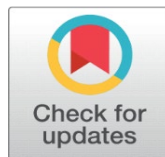


CHILD-FRIENDLY VEGETARIAN FOOD PACKAGING: VISUAL SAFETY, NUTRITION COMMUNICATION & ECO-MATERIALS — A QUALITATIVE STUDY OF VISUAL ELEMENTS IN FIVE INDIAN FOOD PRODUCTS

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ABSTRACT

The packages are a powerful and effective verbal and visual tool, which influences children preferences and parent's attitudes toward the safety, nutrition and ethics of the products. Since the Indian market of vegetarian food aimed at kids is expanding, the packaging design gains additional significance due to the conservative standards of diet and increased focus on health and sustainability. This qualitative research explores the significance of the basic visual details namely color, typeface and illustration in five Indian vegetarian food products that were designed to appeal to children. The study employs both visual semiotic and thematic analysis to examine the message conveyed through packaging in terms of food safety, nutritional transparency and environmental material awareness. The findings indicate that bright and warm colors are employed to derive the attention of kids whereas soft and natural colors are employed to demonstrate to the parents that the product is safe and healthy. This supports previous research on the role of color in food packaging with regard to emotions [Heller et al. \(2019\)](#), [Martin and Singh \(2023\)](#). Children will be more attracted when the type is entertaining and parents will feel more knowledge about the nutritional information in case the type is structured and is easy to read. This aligns with studies on the way to structure information in terms of packaging design [Peters et al. \(2020\)](#). Illustrations, especially friendly characters and pictures of ingredients also play the role of two-way communicators: they attract the interest of children and reinforce gradually arguments about vegetarianism and health [Nguyen and Jha \(2024\)](#). However, the eco-material communication is not that well represented yet, and this is why the ability of sustainability signaling can still be improved [Kumar and Ghosh \(2022\)](#). The research provides design-based guidance to creating child-friendly vegetarian food packaging, which is aesthetically pleasing, has a clear nutritional value and is friendly to the environment, leading to practical implications to designers of food, food manufacturers, and nutrition communication based on policies.

Keywords: India, Product Design, Eco-Materials, Child-Friendly Packaging, Vegetarian Food, Visual Elements, Nutrition Communication



1. INTRODUCTION

The packaged children food market across the globe has expanded faster in the past two decades. This is due to the fact that the population is shifting towards urban areas, families are evolving, and individuals seek fast and easy foods. It is in this instance that packaging has proven to be a key interface that is not only a means of protecting the items but also an effective means of visual communication. Children tend to notice the packaging when they encounter a food object. It is capable of modifying their expectations of the way things taste, the way they feel and their familiarity with a brand. Meanwhile, packaging is also a means through which parents and caregivers can train their children on safety, nutrition, and moral responsibility [Peters et al. \(2020\)](#). Since children tend to be more susceptible to marketing and less capable of comprehending the complicated information, the packaging of their food are also problematic. It is proven that children are especially sensitive to visual stimuli, including bright colors, playful fonts, and drawn characters, which to a great extent affect the product attraction and the preference formation [Heller et al. \(2019\)](#). Concerned, however, are legislators and experts in the field of public health that there is excessive amounts of visual persuasion and less of nutritional illumination. This translates to the fact that packaging has to strike the right balance between ensuring that the kids are interested and addressing the parents in manner that assists them to make the best choices. This is more significant in India since the culture and morals of being vegetarian make up a large portion of the culture. Many Indian families consume vegetarian diets because of religious, environmental, and health reasons. Individuals tend to believe that vegetarian children foods are healthier in their nature, and it is not always true [Patel and Singh \(2021\)](#). Packaging is significant since it demonstrates that the ingredients are authentic, wholesome, and clean and they are also able to remind people that they are vegetarian. Clean color palette, natural photos and standardized certification marks as visual safety indicators can be used to earn the trust of parents. Research indicates that individuals tend to believe that anything that depicts something natural and simple implies that the product is healthy and safe [Martin and Singh \(2023\)](#). Besides the safety signs, the issue of bad nutrition communication remains a major issue. Parents find it difficult to immediately determine whether a product is healthy to their child since nutritional contents are usually extremely technical and difficult to comprehend. As it has been proved, visual hierarchies, iconography, and other types of texts can contribute to the understanding and recall of the information on nutrition in the context of food packaging [Campos et al. \(2018\)](#). The society is becoming more informed about plastic waste and climatic changes and has consequently created curiosity about sustainable packaging materials and sustainability claims. Visual indicators of corporate responsibility and environmental ethics are eco-material signals such as recyclable symbols and biodegradable packaging cues and natural textures [Kumar and Ghosh \(2022\)](#). Although the increasing numbers are concerned about this, sustainability messages on the packaging of children food are not clear and not well researched particularly in developing nations such as India.

