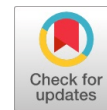


Consumer Perception & Awareness on Food Safety in the Developing Countries – A Critical Review



Subrahmanian Muthuraman, Mohammed Al Hazi, Neena Uthaman, Samia Hudaid Sulaiym Alghazali

Abstract: World Health Day focuses on demonstrating the importance of food safety along the whole length of the food chain in a globalized world. Food safety is the shared responsibility. It is essential to work along the entire food production chain, from farmers and manufacturers to vendors and consumers. Unsafe food creates a vicious cycle of disease and malnutrition, particularly affecting infants, young children, the elderly and the sick. Unsafe food is linked to the deaths of an estimated 2 million people annually, including many children. There is an urgent need to strengthen existing food policies by incorporating the importance of food safety, which is often ignored, thereby improving food governance. This study is based on exploratory research that reviews available literature on consumer perception and awareness of food safety in developing countries. The food we eat must be both nutritious and safe, but we often overlook the issue of food safety. There is a need to improve the nutrition centre in the country, actively spread information, and raise consumer awareness about food safety issues. There are other issues related to the costs of implementing food safety measures and compliance with the standards that the Government should address. There is an urgent need to strengthen existing food policies to incorporate the importance of food safety. Policy makers must prioritise “safe food” and integrate “food safety” into nutrition and food security policies and programs. Good collaboration between governments, producers and consumers helps ensure food safety.

Keywords: Food Safety, Food Governance, Consumer awareness, Consumption, Food Stuffs

I. INTRODUCTION

Food safety has been defined as the conditions and measures that are necessary during the production, processing, storage, distribution, and preparation of food to ensure that it is safe, sound, wholesome and fit for human consumption [16]. Food safety is an umbrella term that encompasses many aspects like food items handling,

preparation, and storage of food to prevent illness and injury. At the beginning of the 1990s, safety was included in marketing theories under the so-called credence attributes [8]. Safety in both developed and developing countries is an important, but not easily estimated, attribute due to the existence of information asymmetry (ibid). Many studies emphasise the role of institutions in mitigating scarce information and promoting safety by providing trust and information through certification and labelling. In developed countries, various studies confirm that, in the consumers' perception, the public and private sectors are the primary sources of safety assurance [5].

The food world markets over the past decade have undergone major changes, causing significant repercussions for the food processing industry and farming. Thus, today, consumers' demand for safe food products in terms of hygiene and sanitary quality has become an absolute priority, causing a spectacular surge in the demand for labelled products [18]. Rapid industrialisation and changing lifestyles have led to the development of large-scale catering services, which prepare and distribute food to the public. There has been a marked increase in the consumption of food outside the home. Greater numbers of people eat meals prepared in restaurants, canteens, and fast food outlets, as well as street foods [15].

II. CURRENT SCENARIO OF FOOD STUFFS

Food is a substance consumed to provide dietary support for a human being. Food ultimately comes from plant or animal origin, and contains essential nutrients, such as carbohydrates, fats, proteins, vitamins, or minerals. Agriculture is the single largest employer in the world. The food retail market was valued at USD 5,643.6 billion in 2013 and is expected to grow at a CAGR of 6.1% from 2014 to 2020, to reach a value of USD 8,541.9 billion in 2020 [10]. The food is digested by the organism's cells to produce energy, sustain life, or stimulate growth. Retail shops are the key source of information and source of buying of Food Products [17].

Consumers ask for innovative products based on different quality characteristics such as strength, safety, masterpiece, better health effects, environmental surroundings protection, etc [11]. The concept of halal products or foods is now sparking a worldwide discussion due to its recognition as a benchmark for safety, hygiene, and quality assurance in what we consume or drink daily. Thus, products or foods that are produced in line with halal prescriptions are willingly acceptable by Muslim consumers as well as consumers from other religions.

Manuscript received on 12 December 2022 | Revised Manuscript received on 20 December 2022 | Manuscript Accepted on 15 January 2023 | Manuscript published on 30 January 2023.

