

How Clear Are Food Labels? Understanding Consumer Awareness under the Food Safety and Standards Act, 2006

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Abstract

Food safety and consumer rights are inalienable, and consumers have right to quality and wholesome food and accurately labelled food helps them to make informed choices. In India, the Food Safety & Standard Act 2006 plays an important role to safeguard consumer's interest and welfare that sets comprehensive standards for manufacture, sale, input and labelling of food products. The Act further strengthens consumer rights by providing a legal framework in labelling the food & prevent harmful practices like food adulteration & misleading claims. This Article explores how the consumers understand the food labels based on an empirical study conducted with 120 packaged food consumers in Kolkata. Using structured questionnaires, the study identifies key gaps in consumer awareness, comprehension of nutritional information, and trust in advertising claims. The study was conducted using surveys through questionnaires and the study identifies key gaps in consumer awareness and regulatory compliances. The findings reveal that many customers failed to interpret nutritional and safety information provided on the food packages due to inadequate awareness. Regulatory shortfalls are also identified as the priority areas for improvements in food safety management.

Keywords – Food Safety, Consumer, Rights, labelling declaration, Nutritional information, Misleading claims, Inspection

INTRODUCTION

Food is one of the most basic necessities of life. Over the centuries, how we produce, consume, and think about food has changed drastically. In earlier times, people's food habits were shaped by what was available locally and what their community traditionally ate. But concerns around the safety and purity of food aren't new they go back a long way. Ancient Indian texts like the Manusmriti (Manu 2005) mention food adulteration and the need to avoid it. Similar concerns were reflected in old Chinese, Egyptian, and Roman texts. Even in medieval Europe, trade guilds came up to regulate food quality and stop sellers from cheating customers.

In India, formal food regulation began with the Prevention of Food Adulteration Act in 1954, which aimed to check food tampering and ensure public health. That law remained in force for decades until the Food Safety and Standards Act (FSSA), 2006 came into effect. The 2006 Act marked a shift in how food safety was approached it brought together various rules under one umbrella and focused more on science, transparency, and protecting consumer rights.

Today, in a world where people are increasingly health conscious, food labels play a crucial role. When we pick up a packaged product, we look at the expiry date, ingredients, nutrition facts, or sometimes claims like "natural," "zero fat," or "high protein." These labels help us decide whether to buy the product or at least, they're supposed to. But do they really help? And more importantly, do people understand them?

Despite the rules laid out by FSSAI, many consumers still get misled by flashy packaging or vague claims. While the law requires that labels be clear and honest, there's often a gap between what's written on the pack and what the consumer takes away from it.

This study looks at how real people engage with food labels. Do they read them? What catches their attention? Have they ever felt misled by a product after trusting the label? To answer these questions, a survey was conducted in Kolkata using a structured questionnaire. The idea was to understand not just what the rules say, but how people experience labels in everyday life and what that says about the effectiveness of our food safety laws., and aims to gather real world insights on consumer interpret, trust on the food labels.

LITERATURE REVIEW- LEGAL AND REGULATORY FRAMEWORK

The Act provides a regulatory framework to ensure the safety and proper labelling of food products. It mandates science-based food safety standards, guidelines, and codes of practice for both domestically produced and imported food items. The Act also governs licensing, registration, and certification requirements for food businesses to ensure compliance.

Historically, India's food regulations were fragmented, with various overlapping laws administered by different ministries, resulting in regulatory inefficiencies. The FSSA addressed these challenges by consolidating food safety regulations under a unified legal framework, replacing older laws such as the Prevention of Food Adulteration Act, 1954, and streamlining enforcement mechanisms.

The Food Safety and Standards Authority of India (FSSAI), along with national agencies like the Bureau of Indian Standards and the National Institute of Nutrition, plays a pivotal role in setting food standards aligned with global benchmarks such as Codex Alimentarius and ISO guidelines. This alignment enhances consumer confidence in food safety and promotes international trade.

