

Original Article

Influence of Neuro-Psychological Marketing Strategies on Food Product Sales and Buying Patterns in Athletes and the Public

Sriharsha D.J.¹, Shweatha H.E.^{2*}

^{1,2}Department of Nutrition and Dietetics, JSS Academy of Higher Education and Research, Mysore, Karnataka, India.

*shweatha.he@jssuni.edu.in

Received: 05 January 2025; Revised: 07 February 2025; Accepted: 14 March 2025; Published: 31 March 2025

Abstract - Marketers with the understanding that human consciousness, feelings, thoughts, and actions are the result of neural activity in the brain have brought in a revolution in the way products are marketed and sold. Neuromarketing, or consumer neuroscience as it is called, helps in understanding consumer behaviour and decision-making and even helps manipulate them. In this context, it becomes imperative to study the effect of neuromarketing on food product sales and buying patterns in the current context of large-scale and heavy dependence on processed and packaged foods. Objective: With this background, the current investigation was envisioned to assess the impact of cognitive function, emotions, and marketing on food purchases among both athletes and the public. Methodology: A point-of-purchase survey among public and sports athletes was conducted in different Kodagu districts of Karnataka, a state with a population exposed to a wide range of food varieties and varied nature of food preferences. Independent variables composed of attitudes and subjective norms; perceived cognitive process and diet-health concern (5-point semantic differential); and individual factors influence food choices (12-item index) questionnaires were designed. The obtained data was analyzed using descriptive statistics and mean analysis. Results: The influence of various marketing strategies varied the decision-making process among both demographics. Most percentages of individuals had the knowledge and health literacy that influenced their food choices. The results indicated that nutritional content was the most influencing factor among the public's purchasing decisions (49.2%), followed by brand reputation (21.8%), price point (18.8%), and packaging design (10.2%). Attitudes, subjective norms, and cognitive functioning differed significantly by age, gender, socio-economic status and profession. Subjective norms (quality, brand) and diet-health concerns were significant predictors of intention to buy food products in athletes, while the objective norms (taste, cost, availability) were significant among non-athletes. Conclusions: The research highlights the multifaceted nature of consumer decision-making while consumers purchase food products from the public and athletes, and future research could further explore the interactions between various factors and their relative importance in different consumer segments.

Keywords - Neuromarketing, Consumer behaviour, Athletes, Public.

1. Introduction

The food industry is one of the most competitive and dynamic industries in the world's economy. If companies want to impact buying behaviour, stay on trend and adapt to competition, they need to understand the intricate links between cognitive functions, feelings and emotions, and marketing consequences of the buyers. In a report of a market research study, the size of the global food and beverage industry accounted for 8.8 trillion USD in 2019 and is projected to increase at a CAGR of 7.9% from 2020 to 2027 (Market Research Reports &



Consulting | Grand View Research, Inc., n.d.). This growth of the food industry is driven by several factors, including population growth, urbanization, increasing disposable income, changing dietary patterns, and rising health concerns. Even due to emerging socio-economic health trends, people are becoming more conscious of healthy products. Consumer behaviour is influenced by a multitude of internal and external factors, making it a complex field of study. Consumer decision-making is essentially determined by behavioural, emotional, and cognitive processes, which in turn are deeply reliant on perception, motivation, and learning memory. Various theories, such as behavioral learning theories, self-perception and attribution theories, and study models, which include the bounded rationality decision-making model, have earlier explained various consumer behavioral psychology related to neuromarketing. The complex relationship between cognitive function, emotions and marketing strategies to promote sales of food products among athletes and the public is well studied by businesses wishing to maintain competitiveness in the global food and beverage marketplace. Among the demographics, athletes are a distinct consumer group, and their food choices depend on performance objectives and the perceived effectiveness of food products. Thus, food product marketing strategies for athletes can vary from the public. Therefore, studying these cognitive and emotional mechanisms can help understand and shape human purchase decision formulas, and the current study is a step in the direction of understanding the role of neuromarketing strategies employed by food companies, such as cognitive function, emotions, and marketing strategies, in purchasing decisions and their influence on two population groups: athletes and the public.

2. Materials and Method

This study aimed to explore the influence of cognitive function, emotions, and marketing strategies on food choices for the general population and sportspersons. The questionnaire was designed based on the guidelines given by Dillman, D.A. et al. 2014 in his book Internet, phone, mail, and mixed-mode Surveys: The Tailored Design Method. The questions were related to nutrition, price, taste, convenience, brand loyalty, advertisement, etc and were created based on similar research work done earlier. The questionnaires were sent via social media platforms to the subjects across Mysuru and Kodagu districts, where they were exposed to a wide variety of food options due to the huge diversity and variation in food taste preferences in the above-mentioned demography. The study population was comprised of 100 public and 100 athletes who were randomly selected for the survey to ensure a representative sample.

