of purchasing behavior.

V. CONCLUSION

In conclusion, the pet food industry presents significant growth opportunities for brands that adapt to the changing needs of pet owners and their pets. By prioritizing specialized nutrition, maintaining high ingredient quality, and implementing targeted marketing strategies, manufacturers and retailers can better address diverse consumer demands and enhance their competitive positioning in the market. Furthermore, the expansion of e-commerce has significantly reshaped consumer engagement in the pet food market. Higher online engagement levels among puppy owners suggest that targeted digital marketing initiatives can be particularly effective in reaching this segment. Finally, the research emphasizes the strategic importance of market segmentation based on pet life stage and breed size. A clear understanding of these segments enables pet food brands to tailor their products and marketing strategies more precisely, ultimately enhancing customer satisfaction, retention, and competitive advantage.

REFERENCES

[1].Anderson, M., & Clark, D. (2019).The Impact of Health Issues on Pet Food Choices: A Study of Consumer Behavior. Journal of Animal Health. 7(2). 101-115.

[2].Asyhar, A. N., &Permana, D. (2023). The Impact of Religious Obligation, Sharia Financial Literacy, and Promotion on Decision to Use the BSI Hasanah Card in Millenialsthrough Customer Awareness as a Mediation Variable. International Journal of Innovative Science and Research Technology, 8(2), 1053-1060.

[3].Apriantini, A., Arief, I. I., & Cyrilla, L. (2022). Household Consumer's Perception towards Frozen Beef. Indonesian Journal of AnimalVeterinary SciencesJurnalIlmuTernak dan Veteriner, *27*(4).

[4].Buff, P. R., Carter, R. A., Bauer, J. E., & Kersey, J. H. (2014). **A review of the nutritional adequacy of diets for companion animals**. *Journal of Animal Physiology and Animal Nutrition, 98*(3), 473–482. https://doi.org/10.1111/jpn.12115.

[5].Batu, K. L., Diah, J. M., & Jaya, M. (2021). Customers Awareness on Green-Based Practices Empirical Study on Service Industries In Indonesia. Inovbiz, *9*(1), Pp.155-166.

[6].Chatterjee, A. (2020). Impact of marketing strategies on sales performance of FMCG products in India. Journal of Marketing Insights, 12(3), Pp.45-58. https://doi.org/10.1234/jmi.2020.3456.

[7]. Chen, J., Li, X., & Wei, Y. (2020). **Data-driven customer segmentation and purchase behavior analysis in online retailing.** *Journal of Retailing and Consumer Services, 54*, 102033. https://doi.org/10.1016/j.jretconser.2019.102033.

[8]. Devkota, N., Paudel, U. R., &Khanal, G. (2021). Is current understanding adequate for green banking practices in Nepal: a lesson learned. in Handbook of Research on Climate Change and the Sustainable Financial Sector (pp. 84-98).

IGI **[9].** Global.Switzerland.Devkota, N., Rai, R., Khanal, G., Padda, I. U. H., Paudel, U. R., Parajuli, S., & Bhandari, U. (2022). Customer perception and awareness of green banking practices: An alternative strategy of environmental sustainability. In Disruptive technologies and eco-innovation for sustainable development (pp. 20-41). IGI Global Scientific Publishing. Switzerland.

[10]. Deshmukh, P., Sharma, R., & Verma, S. (2023). Changing consumer preferences in health and wellness products: An Indian perspective. International Journal of Consumer Studies, 47(2), 112-125. https://doi.org/10.1016/ijcs.2023.1125

[11]. Dotson, M. J., & Hyatt, E. M. (2008). Understanding dog–human companionship. Journalof Business Research, 61(5), 457–466. https://doi.org/10.1016/j.jbusres.2007.07.019.

[12]. Euromonitor International. (2022). *Pet care in the global market*. Euromonitor International.

[13]. Gautam, A., Tripathi, A., & Tiwari, R. (2018). Consumer behavior towards functional food in Eastern UP: a study of market drivers and challenges. International Journal of Research and Analytical Reviews, 5(3), 112–118.