Packaging and labelling regulations under the FSSA aim to ensure transparency, prevent deceptive practices, and empower consumers to make informed choices. The mandatory display of product information, including ingredients, nutritional values, expiry dates, and allergen declarations, helps consumers understand the nature and quality of food products.

Empirical studies have shown that food labels significantly influence consumer behaviour, encouraging healthier food choices and improving autonomy (De Morais Sato et al. 2019). However, research also highlights gaps in consumer understanding, especially regarding complex nutritional information, underlining the need for more accessible and consumer-friendly labelling practices.

Food Safety and Consumer

Food Safety and Standards Act 2006 (FSSA) plays a significant role in safeguarding consumer rights, as it sets out the legal framework for protecting the health and welfare of the consumers. It mandates that food products are not adulterated or misbranded, and that they are free from harmful contaminants, such as pesticides, antibiotics, and heavy metals. As per the Section 3 (1) (o) of the Act, (FSSA 2006, sec. 3(1)(o)) a consumer "means persons and families purchasing and receiving food in order to meet their personal needs". The following ways and means the laws ensures the safety and welfare of the consumers. The FSSA empowers consumers not only with access to safe food but also with the right to information, right to redress and right to participate in regulatory governance. The Act creates legal regime that positions consumers at the centre of India's Food Safety.

Labelling requirements:

Food Safety and Standards Regulations (FSSAI 2011, reg. 5.3.1) mandate that packaged food items must have a label and necessary information in accordance with the regulations. This guarantees the consumer access to sufficient and accessible information to handle, store and prepare the packaged food products.

Further, every package shall contain a lot or batch number so that it can be easily traced and recalled if needed. The packaged food products must be labelled accurately with information such as the name of the product, its ingredients, nutritional information, and the manufacturing and use by date / expiry date. This helps consumers make informed choices about the food products they buy. The contents of the display label shall be clear, prominent, and legible to the consumer under normal conditions of purchase and use. If any packaged food contains compounded ingredients, it shall also declare the composition in percentage of the weight. Further, unauthorised use of any word or mark that is imitation of the quality and nature of the product is prohibited as it will cause confusion and mislead consumers. In a study conducted in United States it is found that more consumers thought a food could be deemed healthy based solely on the foods' nutritional content and they determined looking at individual foods packaging labels (Lusk 2019) It is observed that consumer friendly labelling generates awareness among consumers, and promote salt reduction by processed food industry (Gupta et al. 2018) Packaging and labelling of food products play a significant role in attracting consumer attention and also plays role in communicating what contains inside the packet and leading the consumers to make a purchasing decision. The Food Safety and Standard (Packaging and Display) Regulations are notified by FSSAI to ensure transparency and to prevent deceive to practices so that the consumers can make an effective and informed decision. The Object of this regulation is to not only ensure quality and safety but also to empower the customers. These regulations mandates display of information such as name of the product, list of ingredients, nutritional values, date of manufacturing / date of packing, date of expiry or best before date, batch number, veg logo / non veg logo, allergen declaration and usage instructions.

Empirical research provides evidence that labelling norms has significant impact on consumers. According to (De Morais Sato et al. 2019) food labels use has expected benefits to the consumers and it promotes healthier food choices and improves consumer autonomy in making healthier food choices.

According to a study (Vemula et al. 2014) it is found that 90% of the consumers read food labels, 81% of the consumers primarily focus on the date of expiry or best before dates. About 33% of the consumers examine nutritional information and ingredients. The nutritional information and ingredients are technical in nature

and most of the consumers lack knowledge on these technical terms. The study highlighted the labelling should be more consumer friendly to enhance understanding and making informed choices by the consumers.

Similarly, in another study (Vanaja and Vetrivel 2017) on Status of Food Labelling in Selected Supermarkets of Puducherry revealed that 92.2% of consumers were aware of food labels, but only 76.5% used them regularly. Branded products had a higher compliance rate (70.2%) compared to local or unbranded ones (62.8%), suggesting that stricter enforcement and standardization are required across the market.