Due to these aspects, an in-depth qualitative research is required to explore how the visual images in the vegetarian food packaging of children can tackle the concerns of child appeal, parental mistrust, and sustainability simultaneously. The research used the qualitative visual semiotic method to examine the communicative role played by color, typography, and imagery in Indian vegetarian food stuffs that are aimed at children. The project will provide design-oriented and policy-capturing information by analyzing the packaging graphics of the chosen products and, in this way, will promote ethical marketing, the transparency of nutrition, and packaging practices that are environmentally friendly.

2. LITERATURE REVIEW

Packaging can transform what children consume and the amount of consumption in a massive manner. It is not merely a mere container but rather a convincing image. Children perceive foods differently than the adults do due to the fact that their brains are still in the stage of learning how to read or comprehend about nutritional facts. It is proven by previous studies that boys and girls are especially attracted to bright colors, cartoon fonts, and cartoon characters, which play a significant role in the attention-grabbing, emotional involvement, and preference of a product [Heller et al. \(2019\)](#), [Elliott \(2017\)](#). Children tend to make these items symbolic shortcuts in order to associate products with fun, taste and enjoyment regardless of their healthiness.

One of the most significant aspects is the color of packaging of food that is eaten by kids. Bright warm colors are red, yellow and orange, which are commonly used to make people excited and energized. On the one hand, pastel colors are typically connected with security, nurturance, and delicacy [Martin and Singh \(2023\)](#). It has been found that children

remember and recognize products with high contrast in color and visually stimulating layouts more effectively [Kauppinen-Räsänen and Luomala \(2019\)](#). Some smart use of color can also be morally questionable with intelligent packaging being applied to market unhealthy food. It demonstrates the high value of good design practices.

Kids will tend to like eating packaged meals when they have pictures and writing on them as this increases their desire to eat them. Children prefer round, informal fonts as they are pleasant and welcoming to look at [Velasco and Spence \(2019\)](#). This has been illustrated to make kids more emotionally attached to things and demand them more frequently, particularly people, animals, or cartoon characters. It is what is commonly referred to as pester power [Elliott and Truman \(2020\)](#). Such image tricks may be effective in grabbing attention of the kids, but may also conceal critical details about the product. This implies that parents are forced to perform the role of evaluating the goods.

Packaging provides parents with much information and confidence. Parents consider visual safety signs, nutrition, and ingredient lists to determine whether a certain product is safe for their children or not. Evidence points to the fact that clear communication of nutrition which is supported by icons, symbols, and structured visual hierarchies is more easily understood and trusted [Peters et al. \(2020\)](#), [Campos et al. \(2018\)](#). To be convinced that packaging is safe and responsible, people tend to believe that it should be clean, natural, and comply with the rules. This is more so in the case of food to kids. The food packaging of children is extremely crucial as it can either encourage them to eat or make their parents deny them the right to eat. Children can alter how individuals perceive and like a brand according to the appearance, whereas parents make a choice of what to purchase according to how safe and healthy they believe it to be. This two-target population generates a tension in the design, which implies that the packaging should be both entertaining to children and practical to adults simultaneously [Ares et al. \(2021\)](#). According to the recent studies, balanced packaging may become the best solution to implement the captivating visuals with the correct information on nutrition and safety so the children make the right choices and the concepts of the pack protect the cognitive vulnerability of children. It has been observed that there is an increasing scholarly interest in the connection between packaging and children food selections; nevertheless, the number of studies on the subject is limited, especially when it comes to vegetarian foods in the emerging markets where cultural contexts, food morals, and sustainability issues make the communication of packaging more challenging. This gap highlights the necessity of the qualitative study examining the effect of visual elements on the attraction and parental trust to child-targeted vegetarian food packaging in children. Vegetarian food has special communicational factors and opportunities, specifically in the market when cultural, ethical, and health-related factors influence the vegetable diet. People must be capable of trusting vegetarian meals, and thus they must be extremely open as to the source of their food, its healthiness and how it compliments a vegetarian diet. This explains that knowledge of what is in the food, where the protein is sourced, and how the micronutrients are added is very important, particularly with the food of kids as their parents and other care givers are very conscious about their nutrition [Patel and Singh \(2021\)](#).