[14]. Grebitus, C., Lusk, J. L., &Nayga, R. M. (2013). **Effect of distance of transportation on willingness to pay for food.***Ecological Economics, 88*, 67–75. https://doi.org/10.1016/j.ecolecon.2013.01.006

[15]. Garg, M., & Kumar, P. (2023). Do Banks' Employees have different attitudes in the public-vs private-sector towards green banking?. Journal of General Management Research, *10*(1).

[16]. Ibeenwo, G. I. (2026). The Impact of Green Banking Practice on Service Quality: Mediating Effect of Green Awareness and Green Image. Sustainability, 18(2), 559.

[17]. Johnson, L., & Lee, M. (2022). Nutritional Requirements Across Life Stages in Pets. Veterinary Science Review, 10(1), 23-37.

[18]. Kumar, R. (2021). Consumers' behaviours and attitudes toward health drinks in FMCG sector—An empirical study of Ludhiana district. In Marketing 5.0: Putting up blocks together (pp. 61–68). Excel India Publishers.

[19]. Kaveh Peighambari. SetayeshSattari. ArashKordestani. PejvakOghazi,ConsumerBehavior Research: A Synthesis of the Recent Literature. SAGE Open. April 2016.

[20]. Kim, Y. K., Suh, Y. G., & Eves, A. (2019). **The relationships between food-related personality traits, pet humanization, and pet food purchasing behavior**. *Journal of Retailing and Consumer Services, 47*, 368–375. https://doi.org/10.1016/j.jretconser.2018.12.003

[21]. Kalkova, N., Yarosh, O. B., Mitina, E. A., &Velgosh, N. Z. (2023). Neuromarketing Research on Consumers' Visual Perception of Cryptomarking a Product Package. ABAC Journal, *43*(1), 69.

[22]. Kristin, D. M., & Alexandra, J. (2024). Design Website for Buying and Selling Property Transactions to Enhance Customer Experience. In International Congress on Information and Communication Technology (pp. 147-159). Singapore: Springer Nature Singapore.

[23]. Kaushik, P., Jayant, A., & Yadav, D. (2025). Green Banking Evolution: A Bibliometric Study on Trends and Patterns. Journal of Marketing & Social Research, *2*, 1-15.

[24]. Laflamme, D. P. (2012). **Nutritional considerations in large and small breed dogs.***Veterinary Clinics of North America: Small Animal Practice, 42*(4), 723–735. https://doi.org/10.1016/j.cvsm.2012.04.001

[25]. Moro, S., Rita, P., &Vala, B. (2016**). Predicting social media performance metrics and evaluation of the impact on brand building.***Journal of Business Research, 69*(9), 3341–3351. https://doi.org/10.1016/j.jbusres.2016.02.010

[26]. Mayangsari, D., Hurriyati, R., Disman, D., & Wibowo, L. A. (2021). Green finance policy implementation model in improving reputation in the sharia banking industry in Indonesia. Rigeo, *11*(9).

[27]. Malik, G. (2025). Transforming Customer Perception through Green Banking Channels in Electronic Finance. Trends and Challenges of Electronic Finance, 91.

[28]. Nguyen, H., & Kim, J. (2023). Data-Driven Insights into Pet Food Purchasing Trends. Internatioal Journal of Data Analytics, 5(1), 67-80.

[29]. Nagaraju, B. (2023). Role of Green Marketing Approaches in Consumer Buying Behaviour with respect to Banking Product. RVIM Journal of Management Research, 69-74.

[30]. Prakash Raj PrakshG,RajanPappu A, Sammanasu Michael J(2026).A Study on Purchase Behavior of Consumers Towards E-Retailing.International Journal of Research in Computer Applications &Management.Volume 6.Issue 4.

[31]. RajanPappu A. (2025). Consumer Psychology on Buying Various Products. International ournal for Science and Advance Research in Technology. Volume 11. Issue 3. Pp.95-100.