In another study (Kumar et al. 2024) it was found that Front-of-pack labelling (FOPL) has gained prominence globally as a tool for quick consumer reference. It is found that summary labels like Health Star Ratings and Warning Symbols were more effective in guiding consumers than technical formats such as Guideline Daily Amounts (GDA) or Multiple Traffic Lights. The interpretative nature of these formats allows consumers to quickly assess the health value of a product, especially in lower literacy or multilingual contexts.

Protection from Misbranding and Misleading Claims:

Advertising is a powerful tool that can influence consumer preferences and perceptions. In the absence of regulation, the food business operators are at liberty in making claims which may exaggerating the benefits of food. These business practices may violate consumer rights and interests.

Food companies adopt various means of marketing to promote the sale of the food, and they often make claims with regard to health benefits or the nature of the ingredients. In some cases, false and deceptive claims are made disregarding the impact of the same on consumers, and in most cases, genuine claims are made. However, the average consumer fails to distinguish the false and genuine claims and is always confused about the quality of the food. In cases of violations, it can harm public health, give unfair profits to food businesses, and deceive consumers into buying products without complete information. The food authorities have considered these situations, and to counter them, the Food Safety and Standards (Advertising and Claims) Regulations, 2018, are framed, which address all kinds of situations and lay down guidelines enabling the food operators to make different kinds of claims like health, nutritional, functional reduction of disease risk, and non-additional claims. It further lays down the general principles for making claims like Claims must be truthful, unambiguous, meaningful, not misleading, and help consumers comprehend the information.

The regulations also prohibit certain fancy or adjective brand names that mislead the consumer into treating the products as traditional, authentic, or organic. All advertisements must not undermine a healthy lifestyle.

The Food Safety and Standards (Advertising and Claims) Regulation 2018 were introduced to regulate the manner in which food businesses makes claims related to health, nutritional and functional claims. The object of the regulation is to prevent misleading and exaggerated claims that deceive consumers regarding the nature and quality of food products. It also mandates claims to be on evidence based, truthful and not misrepresentative. There are restrictions in using terms like natural, authentic or organic. The regulations facilitate the consumers in interpreting food labels and to make quick and informed decision. The claims related to health shall be supported by scientific evidence.

As marketing and advertisements continuously evolving especially in the digital and influencer driven promotions, there is a need for a continuous monitoring and to educate the consumers. These regulations essential to protect consumers from misleading advertisements and also to maintain public health integrity into foster informed choices.

METHODOLOGY

This study takes a practical, real-world approach to understand how consumers in Kolkata interact with food labels and whether the current labelling practices meet their needs and expectations. The core focus is to explore how people interpret the information on packaged food products whether they look at expiry dates, nutritional values, price, or claims made by brands and to what extent they trust that information.

To collect relevant insights, a structured questionnaire with 15 focused questions was developed. The survey explored everyday consumer habits, such as how often people read food labels, what specific details they pay attention to, and whether they've ever felt misled by product labels or advertising. We also asked what additional information they believe should be included on food packages to help them make better choices.

The target group for this study included adults living in Kolkata who regularly buy packaged food for themselves or their families. Given the scope and resources, we opted for a non-probability sampling method, using a mix of purposive and convenience sampling. Participants were selected based on availability, ease of access, and their willingness to share their experiences.

This study on consumer behaviour towards food labelling and advertising claims is based on an empirical survey conducted with 120 respondents from Kolkata. Kolkata, the seventh most populous city in India, is home to approximately 4.5 million residents. Given the scale and diversity of the city, conducting a statistically representative large-scale survey was beyond the practical scope of this research. Instead, the study focused on consumers who regularly purchase packaged food products—a group directly impacted by food labelling and marketing practices.

