

# A Study on Food Safety and its Standards in India

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**Abstract - In each and every nation, the food industry is subject to a plethora of elaborate rules and regulations. Trade restrictions may be imposed as a result of variations in national food control systems, which include monitoring and sampling, detection and analytical procedures, as well as the implementation of rules and regulations for food safety. There have been instances in which nations have set standards that failed to be founded on scientific principles and, in reality, were nothing more than non-tariff obstacles to trade. The purpose of this research is to investigate the food safety and standards of India in general. Since the beginning of the investigation, a proxy index for food safety requirements has been taken into consideration, and it has been demonstrated that it is significant. According to our findings, India's food safety policy requires more efficient execution in order to conform to the standards of best practice worldwide.**

**Keywords- Food Safety, Standards, India.**

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## 1. INTRODUCTION

The food processing business in India is now considered one of the major sectors in the country and is commonly referred to as a 'sunrise industry'. The agriculture sector has significant potential to boost the economy by establishing extensive processed food manufacturing and food chain facilities, leading to job creation and increased export revenue. Nevertheless, these advantages may solely be attained if the government rigorously implements and upholds food safety regulations. Food safety problems in India have garnered significant attention in recent years. The country's strategy for developing rural areas, which includes increasing agricultural exports to promote rural growth and reduce poverty, is facing challenges due to stricter food safety and sanitary standards, as well as phytosanitary measures (SPS) in potential markets (Bertaud, 2006; Minsitre, 2006). This article examines the regulatory and policy dimensions pertaining to food safety in India.

### • Food Standards and Safety Act of 2006

India's food processing sector is subject to a number of rules pertaining to licensing, sanitation, and other permissions needed to establish and operate a food company. The Prevention of Food Adulteration Act, 1954 (PFA) initially governed food safety in India. The Food Safety and Standards Act, 2006 (FSSA) took the role of the PFA in 2006, nonetheless, as a modification was required. Food-related ministries and departments used to manage several acts and orders, which are now combined under the FSSA.

Eight statutes that were in effect prior to the FSSA's implementation were expressly superseded by it:

- Prevention of Food Adulteration Act
- The 1955 Fruit Products Order
- The 1973 Meat Food Products Order
- Order of 1947 Concerning Vegetable Oil Products (Control)
- The 1998 Edible Oils Packaging Regulation Order
- The 1967 Order for the Control of Solvent Extracted Oil, De-oiled Meal, and Edible Flour
- The 1992 Milk and Milk Products Order
- The 1955 Essential Commodities Act (With regard to food).

The Food Safety and Standards Authority of India will be established to "lay down science based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import, to ensure availability of safe and wholesome food for human consumption," according to the preamble of the FSSA. In order to do this, the Act created the Food Safety and Standards Authority of India (FSSAI), an independent statutory body.

- **India's Food Safety and Standards Authority**

By eliminating multi-level, multi-departmental control and establishing a single chain of command, the FSSAI serves as a single point of reference for all issues pertaining to food safety and standards.

- **The FSSAI's Operations**

The FSSAI has given the FSSAI the following duties to carry out:

- Drafting legislation outlining the rules and regulations pertaining to food-related items and outlining a suitable mechanism for enforcing the different criteria thus announced
- Establishing protocols and standards for the accreditation of certifying organizations that certify food safety management systems for vendors.
- Establishing protocols and standards for laboratory accreditation and accreditation notification
- Offering state and federal governments technical assistance and scientific guidance when drafting laws and regulations that directly or indirectly affect nutrition and food safety.
- Data collection and compilation about food consumption, biological risk incidence and prevalence, food contaminants, food product residues from diverse contaminants, developing risk identification, and implementation of a quick warning system
- Establishing a nationwide information network to enable the public, customers, Panchayats, and other relevant parties to obtain timely, trustworthy, and unbiased information on food safety and other pertinent matters.
- Providing instruction to those who work in the food industry or hope to work in it.
- Participating in the creation of global technical specifications for food and SPS standards
- Increasing public knowledge about food safety and standards.

The Ministry of Health and Family Welfare has administrative jurisdiction over the FSSAI. State food safety authorities assist the work of the FSSAI, whose composition is outlined in the FSSA. The next section discusses the key roles and organizations.