3. Result

3.1. Neuromarketing Strategies Influencing Consumer Behaviour Among Athletes and the Public

Figure 1 depicts factors like nutritional content, brand reputation, price point, and packaging design that affect buying trends by the study population ($n=200$), comprising athletes ($n=100$) and the public ($n=100$). 54.2% of the combined study population based their purchasing on nutritional content, 31.3% on the brand reputation, 8.3% on price point and 6.3% on packaging design.

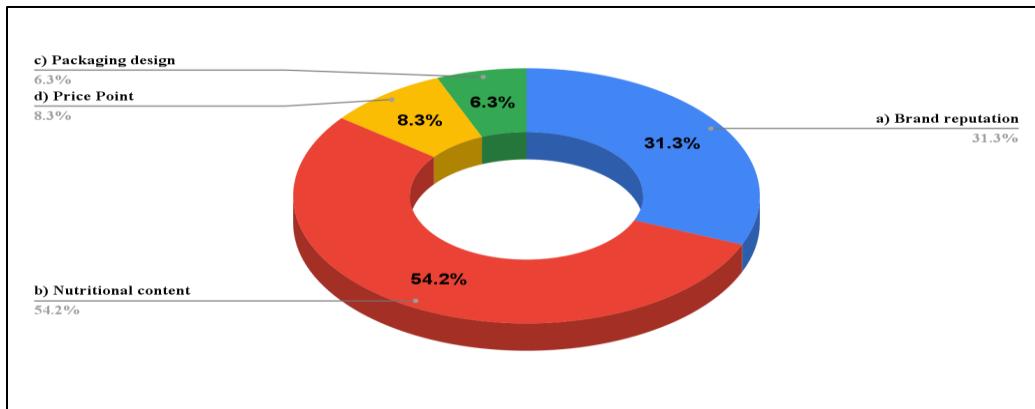


Fig. 1 Neuromarketing strategies influencing consumer behaviour among athletes and the public

3.1.1. Nutritional Content

When assessing the impact of individual components that could affect the food product purchase behaviour of the public and athletes, Nutritional content was found to be the most important factor impacting both groups (54.2%). This result is consistent with previous studies stating, "Consumers are indeed concerned with nutritional information when making purchase decisions" (Mela et al., 1998). Nutritional information is an informative cue for consumers in many categories of food products, such as dairy products or breakfast cereals. Other factors, like taste or price, may still exert more impact, but nutritional content can play a role in the final decision, e.g., larger packages of high-fat products can have a negative effect on consumers' evaluations of the healthiness of the products.

3.1.2. Brand Reputation

The second most important factor that influenced food product purchase behaviour was brand reputation (31.3%). Previous studies have found that brand reputation is a critical influential factor for consumer purchase intention and behaviour (Darley & Smith, 2015; Lindgreen & Wynstra, 2005). It has also been found that for certain products, brand reputation is more important than nutritional content, as well as other factors such as pricing and packaging design (Andersen & Philipsen, 1998). Consumers may put a different level of importance on the quality of products based on the type of food product. However, generally, all consumers have some association or belief about certain brands. Ehrenberg (2004) mentioned that consumers tend to identify and buy from their habitual brands. Frequently, there is strong segmentation at the sub-category level, but segmentation is not similar at the brand level. If a consumer has a positive perception regarding a particular brand and feels loyal to it, he or she will select this brand even if other brand products are offered at cheaper prices.

3.1.3. Price Point

Price is a vital factor that determines purchase decisions in general, and many previous studies have shown that price influences consumer purchase behaviour. In the current study, 8.3% of the study population was influenced by the pricing of food products, making it the third influential factor. According to (Saputra et al., 2022), continuous price variability proved to be the main influencing factor for those who choose a product based on its price rather than its quality or brand name. Socio-economic status largely decides the purchasing power of the consumers.

Customers are likely to see bigger changes in pricing, but they normally do not see smaller ones (Ray et al., 2012), so companies make only a big price decline on their products for the market that will be used immediately. Nonetheless, price is not unique on many occasions - the reputation of the brand and loyalty to the selling company both influence the decision-making process (Curry & Riesz, 1988).