Regarding the nutrition of kids, there is a question of whether vegetarian diets will provide them with adequate protein, iron, calcium, vitamin B12, and other necessary micronutrients. This is the reason why packaging is a good option to make people think that a product has all the nutrients it requires, and is balanced. Purchasing vegetarian food items on behalf of their children, parents seek visual indications on the packaging that indicate the quantity of protein in the item, how it was fortified, and the source of the foods [Alaimo et al. \(2020\)](#). Likeness of lentils, grains, nuts, and vegetables, transparent icons with the name of plant protein or fortified by vitamins, make people feel less concerned with nutritional risk as they make them feel less worried. It is extremely significant to alter the way in which people perceive vegetarian food as something healthy, safe and morally correct. The use of color palettes predominantly consisting of greens, browns, and other earthy colors can be associated with being natural and environmentally friendly, and this can be used to support the plant-based identity of the products [Kauppinen-Räsänen and Luomala \(2019\)](#). Such images assist vegetarian foods in contrasting with highly processed foods, and contribute to larger narratives regarding wellbeing and health. Individuals tend to employ clear, plain typefaces to demonstrate innocence, sincerity, and scientific integrity [Velasco and Spence \(2019\)](#). Typography is also useful in making people comprehend.

The vegetarian food packaging should include pictures and illustrations on the packaging as it proves how the ingredients are obtained and how healthy they are. Research indicates that believable images of ingredients help to appear fresher and more natural whereas simplified or stylized images are easier to interpret and more attractive to children without being too complex [Nguyen and Jha \(2024\)](#). Children vegetarian packaging is often used to do both of these things: the products become more appealing to children, and the packaging educates parents about the health advantages to plant-based products. In addition to nutrition, vegetarian food communication is becoming more

connected to stories about morals and the environment. People often say that plant-based diets are good for the environment, animals, and the long term. Adding eco-symbols, natural textures, and promises about sustainability to packaging graphics makes this connection stronger and makes the company more believable to eco-conscious customers [Kumar and Ghosh \(2022\)](#). However, empirical research indicates that sustainability messaging in vegetarian food packaging is often implicit rather than explicit, thereby reducing its effectiveness in influencing consumer decision-making. Even though more people want to market vegetarian food, most of the research so far has been about adults in Western countries. There has been minimal emphasis on conveying nutritional adequacy and ethical principles in vegetarian food packaging for child-oriented products in emerging economies such as India. As vegetarianism gains prevalence in India and concerns regarding child nutrition and food safety intensify, there is a distinct necessity for qualitative research examining the influence of visual elements on the communication of vegetarian cuisine to children. This study addresses this gap by analyzing how packaging design deliberately conveys vegetarian identity, nutritional validity, and ethical importance through visual components.

People are more aware of climate change, plastic pollution, and the decline of the environment, so sustainability is now a big part of designing food packaging. A lot of the solid waste in the world comes from trash from packaging, especially single-use plastics. Because of this, governments, businesses, and people have all been looking for more eco-friendly options. In this case, using eco-friendly materials and making packaging that lasts is now both a legal requirement and a good marketing move [Kumar and Ghosh \(2022\)](#).

Eco-materials are packing materials that can be reused, recycled, or turned into compost. Eco-friendly packaging is becoming more and more common in the food industry, especially for products aimed at kids. It is seen as a way to protect the product and do the right thing. Research indicates that parents perceive eco-friendly packaging as indicative of reduced chemical exposure, enhanced product quality, and more ethical business practices, thereby augmenting their trust in the company overall [Magnier and Schoormans \(2015\)](#). So, sustainability cues on packaging affect not only how people think about the environment but also how they judge health and safety.