- **The FSSAI's members**

**Food safety commissioner:** By law, each state must choose a commissioner for food safety in order to carry out food safety regulations.

**Food safety officers:** It is required of the food safety commissioners to designate food safety officers for a particular region and give them the responsibility of carrying out Act-mandated duties. The authority granted to food safety officers included gathering and testing samples of food items, confiscating items that seem to be illicit, and examining facilities where food items are produced.

**Food analysts:** Tasked with conducting an analysis on any food sample gathered by the food safety officer or by any buyer of that food product, food analysts are also appointed by the food safety commissioner.

**Designated officer:** One designated officer is required for each district. In addition to having the power to forbid the sale of any food item that contravenes an Act requirement, the person can also grant, cancel, or renew a license for a food company. Additionally, this official might approve the prosecution of any owner of a food business or suggest it to the commissioner of food safety.

**Laboratories:** In order to conduct food sample testing by designated food analyzers, the FSSAI may inform laboratories and research organizations. Based on their certification by the National Certification Board for Testing and Calibration Laboratories, commercial laboratories are also notified by the FSSAI to conduct food safety tests in addition to state laboratories (NABL). Additionally, it has the ability to alert referral laboratories, to which any state-approved or accredited laboratory may send an appeal.

- **Guidelines for Food Safety and Standards, 2011**

On August 5, 2011, six regulations under the FSSAI went into effect, protecting the interests of both customers and food company owners. These rules are the following:

- The 2011 Regulation on Licensing and Registration for Food Safety Standards (FSS)
- The 2011 Packaging and Labeling Standards (FSS) Regulation
- Part I and Part II of the FSS (Food Product Standards and Food Additives) Regulation, 2011.
- The 2011 FSS Regulation (Prohibition and Restriction on Sales)
- The 2011 FSS (Toxins, Substances, and Residues) Regulation

- The 2011 FSS Regulation (Laboratory and Sampling Analysis).
- **Common grading standards in India for food items**

Grading standards, also referred to as AGMARK GRADES in India, cover 213 commodities in the following categories: edible nuts, oil seeds, vegetable oils and fats, pickles, fiber crops, forest produce, livestock, dairy, and poultry products; food grains and by-products; fruit and vegetables; spices and condiments; and edible nuts. Under the Agricultural Produce (G&M) Act 1937, the Directorate of Marketing and Inspection (DMI) of the Ministry of Agriculture and Farmer's Welfare, Government of India, developed and published these standards. Additionally, DMI has created a list of typical adulterants and easy screening procedures to identify them in food.

The packaging bears an AGMARK emblem to indicate the standards. With the exception of blended vegetable oils and fat spreads, trade communities are free to abide by these criteria. A license from DMI is required for traders who want to market their goods with AGMARK certification. The merchants are required by the Act to guarantee the purity of the raw materials, clean processing conditions, and conformity to the grade criteria listed on the packaging. Qualified professionals test the things that traders sell in laboratories. DMI authorities frequently review the laboratory records of the merchants and collect samples from the market to verify that the standards are being met. As a result, DMI keeps an eye on the quality of food goods, as it has done since 1935.

Customers depend on goods with the AGMARK emblem on the packaging to be safe and of high quality. Consumer confidence in AGMARK products is declining, nevertheless, as a result of DMI's insufficient quality control due to a staffing deficit. In order to recover the market share of AGMARK products, merchants who fail to meet the grade criteria should be subject to regular and strict inspections and prompt action. The majority of food products are covered by the AGMARK product line, which would guarantee consumer safety if the program's guidelines were correctly followed. AGMARK's regulatory provisions and standards might benefit from alignment with FSSAI.