3.1.4. Packaging Design

Packaging design was found to be the least important factor affecting food product purchase behaviour in the two groups (6.3%). Packaging is used as a data representation tool of the product, and the design acts as a cue that can influence consumer perception of a product and affect their attitudes towards the brand. Packaging is primarily used to attract attention, and consumers do not give much thought to it except when they must decide between alternatives (Jiang et al., 2010). Packaging was perceived to provide information on food product characteristics, but not much emphasis was placed on the type of information.

Some indicated that they looked for nutritional information, while others mentioned a preference for information on ingredients. The result of this study is congruent with previous similar studies that have shown nutrition and brand reputation as being the two most important effects of food-purchase determinants (Perez-Cueto, 2019; Seaton, 1993). Thus, emotional responses to marketing stimuli like packing design and price point exerted a lesser influence on rational decision-making processes.

3.2. Factors Influencing Consumer Behaviour among the Public

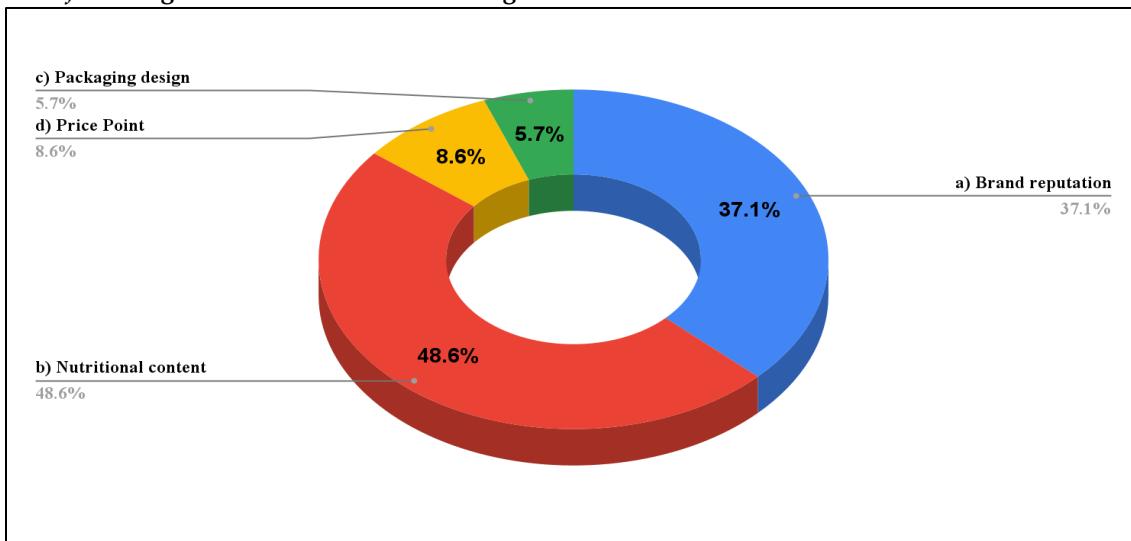


Fig. 2 Factors influencing consumer behaviour among the public

Figure 2 depicts the consumer behaviour of the public. The results indicated nutritional content to be the most important factor influencing food product purchase among the study population (48.6%), followed by brand reputation (37.1%), price point (8.6%), and packaging designs (5.7%). Thus, emotional responses to marketing stimuli like packing design and price point exerted a lesser influence on rational decision-making processes.