Visual communication plays a critical role in the demonstration of sustainable features due to the fact that many people do not have time or technical skills to go into the finer details of material production. Having visible labels, such as recyclable signs, compostable certification marks, and words such as eco-friendly packaging, people can choose better [Testa et al. \(2020\)](#). Eco-icons are images that simplify the process through which individuals discover eco-friendly products particularly in crowded stores. Studies indicate that products whose sustainability is evident are more likely to be regarded as environmental friendly products and tend to be favored compared to other similar products that lack the signs [Kumar and Ghosh \(2022\)](#). The message on sustainability can be passed across through design elements like color, texture, material finish, and symbol and labels. Being natural and environmentally friendly comes to people when they consider earthy color schemes, matte finishes, craft-paper textures, and simple layouts [Steenis et al. \(2018\)](#). These are the visual elements that are identified by people as the green aesthetic. This allows individuals to speculate that something is sustainable even when no one has written statements. These hints should be thoughtfully included in packing food to kids in order to make the package attractive as well as to avoid the meal appearing dull and uninteresting.

Although, it is clear that an increasing number of individuals are becoming concerned with sustainability, it has been reported that discussing sustainability on food packaging of kids is not good and most of the time not developed. The products of adults are assigning a greater role to environmentally friendly materials, and the products of children are usually brightly colored and designed around some characters and, therefore, less information about sustainability is visible or significant [Ares et al. \(2021\)](#). This leaves messages on sustainability prone to be filtered out more so to parents seeking alternatives that are environmentally friendly when it comes to their children.

Individuals also have concerns relating to greenwashing that is, the exaggeration or falseness of claims regarding environmental friendliness. This increases the necessity of open and transparent communication. The eco-labels and standardized symbols should be visible and verifiable so as to retain the trust and ensure that consumers adhere to the rules [Delmas and Burbano \(2011\)](#). Due to the increased environmental awareness of people in societies such as India, and more stringent laws against plastic waste, people are finding it increasingly important to encourage sustainability through food packaging.

According to the literature, it is important to incorporate eco-materials and sustainability indicators to food packaging in an easily seen, believable, and context-sensible manner. One of the ways to combine health, ethics, and environmental considerations is eco-friendly packaging of vegetarian food to kids. However, additional qualitative

studies are necessary to comprehend the connection between the indicators of visual sustainability, child appeal and the decision making of parents especially in culturally diverse markets that change swiftly.

3. METHODOLOGY

This study employs a qualitative research design based on visual semiotic analysis in this analysis to study communicative roles of package design of the vegetarian food products targeted at children. Such symbolic, contextual and interpretive aspects of visual communication cannot be well measured by quantitative tools and can be better analyzed using qualitative methods [Creswell and Poth \(2018\)](#). The visual semiotics permits the systematic decoding of the signs and symbolic representations and design elements used in packaging so that the researchers could analyze the meaning formation and delivery of safety, nutrition, and sustainability [Kress and Van Leeuwen \(2021\)](#).

The visual semiotic analysis is particularly applicable to the food packaging of children because children and their parents tend to make hasty conclusions based on non-verbal messages, including color, imagery, and typeface to determine the suitability of a product [Heller et al. \(2019\)](#). It is the type that allows you to take a close look at how visual objects can be utilized in order to convey the information that will be required by the parents in a manner that should be enriched by the emotional bond that the children will need.

Picking a Product: A purposive sampling approach was used to select five Indian vegetarian packed food brands with a more focus on children. Purposive sampling should be used in qualitative studies where the instances will be chosen on the basis of their relevance, informational depth, and the capacity to explain the phenomenon under study [Patton \(2015\)](#). The selected products met three preconditions: They had a large Indian market share, they were overtly or covertly aimed at children and their packaging was visually complicated enough to warrant the application of semiotic analysis.