## 2. REVIEW OF LITERATURE

**Nair et al. (2021)** Food safety management systems affect worldwide food security, especially in underdeveloped nations. Hazard Analysis and Critical Control Points underpin food safety management systems. This research examined the food safety management systems of a small Indian food industry before and after ISO 22000 and FSVP certification. This firm manually made fried veggie snacks. Direct audits examined these certificates' efficacy. This research developed and used the combined FSVP and ISO 22000 audit checklist. The accreditation increased

food safety system conformance by 97.14% in the firm. Many HACCP implementation non-compliances were detected before certification. Pest management was the lone non-conformity after certification. The integrated FSVP and ISO 22000 audit checklist assessed food quality and safety compliance, certification effectiveness, and the small Indian snack producer's readiness to export to the U.S. and other developed countries. Certification allowed a small Indian food company to fulfill ISO 22000 and FSVP criteria for exporting to the U.S. and other industrialized nations.

**Singh (2020)** The food service business in India is known for its traditional meals and has great growth, employment, and revenue potential. Food safety involves following food regulations to ensure food purity and freshness before consumption. Food safety and standards of Indian authority (FSSAI) and the Ministry of Health and Family Welfare under the Government of India enforce food safety and regulations. The government regulates food safety and accredits certifying agencies. They develop and enforce food safety laws and guidelines. Data on food intake, biological risk, and pollutants are gathered. The above review article analyzes food safety and suggests scientific ways for handling, preparing, and storing food and preventing foodborne infections.

**Reddy et al. (2017)** Food is regulated by intricate rules and regulations in every country. Trade limitations may result from differences in the national food control systems that apply standards and food safety regulations, as well as monitoring and sampling, detection, and analytical methodologies. Occasionally, nations have created standards that are essentially non-tariff trade barriers because they were not grounded in science. In this study, we look at India's requirements for food safety in general and analyze how these standards affect India's agricultural trade flows with other nations. The implications have been evaluated using trade data for vegetables, meat, fisheries, and grains from India for the years 2010–2014. Throughout the investigation, a proxy index for food safety standards was taken into consideration, and it was shown to be significant. It has been determined that for India's food safety policy to align with global best practices, it requires more efficient execution.

**Kaur (2017)** This paper examines the current landscape of health, hygiene, and food safety standards in India, focusing on key challenges and areas for improvement. It explores the regulatory framework established by the Food Safety and Standards Authority of India (FSSAI) and analyzes its effectiveness in ensuring food safety across the country. The study reviews the role of stakeholders such as food businesses, government agencies, and consumers in promoting adherence to standards and discusses the impact of non-compliance on public health. Furthermore, the paper highlights the need for greater awareness and education initiatives to

enhance hygiene practices and mitigate foodborne illnesses. Recommendations are provided for enhancing the implementation of food safety standards, including increased monitoring, capacity building, and collaborative efforts among stakeholders.

### 3. STUDY OBJECTIVES AND METHODOLOGY

Understanding Indian norms and food safety was the main goal of this study. Governments, businesses, and individuals all have a shared responsibility for ensuring food safety. Any public standard-setting procedure that excludes the opinions and contributions of the private sector would be seriously defective. In order to comprehend the food safety regulations in India, we spoke with all the parties engaged in the food value chain. In the selected survey region, we also carried out a field study of women, street food sellers, and contemporary merchants (those engaged in the value chains for meat and vegetables).

- **The goals and methodology were to:**
- A review of the Food Safety Standards Rule (2011) and its content
- Evaluate food safety and standards among street food sellers.
- **Consulted with stakeholders**

**Consumer Association of India:** Preserving the interests of consumers is the goal of this national interest group. Nonetheless, this organization has prioritized food safety concerns more recently. We asked the office bearers what they thought about how the mandatory food safety regulations uphold the interests of the customers.

**Officials of the Food Safety and Standards jurisdiction of India (FSSAI):** The FSSAI is the only body with the jurisdiction to regulate food safety and standards in India. It was established with the adoption of the Food Safety and Standards Rule (2011). In order to better understand the following, we sought to speak with FSSAI officials: the challenges associated with implementing safety regulations; the efficacy of the Act at the local level for improved food safety; and the opportunities to gain knowledge from global food regulation experience.

**Forum for Food Importers:** Another interest organization that has lately brought up concerns regarding importers as a result of the Food Safety and Standards Rule (2011) is the Forum for Food Importers (FFI). We sought advice from the FFI on matters such as: how to resolve challenges faced by importers in adjusting to the updated food safety regulatory framework; how importers employ self-regulatory mechanisms to uphold food safety standards; how to narrow the information gap between exporters and importers in order to minimize consignment rejections; and how to update domestic

regulatory standards to conform to international standards like Codex Alimentarius Commission (Codex) and Hazard Analysis and Critical Control Point (HACCP) standards.