3.3. Factors Influencing Consumer Behaviour among the Athletes

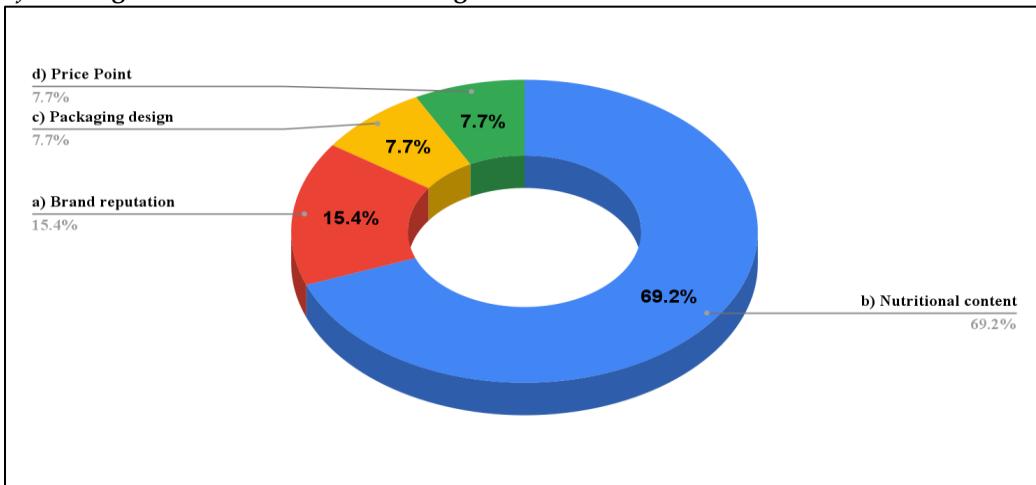


Fig. 3 Factors influencing consumer behaviour among the athletes

Figure 3 depicts that the sports athletes showcased distinct patterns of food product purchase behaviour exhibiting higher cognitive function. Emotional responses to marketing strategies tailored to athletic identity and lifestyle preferences were trivial, while strategies pertaining to performance-enhancing capabilities were widely accepted. Athletes gravitated towards products associated with energy, vitality, and physical performance, driven by a desire to optimize their dietary intake for athletic prowess.

This was indicated by 69.2% of the athletes being influenced by nutritional content compared to 48.6% of the public, depending on the factor that influences the purchase choice. Similarly, only 15.4% of the athletes were influenced by brand reputation as compared to 37.1% of the public. This shows that the cognitive function and

emotions experienced by athletes and the public are different in the context of food purchases. Athletes are more likely to feel excitement and anticipation, while the public is more likely to feel anxiety and seek efficiency regarding their purchases.



Fig. 4 Influence of individual neuromarketing strategies

3.4. Effect of Individual Neuro Marketing Strategies on the Public and Athletes

Figure 4 depicts the degree of influence individual marketing strategies have on consumer behaviour, and appreciable variations in the demographic groups studied were found. Factors such as the endorsement of a product by a professional were found to influence 75.71% of the study group, compared to an endorsement by a professional athlete, which influenced 78.72%. This shows the influence of food choices, as did packaging appeal influenced (71.78%).

The type of channels used for mediating the product was not very effective (43.89%). In comparison, the taste of the food product was dominant (82.74%), equally the price of the product (84.32%), the convenience of food products was considered relatively (73.90%), the brand name, reputation of a brand, was concerned among the demography (89.18%), Health claims were taken into priority consideration (82.04%) but its consideration in a label was required (82.71%), though many consumers mistrust marketing strategies.



Fig. 5 Influence of individual neuromarketing strategies among the public

Figure 5 depicts the influence of individual neuromarketing strategies observed among the public. It was observed that celebrity endorsement had the highest influence on consumers' purchasing behaviour (93.18%), followed by frequent consideration of health claims (88.37%). The trust in the "all-natural" label was 79.07%, while the packaging influenced 84.09% of the public. It was found that the visual appearance of the product alone drove 75% of the consumers to try new products. Practically, the price was a key factor (79.07%), followed by convenience (72.09%). Brand influence overcame convenience of the product (88.37 %), and endorsement by nutritionists/dietitians had only 60% influence on the purchasing behaviour. At the same time, celebrity endorsement had the maximum influence of 93.18% on the public's purchasing behaviour. Advertising channels were moderately influential (62.79 %). The results highlight endorsements, health claims, packaging, and brand reputation, majorly driving the public's purchasing behaviour.

Figure 6 depicts the influence of individualized neuromarketing strategies on buying trends by the athletic study population. It was noted that the most influential factors in choosing food products were taste (95.71%), endorsements by nutritionists or dietitians (91.43%) followed by brand name (90.00%), which highlights that flavor of the food denoted by organoleptic experience and products nutritional quality in enhancing athletic performance as endorsed by nutritionists or dietitians were vital in athlete's food choices. Faith in expert recommendations shows cognitive faculty of critical thinking and reasoning reliance on expert advice based on scientific knowledge. The price of the products played a crucial deciding factor for 88.57% of the respondents, which could have been the economic status. Packaging quality, based on design and color, impacted 81.43% of athletes' buying choices.