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For a Muslim consumer, halal foods and drinks signify that the products have met the requirements laid down by Shariah law. In contrast, for a non-Muslim consumer, they represent a symbol of hygiene, quality, and safety when produced strictly under the Holistic Halal Assurance Management System. Consumers are becoming increasingly aware of what they eat, drink, and use. The awareness of Muslim and non-Muslim consumers describes their perceptions and cognitive reactions to products or foods in the market. As such, their awareness is an internal state or an intuitive feeling, resulting from sensory perception, towards the products or foods they use or consume. The health reason is the most contributing predictor of the level of halal awareness [1].

III. KEY ISSUES

The food market is expected to bring in revenue by 2020 of \$3.03 trillion, registering a compound annual growth rate (CAGR) of 4.5 percent from 2015 to 2020 [10]. The global food retail industry includes various types of food products such as cereals, meat, packed foods, organic food items, breads, vegetables and fruits, seafood, dairy products, including ice creams, milk items and others and various other household food items [18]. The global food retail market is tremendously contributing to the growth of several other industries, such as the food packaging and food processing industries [11]. These industries are responsible for creating jobs and generating employment on a large scale. Large food retailers typically offer their own brands in addition to well-established ones. In this context, consumers' attitudes and perceptions play a crucial role in ensuring the effectiveness of food quality and safety labelling, as uninformed and distrustful consumers may hinder the usefulness of the implemented policies. From the literature review, it is essential to understand the consumer awareness and perceptions about food safety standards and related institutions, and the consumer perceptions and awareness about current levels of food safety [14].

IV. METHODOLOGY

This study is based on exploratory research that reviews available literature on consumer perception and awareness of food safety in developing countries. The researcher held informal discussions with a few consumers and food safety experts to understand their perceptions and awareness levels regarding food safety. The researcher sought to gather additional information related to the problem identified in this research. The purpose is not to test the hypothesis but to try to discover the facts relating to food safety through exploratory research that is appropriate to or in compliance with the hypothesis.

V. FOOD SAFETY – A MAJOR CONCERN

Before you begin to format your paper, first write and save. Food safety can also be affected by poverty and climate change. Currently, numerous food safety standards are present in the market, which include public vs private, costs involved in certification, different requirements for different markets (e.g., European, American, etc.) [3]. However, there are issues related to the costs of implementing food safety

measures and compliance with the standards. Moreover, if there is an increase in the price of food to ensure food safety, then it becomes less affordable to poor consumers, thereby leading to food insecurity [4].

Food safety is another crucial aspect that consumers usually take for granted, expecting all food to be intrinsically safe, since safety is a nonnegotiable attribute, and a “rational” consumer would never purchase or consume unsafe food. Nevertheless, although under normal conditions most consumers are not worried about food safety, the occurrence of a food safety incident may result in consumer anxiety and panic [13].

Sign of pervasive poverty and massive underinvestment in agriculture is considered an issue. No amount of trans fat is good or healthy. Eating foods that contain it can increase your LDL (bad) cholesterol, lower HDL (good) cholesterol, and increase your risk for type 2 diabetes and heart disease. Globally, discussions regarding foreign direct investment (FDI) in retail are currently underway, and if the appropriate government approves it, it may add benefits to the food retail industry [12]. Globally, Consumer awareness of packaged food and its health-consciousness needs to be improved among consumers. The dominance of the unorganised retail sector has a dramatic impact on food safety standards due to the price factor. Consumers believe that both food safety and quality are essential attributes of food; however, they tend to pay more attention to food quality when purchasing a product, as the two features are often interlinked in their minds. Furthermore, in the consumers' mind, traceability is closely linked to both food safety and food quality [9].

VI. RESULT AND DISCUSSION

According to the UN, access to a safe and secure food supply is a fundamental human right. Everyone needs food and requires it every day, whether from plant sources, animal sources, or a combination of both. There is an urgent need to raise awareness of the limitations of many developing nations and those susceptible to food insecurity [2]. All Countries need to embrace structural changes to ensure food safety for future generations. The primary concern stems from the fact that Safety Standards Authorities should have strict guidelines [10]. International codex guidelines have enacted this. There are a lot of provisions in the Act that require revamping, but what we're seeing is a patchwork implementation of both old and new guidelines, as well as the latest concerning Food Adulteration [2]. Governments of different countries have taken various measures to ensure food safety and hygiene of food products; these are some reasons fueling the growth of the food retail market. The government should completely renovate the Food Safety and Standards and state authorities [5].