**Forum for Food Exporters:** Due to concerns about food safety, certain Indian export shipments are being turned away from international markets. In order to find strategies to lower these rejections, we conferred with the Forum for Food Exporters.

**India's National Association of Street Vendors:** The poor food safety regulations that India's street sellers adhere to have resulted in serious food-related health issues. These vendors are especially important to low-income households and daily workers, providing them with a significant source of employment and revenue in addition to daily meals. The National Association of Street Vendors of India (NASVI) carried out the street vendor survey.

**Farmer's organizations:** In India, farmers' organizations are the main players in the food value chain. We spoke with the farmer organizations about the following topics: how food safety laws would improve pricing and open up new markets abroad; what measures are required to satisfy international food standards; and how to raise public knowledge of food safety rules.

**Members of the Ministry of Agriculture:** In India, the Ministry of Agriculture is the ultimate authority on all matters pertaining to food production. We spoke with representatives to get the ministry's view on food safety regulations and how they affect farmers' earnings and the agriculture industry.

**Members of the Ministry of Food Processing:** All government programs pertaining to food processing are implemented via the Ministry of Food Processing, which serves as the nodal agency. We spoke with officials about the need for cutting-edge international technology to enhance food safety in food processing because the majority of food safety concerns are related to food processing.

- **Field survey sampling structure and activity plan**

We are employed by the India Council on the "Food Safety and Standards in India" project. As part of that study, we want to know how women, food shops, and street sellers contribute to the Indian population's access to healthy, high-quality food. As a result, we polled the following groups:

Food street vendors households to learn about food safety regulations observed at the household level; and a sample of ten contemporary retailers to investigate the entire food value chain.

**Food preparation and consumption in the house:** Due to inadequate personal or environmental

cleanliness, foodborne illnesses are thought to initially emerge in the private home environment. The World Health Organization (WHO) estimates that between 30 and 40 percent of instances of foodborne illness take place at home. At first, the majority of purchased foods are thought to be safe; nevertheless, in order for them to be safe, they need to be utilized and kept properly. In order to prepare food and avoid foodborne infections, consumers are therefore the last line of defense (Kagan et al., 2002; Redmond and Griffith, 2003). Therefore, we used an interview-based questionnaire to study household food safety knowledge in a sample of 100 women who prepare food for consumption at home. We questioned the women about how they prepared and used food.

**Street Vendors:** For millions of people, street food sellers offer inexpensive, entertaining cuisine. In most developing nations, including India, they are the traditional and native "fast food" establishments. However, because there are so many variables that might impact street food safety, it is challenging to establish how safe it is. Thus, through the study, we made an effort to comprehend how street food sellers contribute to the Indian population's access to wholesome, safe food. The questionnaire, which was distributed to fifty street vendors in every city, included questions on the facilities, work processes, and other aspects of preparing street food, as well as how it is made. The findings will enable us to pinpoint specific issues and gain a deeper understanding of the circumstances facing street sellers. This will enable us to determine whether local and federal authorities should provide these vendors with more assistance and security.

**Private food standards:** According to Henson and Humphreys (2012), PFS are standards created and controlled by non-governmental organizations. These organizations comprise both for-profit and non-profit businesses. They establish standards that fall into one of three categories: collective national standards, collective international standards, or individual company standards. PFS created by non-profit, non-governmental organizations (NGOs) usually focus on social and environmental challenges while redefining ethical and sustainable behaviors. PFS established by the food sector, whether by businesses or trade associations, usually have two main goals in mind: enhancing supply chain efficiency and promoting product differentiation. The queries we aimed to respond to were:

- How well do contemporary stores and street food vendors adhere to PFS?
- What are the several tiers of international food standards (such as PFS and Codex standards)?
- How do PFS promote the implementation of public policy and offer a way to reinforce it?

#### 4. RESULT

The results of the field survey for the homes and street food sellers are compiled in the sections that follow.

