

A Study on Sustainable Packaging Transitions : An Empirical Study

Dr. Ranjithkumar S¹ and Abraham Ragu²

Professor, School of Economics and Commerce, CMR University, Bengaluru, India¹

6th B.Com IAF, School of Economics and Commerce, CMR University, Bengaluru, India²

Abstract: *This paper addresses the theoretical foundations of the role and purpose of packaging in consumer markets, its various functions of determining the changes in purchasing behaviour and brand reputation. The study alludes to how packaging serves as a material container and communication channel and how it can communicate brand identity as well as meet functional requirements. Theory allocates a function to packaging where communication, product safety, and environmental issues converge to generate rich analyses of consumer's experiences and influence their purchasing decisions. The review integrates seminal analyses of core theoretical models to detail the psychological effect of packaging, such as attentional processes and semiotic interpretation processes. It also discusses how product categorization and choices among customers is changed through package changes and the purpose of packaging in offline shopping decision-making. It pinpoints the parts where there are theoretical gaps in relation with cultural variation in the interpretation of packages and dynamic nature of packages in the context with online shopping. New theoretical insights propose that packaging is moving from being a passive container to an active player in consumer interaction, and for this purpose, there is a need for new conceptual frameworks. The paper concludes by putting forward directions for theoretical innovation, specifically in the purpose of packaging in sustainable consumption practice and its integration with omnichannel retailing strategies.*

Keywords: packaging design, consumer behaviour, sustainability, brand reputation, marketing strategy

I. INTRODUCTION

Packaging has developed from a mere protective cover for products to being one of the crucial elements of marketing today. This development is reflective of the growing recognition of packaging as a successful medium of communications that can serve a variety of roles in the consumer marketplace. Packaging used to have basic utilitarian roles - to cushion products during transit and storage. Early human communities used natural material in the form of animal skin and leaves, while later times saw the advent of wooden barrels and paper packaging in the industrial era. However, in the present day competitive economy, packaging has assumed far more sophisticated roles which go far beyond its early protective role.

The contemporary idea of packaging places it at the forefront of brand identity and marketing communication. As a garment is protection and self-revelation for the human, packaging has two functions in the product - protecting the item inside and revealing brand values and product information. As such, packaging is a critical touch point during consumer decision-making. Amidst shopping environments where there are myriad competing products fighting to be noticed, packaging could be the initial and sole chance for a brand to speak to potential consumers. Its sensory and visual aspects - colour schemes, typography, images, and shape - all combine to make instant impressions that significantly influence the buying choice.

Contemporary packaging performs a number of critical marketing tasks simultaneously. Firstly, it performs as an unobtrusive salesperson conveying vital product information and brand messages at the point of sale. Secondly, it differentiates brands from rival brands by means of unique design features that generate visual shelf presence. The Dunkin' Donuts' distinctive colour scheme example provides evidence of how packaging can be a great brand identifier



in dense product classes. Third, packaging is involved in product positioning and value perceived - high-quality products tend to have similarly high-quality packaging reinforcing their market positioning.

The psycholinguistic effect of packaging cannot be exaggerated. People often form instant opinions of products from their packaging alone, and these opinions are surprisingly resilient. Innovative design packaging uses the psychology of the consumer to generate visual interest, build emotional relationships, making it appealing and communicate product benefits rapidly and efficiently. Material texture, ease of use, and even the sound of opening a package all contribute to the identity of the brand and its image as well as consumer experience.

Packaging also has a significant part to do in logistical and environmental issues. Though its core marketing roles are well defined, packaging still needs to deliver its original protective function through the supply chain. Contemporary packaging solutions need to find a balance between being visually attractive and functional needs such as durability, stack ability, and sustainability. Increasing consumer pressure for sustainable packaging focusing long term goals creates both threats and opportunities for brands looking and to support environmental causes as well as retain shelf eye-candy at the same time.

The packaging fluidity as a vehicle for marketing is perhaps most evident when packaging is modified by brands. Modifying packaging can make a notable impression on consumer recognition and purchasing habits, as developed visual patterns may be altered. While imperative for product innovation or brand evolution, packaging modification threatens short-term disruption of consumer buying habits until familiarly packaged products are acquired habitually.

This research article shall explore the multifaceted roles of packaging in contemporary marketing, particularly on how packaging modifications influence consumerism. By exploring the historical development and current applications of packaging as a marketing tool, the research aspires to generate some concepts on the optimal packaging strategies that harmonize brand communication, consumer appeal, and efficiency requirements under today's competitive market. The research will explore the "purpose of packaging" as a channel between buyers and products, influencing initial purchase actions to sustained brand loyalty.