The food products should display their labelling to ensure they do not violate food safety norms. Routine checks for packaged food items should be initiated to ensure compliance with the Food Safety and Standards Act. Nutrition labelling refers to the standardised presentation of food.

The food label is one of the most important and direct means of communicating product information between buyers and sellers. Food labels are to provide consumers with information about the environmental, technical, and socioeconomic conditions under which the products were produced, as well as the health and safety aspects of food products. The information about nutrition labelling and the health benefits of food is one of the critical factors that influence decision-making [6]. The restraining impact of lack of supply chain effectiveness in less developed countries is expected to be medium in the short and medium terms, and low in the long term. Government investment in infrastructure and the entry of global food processing companies in developing countries are expected to minimize the impact of supply chain-related restraints [10]. The modern package label has taken on the responsibility of educating the consumer about the product by multitasking, such as attracting, promoting, and motivating at the point of purchase through the information on the label. The labels were closely examined for the declaration of nutrient contents, including calories, fat, protein, dietary fibre, vitamins, and mineral content, either as a percentage of the daily value or recommended dietary intake (RDI), or per 100g, 100ml, or serving size. The nutrient profile should be displayed [12].

The safety of perishable foods depended on temperature control through all stages of the cold chain. These stages encompass the production, transportation, and storage of food items, both in retail displays and in domestic kitchens. The packing of chilled perishable food items into the refrigerator after returning home from shopping contributes to the cold chain. Behaviors such as these help to determine the food safety attitude of consumers and can also contribute to an understanding of their actual food safety behavior [7].

VII. SUGGESTIONS

Many studies suggest that the effectiveness of promotional activities should be increased. The nutritional value should be improved, with a reduction in fat content and the addition of other essential minerals to the product. Food safety requires adequate oversight and inspection at every stage of the food production and supply chain. It is aware that the food processing industry is one of the largest in terms of production, consumption, export, and growth prospects. There is a great need for increasing the investment for national food safety systems, thereby emphasizing food safety as a public health priority [5].

In this globalized world, under the open trade markets as the food crosses the borders, the coordination, cooperation, and communication between various ministries & departments must be improved to focus on food safety at each stage till it reaches the end users [3]. There is a need for effective nutritional education for young consumers has b, whichecome increasingly apparent, given their general food habits and behaviour, particularly during adolescence and it is necessary to analyzed the interaction between young consumers' food preferences and their nutritional awareness behaviour, within three environments (home, school and social) [15].

Governments must be proactive in establishing and improving the broader national food safety systems in which

food producers and suppliers operate. There is an urgent need to strengthen existing food policies by incorporating the importance of food safety, which is often ignored, and to improve food governance so that gender issues are addressed and public-private partnerships are strengthened. The policy makers must include "safe food" as a top priority and integrate "food safety" in the nutrition and food security policies and programs [9]. Good collaboration between governments, producers and consumers helps ensure food safety [15]. This research will provide a theoretical foundation for the hypothesis and theories.

VIII. CONCLUSION

The food we eat must be both nutritious and safe, but we often overlook the issue of food safety. There is need to Improve the Nutrition Centre in the country and increase accessibility to the information therein; Actively spread information and raise consumer awareness about food safety issues; Launch research into the effectiveness of currently mandated warning labels for poultry and investigate potential extension to other kinds of fresh meat; and aim to provide clear, unambiguous, and transparent information relating to the nature, origin, and contents of food products.