A variety of questions about home-cooked food safety and cleanliness were also posed to households. In general, food safety was unknown to 62.7% of the families who responded (Table 1). It is noteworthy that 60.7% of FC families did not know anything about food safety. On the other hand, 41.3% of OBC families knew about food safety at home; the largest proportion of respondents to this question replied in the affirmative. It may be concluded, then, that knowing about food safety has nothing to do with one's ability to pay for it. The expense of keeping yourself clean is too much for these OBC households to pay.

**Table 1. Knowledge of home food safety in families by social category (%)**

| Social group         | Yes   | No     |
|----------------------|-------|--------|
| Forward caste        | 39.29 | 60.71  |
| Schedule caste       | 27.27 | 72.73  |
| Schedule tribe       | 0.00  | 100.00 |
| Other backward caste | 41.38 | 58.62  |
| Overall              | 37.25 | 62.75  |

According to a breakdown of household knowledge by income category, 61.2% of high-income families and 19.2% of low-income households, respectively, are aware of home food safety (Table 2). The majority of middle-class households are ignorant of this problem; 88.8% are not aware of the safety of food prepared at home.

**Table 2. Knowledge of home food safety in families broken down by income group (%)**

| Income group | Yes   | No    |
|--------------|-------|-------|
| High         | 61.22 | 38.78 |
| Medium       | 11.11 | 88.89 |
| Low          | 19.23 | 80.77 |
| Total        | 37.25 | 62.75 |

We also inquired about the street food sellers' knowledge of food standard legislation. Their replies are summarized in Table 11 according to the respondents' ages. In all, 42.7% of the participants

are aware of food standard legislation, whereas 57.2% are not. The majority of sellers (49.1%) who are aware of the legislation are middle-aged, whereas 76.9% of vendors who are over 45 are not.

**Table 3. Distribution of vendors' knowledge of food standard standards according to respondent age**

| Age group          | Aware of food standard law (%) |       |
|--------------------|--------------------------------|-------|
|                    | No                             | Yes   |
| 18–30 years        | 62.50                          | 37.50 |
| 31–45 years        | 50.85                          | 49.15 |
| More than 45 years | 76.92                          | 23.08 |
| Overall            | 57.29                          | 42.71 |

The survey results from street food sellers were rearranged based on how long they had been in business, in order to determine their level of understanding of food standard rules (Table 4). The majority of people (60.4%) who are aware of food quality legislation have only been in operation for one to five years, making them start-up companies. The majority of vendors (76.3% and 70%, respectively) who have been in business for more than ten years or six to ten years are not aware of the food standard requirements.

**Table 4. Vendor awareness of food standard law distribution according to years of business ownership**

| Number of years running business | Aware of food standard law (%) |       |
|----------------------------------|--------------------------------|-------|
|                                  | No                             | Yes   |
| 1–5                              | 39.58                          | 60.42 |
| 6–10                             | 76.32                          | 23.68 |
| More than 10                     | 70.00                          | 30.00 |
| Overall                          | 57.29                          | 42.71 |

Additionally, a cross-tabulation between "aware of food standard laws" and "having licence or not" has been created (Table 5). It is clear that a license to operate their business is held by 60% of the vendors who responded to the survey and are aware of food standard legislation. In addition, 65.1% of people operate their businesses without a license and are

ignorant of the regulations governing food standards. According to these results, street food vendors must register in order for the rules and standards governing food standards to be communicated to them.

**Table 5. Awareness of food standard law among merchants about license requirements**

| Have licence | Aware of food standard law (%) |       |
|--------------|--------------------------------|-------|
|              | No                             | Yes   |
| Yes          | 40.00                          | 60.00 |
| No           | 65.15                          | 34.85 |
| Overall      | 57.29                          | 42.71 |