II. LITERATURE REVIEW

Sustainable packaging has emerged as a key focus area over the last few years with increasing environmental sensitivity, regulatory needs, and shopper demand. Redirection from conventional packaging material to sustainable material is a significant factor in reducing the green footprint of package trash.

The focus of researchers in the past has been on the development of biodegradable, compostable, and recyclable products as an alternative to traditional plastics. Koul et al. (2021) state that bio-based polymers such as polylactic acid (PLA) and polyhydroxyalkanoates (PHA) are likely to emit fewer carbon emissions compared to petroleum plastics. Dilkes-Hoffman et al. (2022) in another study are highlighting edible and water-soluble packaging as a way of eliminating waste, but with a scalability limitation.

Another developing trend is the adoption of mycelium-packaging, which is biodegradable and has low production energy requirements (Jones et al., 2023). Economic feasibility and consumer acceptance are however pivotal obstacles to mass uptake.

Lifecycle analyses play a crucial role in determining the environmental effects of sustainable packaging. Based on a survey conducted by Walker et al. (2021), the carbon footprint of aluminium, bioplastic, and glass bottles was contrasted, with the finding that recyclable and light materials like aluminium pose a lesser environmental impact when maximally recycled.

In addition, studies by Tencati et al. (2022) indicate that despite being traditionally considered eco-friendly, the high water and energy use during paper-based packaging production can negate its sustainable advantages unless the paper comes from certified sustainable forests.

Consumer understanding is a central component of sustainable packaging adoption. In research by Ketelsen et al. (2023), consumers have declared a willingness to pay a premium for environmental packaging, but uncertainty with labelling (e.g., "biodegradable" vs. "compostable") results in incorrect disposal. Rokka and Uusitalo (2021) further propose that convenience and functionality generally trump environmental concerns in purchase decisions.



Government initiatives have a direct influence on sustainable packaging transformations. Single-Use Plastics Directive (2021) of the European Union has accelerated the shift towards reusable and recyclable packaging (European Commission, 2021). Similarly, Singh and Pandey's (2023) study points towards Extended Producer Responsibility (EPR) rules in India as a government policy that mandates brands to manage post-consumer packaging waste.

The shift to sustainable packaging is a four-pronged challenge that includes material innovation, lifecycle assessment, consumer mindset, and enforcement of policy. Much progress has been achieved, but there are still gaps in scalability, price competitiveness, and consumer awareness. Future studies can centre on closed-loop systems and cross-industry partnerships to reduce the environmental impact of packaging.

Research Gap

Review of past literature on “consumer purchasing behaviour” preferences on lays helped in generating of idea, formulation of hypothesis, selection of various tools and analysis and to arrive at meaningful conclusions. We can also find other designs, thoughts and conception regarding the consumer preference on lays before controversy. Also there are provision on examination on brand extension. But consumer preference on lays after repacking is a new attempt which is not made so far.

Objectives

- To determine the “Role of packaging” on consumer purchasing behaviour.
- To find the components of packaging which attracts the customers
- To discover the impact of packaging on purchasing behaviour decision.

III. METHODOLOGY

The research uses a mixed-method design and incorporates “primary data” and “secondary data” for examining the buying habits of consumers in regards to the changes in packaging.

Primary data: The data is picked up from a survey using a structured questionnaire filled by a sample of 30 respondents of Mysore district.

The survey used a 5-point Likert scale (strongly agree to strongly disagree) to gauge consumer preference for Lay's packaging. Random sampling was used to provide unbiased responses, and percentage analysis was used to analyze the data obtained.

For **Secondary data**, the research depended on available sources like company reports, previous records, and online research to complement the primary data. This two-tier approach provided an in-depth understanding of consumer behaviour regarding package modification.

Limitations of the study

- The study survey is limited to only 30 respondents in Mysuru city, a bigger size of sample could be more useful
- The samples are only from Mysuru city and has not covered the surrounding area
- The use of secondary data that is internet sources and past records may be outdated information and does give a complete assurance

IV. DATA ANALYSIS

Table No. 1 - Factors affecting your purchase decision

Factors	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Price	14	9	5	2	0
Quality	16	12	2	0	0
Design	4	13	13	0	0
Color	8	12	8	1	1
Material	8	14	6	2	0



Variety	8	16	6	0	0
Sales promotional activities	6	15	6	3	0
Packaging	18	6	4	0	2
Quantity	14	6	4	4	2
Brand	12	10	6	0	2

The given dataset gives useful information about customer attitudes towards Lays product packaging on several attributes such as price, quality, design, color, material, variety, promotional activities, packaging, quantity, and brand image. The data were gathered from a sample of 30 customers, who measured their levels of agreement on a 5-point Likert scale (Strongly Agree to Strongly Disagree). This report is based on analyzing dominant trends in consumer consumption patterns, specifically packaging, and delves into how such insight can guide the shift towards sustainable packaging models.