ACKNOWLEDGMENT

This paper is part of the Arab Open University's internal funding research titled "Students' Awareness on Food Safety and Nutrient Diet in the Pandemic Environment" during 2021

DECLARATION

| | |
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| Funding | Research Grant Program funded by the Arab Open University – Oman in the year 2021. |
| Conflicts of Interest/ Competing Interests | Authors should declare all competing interests in their work. |
| Ethics Approval | This is only a review paper. |
| Consent to Participate | Not applicable. |
| Consent for Publication | Not applicable. |
| Availability of Data and Materials | Not applicable. |
| Authors Contributions | All four authors have contributed to the development of the paper, including the collection and analysis of the literature, as well as structuring the paper. |
| Code Availability | Not applicable. |

REFERENCES

- Anderson, Joan Grey, and James L. Anderson. "Seafood quality: issues for consumer researchers." *Journal of Consumer Affairs* 25, no. 1 (1991): 144-163. [CrossRef]
- Caswell, Julie A., and Spencer J. Henson. "Interaction of private and public food quality control systems in global markets." *Proceedings of Globalisation of the Food Industry: Policy Implications* (1997): 217-234.

3. Chattu, Vijay Kumar. "Food safety as an integral part of Food Security: Addressing the governance issues and the critical role of climate change." *International Journal of Advanced Research* 3, no. 12 (2015): 1472-1474.
4. Gurudasani, R., and M. Sheth. "Food safety knowledge and attitude of consumers of various food service establishments." *Journal of Food Safety* 29, no. 3 (2009): 364-380. [CrossRef]
5. Hanning, I. B., C. A. O'Bryan, P. G. Crandall, and S. C. Ricke. "Food safety and food security." *Nature Education Knowledge* 3, no. 10 (2012): 9.
6. Hoogenraad, Ebba, and Dorothée de Rooy. "The Netherlands: Food Safety: Dutch Government is Taking it Seriously." *European Food and Feed Law Review: EFFL* 9, no. 4 (2014): 265.
7. Giacomini, C., M. C. Mancini, and C. Mora. "Case study on the traceability systems in the fruit and vegetable sector." In *17th Symposium of the International Farming Systems Association*, pp. 17-20. 2002.
8. Odwin, Ranate, and Neela Badrie. "Consumers' perceptions and awareness of food safety practices in Barbados and Trinidad, West Indies—a pilot study." *International Journal of Consumer Studies* 32, no. 4 (2008): 394-398. [CrossRef]
9. Smed, Sinne, and Jørgen Dejgaard Jensen. "Food safety information and food demand." *British Food Journal* (2005). [CrossRef]
10. Muthuraman, Subrahmanian, and S. Chandrasekaran. "Food Safety Awareness in the Developing Countries—A Literature Review." *ARIV - International Journal of Technology* 1, no 1 (2020): 74-83
11. Tsakiridou, Efthimia, Konstadinos Mattas, Helen Tsakiridou, and Elisavet Tsiamparli. "Purchasing fresh produce based on food safety, origin, and traceability labels." *Journal of Food Products Marketing* 17, no. 2-3 (2011): 211-226. [CrossRef]
12. Unnevehr, Laurian, James Eales, Helen Jensen, Jayson Lusk, Jill McCluskey, and Jean Kinsey. "Food and consumer economics." *American Journal of Agricultural Economics* 92, no. 2 (2010): 506-521. [CrossRef]
13. Van Rijswijk, Wendy, and Lynn J. Frewer. "Consumer perceptions of food quality and safety and their relation to traceability." *British Food Journal* (2008). [CrossRef]
14. Verçuni, Arben, Edvin Zhllima, Drini Imami, Bizena Bijo, Xhuljeta Hamiti, and Ylli Bicoku. "Analysis of consumer awareness and perceptions about food safety in Tirana, Albania." *Albanian Journal of Agricultural Sciences* 15, no. 1 (2016): 19.
15. Verbeke, Wim, Lynn J. Frewer, Joachim Scholderer, and Hubert F. De Brabander. "Why consumers behave as they do concerning food safety and risk information." *Analytica Chimica Acta* 586, no. 1-2 (2007): 2-7. [CrossRef]
16. WHO, Geneva. "The role of food safety in health and development; report." *Technical Report Series (WHO)*. No. 705. (1984).
17. WHO (2022), Food Safety, Available: <https://www.who.int/news-room/fact-sheets/detail/food-safety>
18. World Health Day 2015, Available: http://www.who.int/features/factfiles/food_safety/en/



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