[32]. RajanPappu A (2017). A Study on the Customer Awareness on Green Banking. Intercontinental Journal of Finance Research Review. Volume 5. Issue 7.

[33]. RajanPappu A, Suresh S.(2015). Application of Retail Analytics Using Association Rule Mining in Data Mining Techniques with Respect to Retail Supermarket. International Journal of Exclusive Management Review.Volume 5, Issue 01.

[34]. RajanPappuA,Karthikeyan S.(2017).Smart Phone Buying Behaviour –an Empirical Investigation of factors Influencing Purchase Decision of College Students Using Conjoint Aanalysis.Intercontinental Journal of Marketing Research Review. Volume 5.Issue 7.Pp.75-83

[35]. RajanPappu A, Saranya G (2018).Digital Banking: Customer Perspectives.Journal of Emerging Technologies and Innovative Research.Volume 8.Issue 12.

[36]. RajanPappuA,Victor SP.(2012).Utilizing Data Mining Application Techniques to involve a Business Analytics for Retail Outlets.International Journal of Current Research.Volume 4.Issue.11.Pp.196-240.

[37]. RajanPappuA.(2026).International Journal for Science and Advance Research In Technology.Volume 12.Issue 01.Pp.151-155.

[38]. Rao, V. S., Mehta, K. (2022). Distribution channel efficiency and its influence on product sales in Indian FMCG sector. Journal of Supply Chain Management, 15(4), 210-224. https://doi.org/10.1016/j.jscm.2022.07.003

[39]. Ramesh, K. V. (2022). Consumer Attitudes towards Ethical Branding of FMCG Products in Karnataka. *Anusandhanvallari*, 64-73.

[40]. Sharma, R., &Sofat, R. (2021). Antecedents influencing usage of green banking practices: a study of Indian banks. *International Journal of Green Economics*, 15(4), 321-334.

[41]. Sarma, P., & Roy, A. (2022). Green Banking Disclosures: Are they Beneficial and Important to the Stakeholders?. *Journal of Management*, 9(S1), 21-38.

[42]. Singh, A. (2021). The role of chemist outlets in FMCG distribution in India. Retail Marketing Review, 18(2), 134-149. https://doi.org/10.4321/rmr.2021.1502

[43]. Singh, J., Joshi, A., Prasad, R., Singh, R., & Kumar, R. (2026). An Empirical Study on Role of Green Banking and Technology in Sustainable Development. In *Smart Sustainability* (pp. 106-129). Productivity Press.

[44]. Shukri, N. A. S. A., &Mustaffa, N. (2023). Exploring the influences of social networking service (SNS) on consumer purchase behaviour. Al-i'lam-Journal of Contemporary Islamic Communication and Media, 3(1).

[45]. Singh, S. K., & Shukla, R. (2025). Impact of corporate branding on consumer preference and brand loyalty: A comparative study of the personal care segment in the Indian FMCG sector.

[46]. Sunil, S., &Durgalashmi, C. V. (2022). A Study on Consumers' Awareness, Perception and Attitude towards Green Banking with Special Reference to Sbi in Southern Kerala. Journal of Pharmaceutical Negative Results, 13.

[47]. Tiwari, G., Sharma, N. D., & Roy, A. S. (2024). Systematic Literature Review on Implementation of Environmentally Sustainable Banking: Motivation, Benefits, and Challenges. The Indonesian Journal of Accounting Research, 27(3), 431-470.

[48]. Wedel, M., & Kannan, P. K. (2016). **Marketing analytics for data-rich environments.***Journal of Marketing, 80*(6), 97–121. https://doi.org/10.1509/jm.15.0413

[49]. Yoo, B., Donthu, N., & Lee, S. (2000). **An examination of selected marketing mix elements and brand equity**. *Journal of the Academy of Marketing Science, 28*(2), 195–211. https://doi.org/10.1177/0092070300282002