## 5. CONCLUSION

The research on food safety and standards in India presents a complex picture that is marked by both advancements and difficulties. India has made great progress in creating a food safety regulatory framework, mainly because to the Food Safety and Standards Authority of India (FSSAI), which has established detailed standards and regulations. However, there are still several obstacles standing in the way of effectively putting these principles into practice, including inconsistent state enforcement, poor infrastructure, and a lack of funding. Because non-compliance can result in outbreaks of foodborne diseases and damage consumer faith in the food supply chain, this implementation gap poses a serious danger to public health. Furthermore, even though consumers are becoming more conscious of the significance of food safety, more work has to be done to enlighten and empower them to make wise decisions. As a major player, the food sector must also intensify its efforts to guarantee standard compliance via audits, technology interventions, and training. Promising advancements have occurred in spite of these obstacles, such India's adoption of global best practices, which boosts competitiveness globally and promotes easier trade ties. Going forward, sustaining food safety, safeguarding the public's health, and upholding India's standing as a dependable supplier of high-quality and safe food items will depend heavily on tackling the issues of standard implementation, industry compliance, and consumer awareness.

The food service business in India is known for its traditional meals and has great growth, employment, and revenue potential. Food safety involves following food regulations to ensure food purity and freshness before consumption. Food safety and standards of Indian authority (FSSAI) and the Ministry of Health and Family Welfare under the Government of India enforce food safety and regulations. The government

regulates food safety and accredits certifying agencies. They develop and enforce food safety laws and guidelines. Data on food intake, biological risk, and pollutants are gathered. The above review article analyzes food safety and suggests scientific ways for handling, preparing, and storing food and preventing foodborne infections.

## REFERENCES

1. Chopra, D., & Kulkarni, A. (2019). A study on food safety standards in India: Issues and challenges. *International Journal of Research and Analytical Reviews*, 6(4), 109-116.
2. FSSAI. (2020). Food Safety and Standards Authority of India.
3. Ghosh, S., & Roy, A. (2018). Food safety standards and regulations in India: A review. *Food Control*, 90, 360-370.
4. Government of India. (2021). The Food Safety and Standards Act, 2006. Retrieved from <https://fssai.gov.in/legislation/the-food-safety-and-standards-act-2006.html>
5. Jayathilakan, K., et al. (Eds.). (2015). Food safety in the 21st century: Public health perspective. Academic Press.
6. Khuntia, S., & Lenka, S. K. (2020). Challenges and strategies for effective implementation of food safety regulations in India. *Journal of Food Science and Technology*, 57(2), 371-378.
7. Narayanan, R. (2019). Food safety standards and consumer perceptions: A case study of packaged food products in India. *Journal of Public Affairs*, 19(4), e1977.
8. OECD. (2021). Food Safety Governance in India. OECD Publishing.
9. Panda, S., & Kumar, P. (2020). Ensuring food safety in India: Issues and strategies. *Food Research International*, 128, 108748.
10. Rao, P. V. (2017). Food safety standards and regulations: Perspectives and challenges in India. *Current Opinion in Food Science*, 15, 105-109.
11. Rautela, G. S., & Garg, P. (2021). Consumer awareness and perception towards food safety standards in India: A case study. *Journal of Food Science and Technology*, 58(6), 2152-2162.
12. Sangwan, A., & Kaushik, P. (2018). Role of Food Safety and Standards Authority of India (FSSAI) in ensuring food safety. *Indian Journal of Public Health*, 62(3), 215-217.
13. Sen, P. (2020). Food safety laws in India: Current status and future challenges. *International Journal of Scientific and Research Publications*, 10(1), 269-275.
14. Sharma, A., et al. (2021). Adherence to food safety standards: A study of food businesses in India. *Journal of Food Protection*, 85(2), 299-307.
15. Singh, S. K., & Kaur, G. (2019). Emerging trends in food safety regulations in India: A review. *Journal of Food Science and Technology*, 56(9), 3965-3973.
16. Thakur, K., et al. (2021). Compliance of food safety standards in retail food establishments: A case study in India. *Food Control*, 130, 108354.
17. UN. (2021). Food Safety in India: A Snapshot. United Nations Publications.
18. USDA. (2020). Food Safety and Inspection Service.
19. WHO. (2020). Food Safety. World Health Organization.
20. Yadav, R., & Singh, R. (2018). Challenges in the implementation of food safety regulations in India: A study of small-scale food businesses. *Journal of Food Science and Technology*, 55(12), 4759-4768.

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