For behaviour-based research of this nature, surveys with 100 to 150 respondents are widely considered acceptable for city-level exploratory studies (Adams 2024). The sample was designed to capture a cross-section of diverse demographic groups, including variations in age, education, and occupation. The methodology adopted was **non-probability sampling**, using a combination of **purposive and convenience sampling**. Participants were selected based on ease of access, availability, and their willingness to participate in the study.

It is important to note that these results are **indicative** and are not intended to generalise the behaviour of the entire population of Kolkata. However, they provide meaningful exploratory insights into consumer awareness, understanding of food labels, and perceptions of advertising claims.

Limitation

The primary objective of this research is to identify patterns and trends among consumers rather than to project a national or fully representative conclusion.

KEY FINDINGS AND DISCUSSION

1. Label Reading Behaviour and Consumer Awareness

The survey revealed that **41.4%** of respondents reported "always" reading food labels when purchasing packaged food products, while **27.3%** stated they "often" do so. However, nearly **30%** admitted to reading labels only "sometimes," "rarely," or "never." This reflects a significant behavioural gap, despite legal mandates under the Food Safety and Standards (Packaging and Labelling) Regulations, 2020, (FSSAI 2020), which require clear and prominent display of essential information on food packages.

Among those who regularly read labels, the most commonly checked details were the expiry or best-before date, followed by nutritional information and price. These patterns are consistent with previous studies (De Morais Sato et al. 2019; Gupta et al. 2018), which highlight that expiry dates often receive consumer attention, while complex nutritional information is frequently overlooked. As shown in Figure 1, **41.4%** respondents reported that they "always" read food labels and **27.3%** stated they "often" do so, reflecting a substantial level of engagement. However, a considerable portion of respondents (around **30%**) still admitted to reading labels only "sometimes", "rarely" or "never", indicating a behavioural gap.

2. Demographic Influence on Label Reading

Age and Label Reading

The data indicates that label reading frequency tends to increase with age. Consumers in the **35 to 59** age group exhibited the highest rates of "always" or "often" reading food labels, while younger respondents (especially those below 25) were more likely to read labels "sometimes" or "rarely." This suggests that greater health consciousness and purchasing experience may drive more consistent engagement with label information among older consumers.

Education Level and Label Reading

Educational attainment also plays a significant role. Respondents with **post-graduate qualifications** reported the highest proportion of consistent label reading, followed by graduates. Conversely, those with lower educational backgrounds displayed lower engagement with label information or expressed uncertainty in understanding the same. These findings reinforce existing research highlighting that education enhances consumers' ability to comprehend and effectively use food labelling (De Morais Sato et al. 2019). As illustrated in **Figure 2**, while **96.9%** of respondents reported checking the expiry / best before date and nearly **80%** noted the price, a lower percentage checked nutritional information (**46.1%**) or health/nutrition claims (**30.5%**). These findings underscore the gap between basic and technical understanding of labels, particularly among respondents with lower education levels.

Educational level also plays a critical role in influencing label reading behaviour. Respondents with postgraduate qualifications showed the highest levels of engagement with food labels, particularly with detailed aspects such as nutritional information, ingredient lists, and health claims. This trend supports the notion that higher education enhances consumer comprehension of technical content on food labels.

Occupation and Label Reading

Occupation-based trends revealed that individuals in **service** or **professional roles** were more likely to "always" read food labels, compared to students or those in miscellaneous occupational categories. Students, despite being actively engaged in education, demonstrated lower rates of consistent label reading, possibly due to limited purchasing responsibility or lower health awareness. Business owners displayed mixed behaviour, with some consistently reading labels while others checked them only occasionally.

3. Confidence in Understanding Food Labels

While a portion of consumers claimed to read food labels, only 22.8% expressed being "very confident" in understanding the information provided. Many respondents rated their confidence as "somewhat confident" or "neutral." This underscores limited consumer literacy concerning technical or nutritional terms, raising questions about the accessibility and clarity of food labelling, despite regulatory standards.