The research investigated the subsequent products:

- 1) Haldiram's Soan Papdi for Kids
- 2) Bingo! Vegetarian Tedhe Medhe Corn Snacks
- 3) NutriKid Multigrain Rusk
- 4) Happy Hour Fruit Bars (Apple and Carrot)
- 5) Millet Noodles for Kids

These foods belong to a large number of categories such as snacks, baked goods, candy, and ready to cook meals. It is now possible to compare various types of packaging. These are only examples of product names but precaution was observed to ensure that all names are in accordance with the common rules of vegetarian labeling and child friendly branding, which are prevalent in India.

Data Collection: We acquired the information through an organized process of capturing images of product package in actual outlets such as supermarkets or other local grocery stores. To ensure that every part of the visual and informational detail was captured, high-resolution images of front, back, and side panels of each package were taken. One of the famous and promising methods to study design and communication is the collection of visual data. Things can be seen and seen again and in high detail [Rose \(2016\)](#).

The analysis focused on the following visual components:

- Color palettes and their emotional and symbolic associations
- Typography, including font style, size, and hierarchy
- Pictures and characters, like cartoons, mascots, or pictures of food
- Safety and nutrition icons that include health, cleanliness, or fortification statements
- Eco-material cues, such as recycling symbols, promises that something can be composted, and textures that look like they come from nature

Data Analysis: Thematic visual analysis was employed in the analysis of the obtained visual data; it incorporated the principles of semiotic analysis with inductive coding [Braun and Clarke \(2006\)](#). At first, every visual sign and symbol in the packaging was examined individually to identify the most significant ones. Then these signs were clustered into categories that were determined by what they represented and what they were supposed to resemble. Through the

repetitive patterns of comparison, new patterns were found and identified into three broad categories to analyze: child attraction, parental trust and sustainability communication. It was possible to discover patterns and differences between products through such an analytical approach, demonstrating that some visual strategies may assist kids to interpret the meaning of vegetarian food packaging. Thematic aggregation improved the rigor of analysis and the provision of identical interpretations across different contexts.

4. FINDINGS AND ANALYSIS

This section discusses the results of qualitative visual semiotic analysis of five Indian vegetarian children food. The researchers examine the possibilities of communicating the attractiveness of kids, trustworthiness of parents, and responsibility using colour, typeface, pictures, nutrition cues, and sustainability indicators to build the visual message. The results show that design strategies have similarities and differences in different types of the products.

Colour as a Twofold Signal of Danger and Desire: Colour was the most significant visual aspect in all the five items. It was a means of attracting the attention of the kids and to the parents, it was an indication that their kids were healthy and safe. A great deal of saturated primary colours, particularly yellow, red and blue, served to make everything fun, exciting and energetic. This agrees with our existing knowledge regarding the way children react to very bright colours. For example, Bingo! The snacks were manufactured in bright red and yellow blocks by Tedhe Medhe Corn Snacks to resemble fun and indulgent which increased their attractiveness to the young consumers. NutriKid Multigrain Rusk and Manna Kids Millet Noodles, on the other hand, were more about health and nutrition and used softer, more natural colours. People thought that soft greens, muted oranges, and natural browns were signs of being a pure, fresh, and healthy vegetarian. These findings support previous research suggesting that green and blue hues are culturally associated with cleanliness, safety, and nutritional quality in food packaging [Martin and Singh \(2023\)](#).

Typography and Information Hierarchy: Typography was very important for making both kids and parents happy. There was a clear typographic hierarchy on all of the items that separated fun marketing from factual nutritional information. Brand names and product names were always written in big, round, and stylized fonts to keep kids interested. However, the nutrition claims and ingredient lists were written in smaller, easy-to-read sans-serif fonts so that parents could read them more easily. For instance, the main part of the text for Manna Kids Millet Noodles was in a bouncy, kid-friendly font, and the lists of ingredients and health claims were in a simple, structured font. This visual separation made it easier to see that emotional appeal and informational credibility are two different things, which made it less likely that people would get confused.