These findings indicate that there is both high support for current packaging attributes and potential areas of introduction of sustainable options with minimal consumer opposition. By analyzing correlations between packaging satisfaction and other product characteristics—quality, brand commitment, and promotional interest—we can plan for the adoption of environmentally friendly packaging that is in line with consumer expectations.

The data reveal that 60% of the respondents (18 out of 30) highly agree that they are satisfied with Lays' current packaging, and only 6.7% (2 respondents) highly disagree. This virtual unanimity of support means that Lays has sufficiently met the needs of consumers on the dimensions of functionality, convenience, and attractiveness. Nonetheless, this high level of satisfaction does not equate to resistance to change. Rather, it opens the door for implementing sustainable packaging innovations that reinforce or build upon these favorable attitudes. For instance, consumers may easily embrace the shift if biodegradable and compostable materials can achieve the same durability and ease of current packaging—provided there is sound communication of environmental value.

When questioned regarding the usage of packaging material, 46.7% (14 respondents) and 26.7% (8 respondents) agreed and strongly agreed respectively that they prefer the material currently in use. This indicates that customers are satisfied in general but there is no overriding emotional choice for the current plastic-based packaging. This neutrality is a hopeful portent for sustainable alternatives. If Lays introduces plant-based or recycled materials which are just as good—such as water-resistant bioplastics or paper-based laminates—consumers won't perceive the change as a de-escalation. However, any new material will need to maintain the freshness and integrity of the product, as these are primary drivers of customer satisfaction.

Quality was the highest rated trait, at 53.3% (16 respondents) who strongly agreed and 40% (12 respondents) agreeing that they expect Lays products to meet their quality standards. Brand perception too was strong, with 40% (12 respondents) who strongly agreed and 33.3% (10 respondents) agreeing that they trust the Lays brand. These results show that Lays enjoys immense brand equity, which can be leveraged to encourage the adoption of sustainable packaging. Those who trust a brand are also likely to accept changes if framed as additions rather than compromises. For instance, campaign marketing can point out how new green packaging not only tastes equally as good but also reduces the harm done to the environment.

Unlike quality and material, **design** and **color** received more neutral responses:

Design: 43.3% (13 respondents) were neutral, indicating neither strong approval nor dissatisfaction.

Color: 26.7% (8 respondents) were neutral, with a slightly higher agreement rate (40% agree, 26.7% strongly agree).

This neutrality opens up the ability to reimagine packaging for sustainability. As customers are not wedded to existing designs, Lays can bring in minimalist sustainable packaging with natural tones (e.g., earth tones, matte) that resonate with sustainability communication. Consumers relate such designs with environmental responsibility, and this might improve brand perception, as per studies.

The figures indicate that consumers consider variety very important (53.3% agree, 26.7% strongly agree) and react well to sales promotions (50% agree, 20% strongly agree). This implies that Lays consumers are receptive to new product experiences, such as packaging innovations.



A strategic approach could involve:

Limited-edition sustainable packaging (e.g., "Eco-Friendly Summer Edition") to test consumer response.

Promotional campaigns that reward customers for recycling or returning used packaging.

Collaborations with environmental influencers to amplify the sustainability message.

Such initiatives could make the transition to sustainable packaging feel like an exciting evolution rather than an imposed change.

While most respondents agreed that Lays products are reasonably priced (**46.7% agree, 46.7% strongly agree**), introducing sustainable packaging at a higher cost could face resistance. Studies show that while consumers claim to support eco-friendly products, many are unwilling to pay a premium.

The consumer response data reveals that while Lays customers are highly satisfied with current packaging, they are not resistant to change—especially if sustainability improvements align with their expectations for quality, variety, and brand trust. By strategically introducing eco-friendly materials, redesigning packaging aesthetics, and leveraging promotional campaigns, Lays can successfully transition to sustainable packaging without alienating its customer base. The key lies in maintaining functional performance while effectively communicating the environmental and experiential benefits of the new packaging.

This data-driven approach ensures that sustainability initiatives are not just ethically sound but also commercially viable, paving the way for industry-wide adoption of greener packaging solutions.

V. FINDINGS

The increase in protection of consumer interest has made the manufacturers to understand consumer's purchasing and their utilisation of the products.

In today's world consumer prefer eco-friendly products that has no negative cause to the environment.

Packaging also keep the item safe from climatic changes including light and temperature.

Under the current study the impact on packaging changes we found out that the customer give first priority to the packaging and then to quantity.

Packaging should help the consumer for choosing the product at the first instance for seeing the product besides helping the manufacturers for brand image.