Health claims of the food influenced 75.71% of the athletes, and about 50% trusted only "all-natural" labels. Celebrity/athlete endorsements had a lesser influence (64.26%). This depicts the usage of intellect and discretion by athletes while choosing a food product, as endorsements by celebrities do not necessarily translate into performance benefits. The analysis interprets that the taste of the product, brand trust, expert endorsements, and practical considerations are the influencing factors in purchase decisions among athletes. This demographic exhibited distinct patterns of food product purchase behaviour with higher cognitive function. While emotional function remained trivial, particularly concerning price point, socio-economic status, and lifestyle, emotional responses to marketing strategies were identical, but the psychological function of consumer behaviour dependent on their lifestyle preferences wielded equal sway. Athletes gravitated towards products associated with energy, vitality, and physical performance, driven by a desire to optimize their dietary intake for athletic prowess, while the public focused on product convenience and sustainability.



Fig. 6 The influence of individualized neuromarketing strategies on athletes

4. Conclusion

In conclusion, this study provides empirical evidence of the complex associations among cognitive function, emotions, marketing methods, and food purchasing behaviour among athletes and the public. The study reveals that cognitive factors (e.g., nutritional content and brand reputation) play a more significant role than emotional factors (e.g., packaging design and price) in food product purchase behaviour among athletes in comparison to the athletic population. Our findings have significant implications for businesses in the food industry aiming to influence purchase decisions, particularly those marketing to athletes and the public in Indian markets. Understanding these psychological features could be essential for companies looking to influence customer behaviour. Overall, the results can be used to guide and develop effective marketing strategies that target the specific norms of consumer behaviour in food product purchases. By these critical components of marketing strategies, businesses can improve their sales and market share. The findings could also be useful for international bodies such as WHO, Indian government agencies such as FSSAI, and public and private policymakers looking to improve public health by promoting healthy food choices. By understanding the key factors that influence consumer behaviour regarding food products, they can design more effective public awareness campaigns worldwide and specific rules and regulations that target these factors.

References

- [1] Esben Sloth Andersen, and Kristian Philipsen, "The Evolution of Credence Goods in Customer Markets: Exchanging 'Pigs in Pokes,'" *DRUID Winter Seminar, Middelfart*, vol. 10, 1998. [[Google Scholar](#)]
- [2] David J. Curry, and Peter C. Riesz, "Prices and Price/Quality Relationships: A Longitudinal Analysis," *Journal of Marketing*, vol. 52, no. 1, pp. 36-51, 1988. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [3] William K. Darley, and Robert E. Smith, "Gender Differences in Information Processing Strategies: An Empirical Test of the Selectivity Model in Advertising Response," *Journal of Advertising*, vol. 24, no. 1, pp. 41-56, 1995. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [4] Don A. Dillman, Jolene D. Smyth, and Leah Melani Christian, *Internet, Phone, Mail, and Mixed-Mode Surveys*, John Wiley and Sons, 2014. [[Publisher Link](#)]
- [5] Andrew S.C. Ehrenberg, Mark D. Uncles, and Gerald J. Goodhardt, "Understanding Brand Performance Measures: Using Dirichlet Benchmarks," *Journal of Business Research*, vol. 57, no. 12, pp. 1307-1325, 2004. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [6] Lan Jiang et al., "The Persuasive Role of Incidental Similarity on Attitudes and Purchase Intentions in a Sales Context," *Journal of Consumer Research*, vol. 36, no. 5, pp. 778-791, 2010. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [7] Market Research Reports & Consulting, Grand View Research, Inc. USA. [Online] Available: <https://grandviewresearch.com/>
- [8] Carl F. Mela, Sunil Gupta, and Donald R. Lehmann, "The Long-Term Impact of Promotion and Advertising on Consumer Brand Choice," *Journal of Marketing Research*, vol. 34, no. 2, pp. 248-261, 1997. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [9] Federico J.A. Perez-Cueto, "An Umbrella Review of Systematic Reviews on Food Choice and Nutrition Published between 2017 and 2019," *Nutrients*, vol. 11, no. 10, pp. 1-17, 2019. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [10] Sourav Ray, Charles A. Wood, and Paul R. Messing, "Multicomponent Systems Pricing: Rational Inattention and Downward Rigidities," *Journal of Marketing*, vol. 76, no. 5, pp. 1-17, 2012. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [11] Arif Rahman Saputra et al., "Influence of Brand Image and Prices on KFC Product Purchase Decision," *International Journal of Social Sciences*, vol. 5, no. 3, pp. 146-152, 2022. [[CrossRef](#)] [[Google Scholar](#)] [[Publisher Link](#)]
- [12] A.V. Seaton, *Marketing turistico: by Giovanni Peroni*, Tourism Management, vol. 14, no. 3, 1993. [[CrossRef](#)] [[Publisher Link](#)]