Illustrations and Visual Proof of Vegetarian Identity: Illustrations evolved into powerful semiotic tools that enabled the conveyance of emotional and informational meanings. Many of the items had friendly characters, fruits with smiles on them, and animated pictures of the ingredients that made them seem more likeable to kids. Parents felt better about the ingredients when they saw realistic pictures of grains, fruits, and vegetables that showed the food was vegetarian. The colourful fruit pictures on Happy Hour Fruit Bars went well with the colour scheme to show how fresh and sweet they were. The nutritional fortification was made better by adding small vitamin icons. These kinds of pairings helped pictures do more than just look good; they also helped people trust them.

Nutrition Communication through Visual Cues: Icons, callouts, and infographics were used to give most of the nutrition information. Claims like "High Fiber," "No Added Preservatives," and "Iron Rich" stood out more when they were on panels with different colours. Parents seemed to put these cues first because they made hard-to-understand nutritional information into simple pictures. NutriKid Multigrain Rusk did a great job of communicating nutrition by putting different health indicators in a sidebar. This helped organize the information visually and made the product seem more trustworthy.

Sustainability and Eco-Material Signals: The Manna Kids Millet Noodles were the only ones with clear signs of eco-friendly materials, such as earthy textures and a mark for recyclable packaging. Some items had recycling icons, but they weren't as easy to see and weren't as important as the branding features. Because sustainability markers aren't very clear, there is a missed chance to link child nutrition with being good to the environment.

[Table 1](#) A summary of the visual analysis for each product

Table 1

Table 1 Product-Wise Visual Analysis Summary					
Product	Color	Typography Style	Illustration Focus	Nutrition Cues	Sustainability Signals
Soan Papdi Kids	Bright		Festive motifs		
	yellow/orange	Bold, playful		Minimal	None

The results shows that Indian vegetarian food packaging for kids uses visual elements in a smart way to make the food look appealing, trustworthy, and important. On the other hand, sustainability is still clearly being pushed to the side. This shows that future packaging design needs to do a better job of integrating eco-communication.

5. DISCUSSION

This study was aimed at exploring the role of the visual elements in the child-oriented vegetarian food package as communicative messages that influence the appeal of children, parental trust, and environmental consciousness. Based on a qualitative visual semiotic approach, the results complement the current theories of the communication of packing, consumer perception and the marketing of child-oriented foods.

Child Engagement and Visual Semiotics: The visual semiotic theory states that the packaging elements of the items we viewed were sign systems and that did not only present functional information [Kress and Van Leeuwen \(2021\)](#). The high rate of bright primary colors like red, yellow, and blue can be explained by the previous studies that have shown that these bright colors attract children both by their cognitive and emotional appeal because of the associations with play, excitement, and immediacy [Heller et al. \(2019\)](#). Theoretically, these colors serve as emotive clues, which make individuals experience things rather than think about them. And this further strengthens the argument that this packaging of children food is mainly sensorial and symbolic rather than informational.

Dual-Audience Communication and Information Hierarchy: The findings are clear proofs of the dual-audience theory of children food packaging, as it argues that packaging should be attractive to both parents as decision-makers and children as influencers [Ares et al. \(2021\)](#). There was a great deal of typography involved in this equilibrium. Playful, rounder typefaces to kids were communicative signs whereas the parents had structured sans-serif fonts that communicated that information received was clear and reliable. This typographic division resembles the information processing theory that states that adults are able to comprehend and retain things more effectively when they are organized into a visual hierarchy [Peters et al. \(2020\)](#).

Illustrations as Trust-Building Mechanisms: Symbolically, they engaged the kids, and they provided the parents with an assurance that their children are secure. Friendly characters helped people emotionally relate to them, whereas graphics relying on ingredients served as indexical signs revealing what the food was composed of in seconds and whether it was vegetarian. The result is in line with previous research, which demonstrates that visible ingredients on the food raise it to appear fresher and more believable [Nguyen and Jha \(2024\)](#). Visual evidence of this is necessary especially in vegetarian food communications where there are still parental fears that their food might be insufficient in protein and that they are getting enough vitamins.

Communication about Nutrition and Heuristic Processing: The heuristic decision-making theory suggests that people use simplistic visual information as opposed to reading a lot of text when they are pressed in time [Campos et al. \(2018\)](#). That is why nutrition icons and callouts are so famous. The labels, such as the icons of High Fiber, No Preservatives indicate that the labels are shifting off of the telling people what to do, and to the explaining what the food is, and why it is good to them. This proves the concept that the visual food signs make the parents trust their children without necessarily requiring to think too much.