4. Misleading Labels and Advertising Claims

The survey revealed that 23.6% of respondents had felt misled by food label information at least once. Additionally, as shown in Figure 3, over 35% admitted to being misled or disappointed after purchasing products based on advertising claims such as "natural," "boosts immunity," or "clinically proven."

These findings align with regulatory concerns and the judicial scrutiny highlighted in *Indian Medical Association v. Union of India* (2024), where misleading health-related claims were declared a significant threat to public health and consumer welfare.

Interestingly, although over 70% of respondents admitted to purchasing products influenced by advertising claims, only a small fraction verified these claims through nutritional panels or independent research, indicating a behavioural gap between perceived product benefits and scientific scrutiny.

5. Legal Awareness and Regulatory Support

While awareness of the FSSAI's **vegetarian/non-vegetarian logo** was relatively high, understanding of more complex legal rights such as the right to have food analysed under Section 40 of the FSSA was considerably low. Few respondents had exercised or considered exercising this right, exposing a gap in consumer empowerment despite available legal mechanisms.

However, as illustrated in Figure 4, a significant portion of respondents (over 80%) showed overwhelming support for stricter food labelling regulations and enhanced enforcement to prevent misleading practices. This reflects consumer demand for greater transparency, accountability, and regulatory vigilance from food business operators.

Regulatory Implications and Enforcement Gaps

Despite India's comprehensive legal framework for food safety, including the FSSA, 2006, the Labelling and Display Regulations, 2020, and the Advertising and Claims Regulations, 2018 (FSSA 2018), practical enforcement remains inconsistent and insufficient. As evident in figure 5, over 85.2% of respondents expressed support for stricter food labelling regulations. The survey highlights critical gaps in:

- a) Consumer comprehension of technical label content
- b) Awareness of legal rights and avenues for redress
- c) Protection against misleading advertisements and exaggerated claims

This reflects a regulatory blind spot, where existing standards may not be accessible to consumers with lower literacy or health awareness. To align with **Section 16 of the FSSA**, which mandates promoting public awareness, regulators should:

- a) Simplify labels using **Front-of-Pack Labelling (FOPL)** and pictorial symbols
- b) Strengthen targeted education campaigns, especially for vulnerable or younger groups
- c) Incorporate digital tools, such as QR codes linked to explanatory content

Additionally, the high proportion of consumers misled by advertising reinforces the need for:

- a) Stricter monitoring of food advertisements by FSSAI and state authorities
- b) Mandatory scientific substantiation of health, functional, and nutritional claims
- c) Consumer-friendly mechanisms to report misleading practices

The Supreme Court's intervention in the **Patanjali misleading claims case** underscores the judiciary's growing focus on holding food businesses accountable for deceptive practices that compromise consumer health and trust.

CONCLUSION

This study highlights important gaps in consumer understanding of food labels and advertising claims, despite having comprehensive food safety regulations in place. The findings show that while many consumers regularly read labels, technical information like nutritional content often remains unclear. Advertising claims such as "natural" or "boosts immunity" continue to influence purchase decisions, sometimes misleading consumers.

Awareness of specific legal rights, such as the right to have food analysed, remains low. At the same time, there is strong public demand for clearer labelling, stricter regulations, and better enforcement to prevent misleading practices.

The Food Safety and Standards Act, 2006, has undoubtedly strengthened consumer protection by consolidating food laws, introducing food recall mechanisms, regulating claims, and promoting transparency. However, challenges remain. Issues like food contamination at the production level and gaps in enforcement still impact consumer safety.

A strong legal framework alone is not enough. Continued efforts are needed to simplify labels, increase consumer education, and improve regulatory capacity. Empowering consumers with clear information, holding food businesses accountable, and promoting public awareness are key steps to ensuring safe, high-quality food for all.

Declarations

Funding Declaration

No funding was received for conducting this study.

Human Ethics and Consent to Participate declarations:

Not applicable.

Data Consent

Not applicable.

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