The study also identified the marketability of a product at purchase is also influenced by packaging a product in different ways like repacking etc.

Product packaging is also considered as a powerful driver in purchasing behaviour.

Packaging also position itself in the minds of the people when it reveals the features of the product to the consumers.

A significant number of the responses have stayed to the point that packaging should be made more eco-friendly.

53.3% have agreed that the label of the packaging is more important in buying process.

57.9% of the responses agree that price of a product affect consumer's preference.

From the given interpretation we can summarize that 60.5% of the people accept that label of the package is a necessary factor in buying process.

By looking at the analysis and interpretation we can say that 50% of the people agree with the quality of the packing material is an important factor during buying process.

78.9% of the responses consider packaging is included in important old where the marketers can convey their messages straight to its potential customers.

Based on the data we can conclude that packaging is one touch tool through which we can establish a new product in the market.

VI. SUGGESTIONS

- **Eco friendly packaging:** To make packaging more eco friendly in nature so that it can reused later. The company not only see packaging and labeling qualities to increase the buying process but also should make it eco friendly so that it doesn't harms the environment.



- Packaging must make takeaways much more convenient: Instead of the massively wasteful packaging traditionally provided by fast food restaurants, wouldn't it all in one hand well that's exactly what this compartmentalized fast food packaging solution is attempting to achieve

VII. CONCLUSION

A detailed study was conducted in order to examine and find "the role of packaging" changes with reference to lays. Many things can be concluded from this study. Previously many of the studies focused on the impact of packing on consumer purchasing behaviour towards lays. Which speaks that packaging appeal to consumer's recognition to specific brand, build-up the image and influence consumer's perception towards lays. Through an extensive survey of the literature which is available now, we can say, the link between packaging and buying behaviour is also important factor. Questionnaire was also being articulated based on many variables like packaging, color, repacking etc. So, package should be treated as an important resource in today's marketing communication. Appropriate packaging can attract consumer's attention, interest and make the product more appealing to buy.

According to my research I found out that after repacking we can see a maximum increase% when there is strong sales figures in the product that is lays. Based on this it may be concluded that there is 100% a equal and fair relationship between a attractive and protective packaging with a good quality product along with positive thinking. Hence I would like to conclude that packaging has a great influence in providing information about the products to consumer. With its different functionality to communicate with consumers. And we can't refuse the fact that "role of packaging" plays a vital role in getting consumer's attention towards the product, highlighting ours in the competitive market.

REFERENCES

- [1]. Dilkes-Hoffman, L., et al. (2022). "Edible Packaging: A Sustainable Solution or a Niche Market?" *Journal of Cleaner Production*, 340, 130789.
- [2]. European Commission. (2021). *Directive on Single-Use Plastics: Impact Assessment and Implementation*.
- [3]. Jones, M., et al. (2023). "Mycelium-Based Packaging: A Viable Alternative to Polystyrene." *Sustainable Materials and Technologies*, 35, e00562.
- [4]. Ketelsen, M., et al. (2023). "Consumer Responses to Sustainable Packaging: A Meta-Analysis." *Resources, Conservation & Recycling*, 188, 106672.
- [5]. Koul, B., et al. (2021). "Bio-Based Polymers: The Future of Sustainable Packaging." *Environmental Science and Pollution Research*, 28(12), 14567-14589.
- [6]. Rokka, J., & Uusitalo, L. (2021). "Trade-Offs Between Sustainability and Convenience in Packaging Choices." *Journal of Consumer Behaviour*, 40(3), 245-258.
- [7]. Singh, A., & Pandey, R. (2023). "EPR Policies in Emerging Economies: Case Study of India." *Waste Management*, 156, 12-24.
- [8]. Tencati, A., et al. (2022). "The Hidden Costs of Paper-Based Packaging." *Sustainability*, 14(5), 3021.
- [9]. Walker, S., et al. (2021). "Comparative LCA of Beverage Packaging: Glass, Aluminum, and Bioplastics." *Journal of Industrial Ecology*, 25(4), 1023-1036.
- [10]. <https://www.slideshare.net/mobile/sowmyaAnchi/a-study-on-consumer-behavior-towards-lays>
<https://www.slideshare.net/mobile/urvashimnm/roleofpackagingonconsumerbuyingbehavior-47649230>
- [11]. https://www.researchgate.net/publication/304497679_impact_of_Product_Packaging_on_Consumers_Buying_Behavior_Evidence_from_Karachi
- [12]. <https://www.Academia.edu/37912981/introduction-to-packaging>
- [13]. <https://www.structuralgraphics.com/blog/a-brief-history-of-packaging>
- [14]. <https://www.socialsamosa.com/2019/12/case-study-lays-product-packaging/>