Sustainability as an Under-Communicated Value: The concept of sustainability is conceptually connected with vegetarianism and ethical consumption, but the results also indicate a poor visual image of eco-material principles. Signaling theory suggests that the cues of sustainability lacked sufficient prominence to act as a reliable signal of trust [Delmas and Burbano \(2011\)](#). This is synonymous to a missed chance to bring environmental responsibility on the wider discussion of child health and ethical consumption, especially in the Indian context whereby the concern of sustainability is increasing.

Table 2

Table 2 Theoretical Mapping of Visual Elements		
Visual Element	Theoretical Lens	Communicative Function
	Visual semiotics; affect theory	Emotional attraction, safety cues
Color	Information processing theory	Dual audience
Typography		communication
	Semiotic symbolism; trust theory	Engagement and ingredient authenticity
Illustrations		Simplified nutrition evaluation
Nutrition icons	Heuristic decision-making	

Table 3

Table 3 Visual Elements and Stakeholder Interpretation		
Visual Feature	Child Interpretation	Parental Interpretation
Bright colors	Fun, excitement	Energy, indulgence
Pastel/earth tones	Calm familiarity	Health, safety

6. DESIGN IMPLICATIONS

The results of the present study provide the extensive design based knowledge on the creation of child-focused vegetarian food packaging in India. This kind of packaging must retain the interest in the kids and provide a parent with information and reassurances. In order to do this, the designers must adhere to the principles of ethical marketing, visual art, and nutritional integrity. In packaging in this category, one needs to make it attractive, provide clear information and demonstrate that it is eco-friendly.

Strategic Use of Color: People ought to consider the selection of colors as an intentional method of speaking, rather than a method of making things look good. Bright colors such as yellow, red, and orange are very good in attracting the attention of the kids and letting them know that they are alive and in good mood. Parents may suspect that their children are pretending or are overindulging in case they apply excessive bright colors. To alleviate this anxiety, designers might resort to bright colors to demonstrate safety, hygiene, and nutritional value [Martin and Singh \(2023\)](#). They would also be able to utilize natural and calming colors such as greens, blues and the earthly neutrals. These layers and this color scheme make the packaging appearance good to kids and make parents feel like this is a safe and healthy one.

Typography and Information Hierarchy: The use of typography is quite significant in assisting children and adults in communicating with each other and organizing things. According to [Heller et al. \(2019\)](#), brand and product names should have playful, round, and expressive fonts since these are the fonts that the children will like to see and will make them recall the brand name. Parents should also be able to read and comprehend the nutrition and ingredient information therefore it should be written in simple clear and standard fonts of sans-serif. According to [Peters et al. \(2020\)](#), a typographic hierarchy can be easily established with the help of size, weight, and spacing to facilitate finding information and reduce the workload on the brain.

Responsible Use of Illustrations: Teaching and fun should be taught and done with pictures. When there are friendly characters, mascots, and fun pictures, kids can feel closer to a product and feel much more comfortable with it. Such images still should be properly put across to ensure that they do not portray health benefits as better than they are or falsely claim to be healthy. It is obvious that the food is vegetarian because of depicting realistic photos of ingredients such as grains, fruits, or vegetables [Nguyen and Jha \(2024\)](#). Designers must ensure that graphics depict what the product is composed of and the quantity of the same that is likely to be used to adhere to the ethical communication rules.

Enhancing Nutrition Communication: Speaking about nutrition, the most significant point is to be able to express it and ensure that everyone comprehends it. Complex nutritional data can be simplified with the help of the standard icons, color-coded callouts, and collected visual signs. This will assist the parents in making fast and intelligent choices [Campos](#)

et al. (2018). In order not to get into trouble and be in the law, designers are to ensure that nutritional claims are not identical to advertising. Such visual organization involves the use of heuristic decision-making that allows caregivers to make a judgement about whether a product is right or not without necessarily having to think too hard about it.

Integrating Sustainability and Eco-Material Cues: Sustainability is to be viewed as a core aspect of design, as opposed to a peripheral feature. Recyclable or compostable materials symbolism, tactile information about materials, such as the appearance of kraft paper or matte finish, can positively demonstrate that you are interested in the environment [Kumar and Ghosh \(2022\)](#). Research indicates that an increasing proportion of parents are associating responsible packaging with safety and moral brand ethics [Magnier and Schoormans \(2015\)](#). Evidence of sustainability that can be easily identified and verified can also be used to defuse any fears of greenwashing and make a business more reliable.

Contextual Relevance for the Indian Market: Children oriented food packaging would assist in uniting health, ethics and sustainability to a single visual story in India where individuals are becoming environmental conscious and vegetarianism is culturally accepted. The package solution designers must take into account the cultural signs, literacy level, and what the law required to have in the package solutions. Amalgamating the concepts of visual art and child psychology, parental trust and even the factors which are environmentally responsible, packaging can be a full-scale communication tool that is capable of enabling people to make healthier and environmental friendly food choices.

7. CONCLUSION

This research was conducted to examine visual packaging characteristics as communicative tools in children vegetarian food items in India with particular emphasis on safety information, nutritional information, and environmental sustainability information. Using visual semiotic analysis of five Indian vegetarian food packages qualitatively, the study demonstrates that color, type, and image are important determinants of the degree of appeal, parental trust and moral attitude of packaged foods to children. The findings support the growing body of knowledge in the packaging and consumer behavior of the assertion that visual design is not just beautiful but highly influential in food-related decision-making [Heller et al. \(2019\)](#), [Kress and Van Leeuwen \(2021\)](#). The research demonstrates that the most immediate and emotionally charged visual stimuli is the color. The employees use bright and saturated colors to attract attention and encourage kids to play, whereas the less saturated but more pastel and earthy colors make parents feel real, healthy and receiving real vegetarian food. The duality of color is aligned with emotive and symbolic theories of visual perception, which suggests that packaging can successfully balance between attracting children and reassuring parents in case of an appropriate combination of color techniques [Martin and Singh \(2023\)](#). Typography is useful in maintaining this balance as it is difficult to distinguish between information that is true and branding that is creative. This simplifies the concept of nutrition [Peters et al. \(2020\)](#).

Examples are very crucial when discussing vegetarian eating. That a picture of the ingredients was taken as a visual confirmation of what the product was composed of, and the fact that people felt more connected to the product because it had friendly characters, and this helped in developing the sense of trust and openness. The findings are based on the prior studies of visual persuasion demonstrating that images can equally and ethically substantiate and not misrepresent information on nutrition and vegetarianism [Nguyen and Jha \(2024\)](#). Communication of nutrition through icons and callouts was found to support the process of making heuristic decisions and provide parents with quick and effective access to the key health characteristics [Campos et al. \(2018\)](#).

Although vegetarianism and sustainability have a strong connection, the research finds a significant distinction in the visual presentation of eco-materials. Sustainability cues were not used consistently and would be physically inferior to branding elements. In the context of the signaling theory, this limits the effectiveness of sustainability message and is an indication of a missed chance to include environmental responsibility in the stories of food packaging among children [Delmas and Burbano \(2011\)](#), [Kumar and Ghosh \(2022\)](#).

The paper contributes to knowledge in three aspects. First, it enhances our theoretical knowledge of visual semiotics of food packaging among children in a non-Western vegetarian-dominant environment. Second, it provides food manufacturers, pack designers and legislators interested in facilitating clear, sincere and sustainable food communication with useful design advice. Third, it demonstrates the significance of considering how children think, the level of trust that the parents have in children, and their environmental awareness in the process of selecting the packaging.

Future studies ought to expand this qualitative model with quantitative and experimental designs assessing the effects of particular visual effects on food choices of children, parental buying behavior, and nutritional literacy. Longitudinal studies would also be useful in investigating the effects of recurrent exposure to responsible packaging on dietary habits in the long term. Healthy and sustainable packaging can help people eat better and more responsible as the issue of child nutrition, food safety, and environmental sustainability continues to grow.

CONFLICT OF INTERESTS

None.

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