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Food Quality, Safety and Sustainability – A Critical Review of Factors Influencing Consumer Viewpoint and Practices.

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Abstract

Food quality, safety, and sustainability are increasingly recognized as interconnected pillars shaping the modern food system. Rising consumer expectations, shifting cultural values, regulatory requirements, and industry pressures have pushed these issues to the forefront of food policy and practice. This review brings together current scholarship across these domains, highlighting the ways in which they overlap, reinforce, and sometimes conflict with each other. Evidence shows that while quality and safety are strongly linked in consumer perceptions, their integration with sustainability is less consistent. Broader sustainability concerns—including affordability, equity, resource efficiency, labour conditions, and long-term health impacts—often struggle to align with market realities. Barriers such as cost pressures, consumer skepticism towards corporate claims, and uneven access to new technologies limit progress. At the same time, innovations in packaging, credible labelling, and transparent communication can strengthen trust and influence consumer choices, particularly in emerging markets such as India where cultural and socio-economic contexts strongly shape behaviour. Significant research gaps remain, especially in developing holistic frameworks that consider multiple sustainability dimensions, capturing consumer perspectives beyond environmental awareness, and comparing patterns across developed and developing economies. Future research should focus on integrated approaches that balance health, safety, and sustainability, enhance credibility in sustainability communication, and adapt digital solutions to diverse socio-economic contexts. By addressing these gaps, this review provides insights for academics, policymakers, and practitioners seeking to build a food system that is safe, high-quality, and sustainable in the broadest sense.

Keywords: Food safety; Food quality; Sustainability; Purchase choices; Consumers' viewpoint; Consumer preferences; Information needs, consumer behaviour, packaging, greenwashing, emerging economies.

1. Introduction

Several studies have shown that the concept of quality is not static, but quite relies on the numerous perspectives from which it is gauged. A technical interpretation of quality in industrial terminology may largely vary from what customers perceive quality as. In reality, from the perspective of a customer, a number of elements contribute in determining the quality of a food product. They include not only the intrinsic attributes such as taste and other organoleptic traits, but also external ones such as the product's origin and labelling (Symmank, 2018). Consumer happiness and therefore, consumer buying decisions are driven by a variety of reasons and values, and the Total Food Quality theoretical model attempts to integrate these considerations in order to better comprehend these motivations and values. The consumer perception is divided into two parts: a horizontal dimension based on the element of time that distinguishes between quality perceptions before and after the purchase (expected quality and experienced quality), and a vertical dimension that describes intention to buy based on consumers' perception of quality. Purchase intent is derived from a compromise between three factors: expected quality, which is based on the perception of the product's intrinsic and extrinsic indicators, the expectation of complete satisfaction at the time of purchase, and the perceived cost of the product. As a result, the idea of quality has a significant subjective component that is tied to the impression of the customer and is impacted by the many qualities of the product (Mascarello et al., 2015). Quality evaluation is important in the model, but not as a goal in and of itself, but rather as a means of determining whether or not a product meets the needs of customers and the values connected with it. Consumer expectations are significantly influenced by how a product's characteristics are viewed, and vice versa. The values desired and anticipated by customers have an effect on the most desirable features of quality as well as the manner

in which the different qualities are perceived and judged. The process begins with the product's qualities and progresses via anticipated quality and ultimately leads to purchase. Motivations involve the use of more abstract cognitive categories as the process progresses (Sadilek, 2019). In this article the author reviews relevant research papers and will try to find the research gaps. This article intends to provide an overview of the current food safety, consumer behaviour and sustainability, based on reviews of the existing literature.

2. Impact of hygiene and sanitation practices

According to the Caribbean Industrial Research Institute (CARIRI) – Food Safety Centre (2013), people prefer to purchase food from clean food retailers or suppliers. On the other hand, keeping clean hands and fingernails was emphasised. During Tobago's Carnival, most food vendors wore food tags, according to this poll. Food vendors must first get food badges from the Tobago Assembly's Division of Health (THA). Regular health inspections are conducted throughout the island's various celebrations. A food badge requires a medical certificate, two passport-sized photos, participation at a necessary food lecture, and payment of fees (Ministry of Health, 2011). The food credential allows vendors to sell food to the public (Benny-Ollivierra and Badrie, 2007). Those that wore food badges fared well in the study, according to the interview questions and checklist. They donned aprons and hair nets, and had the correct nails and jewellery. Since most vendors made and sold food, they had to handle payment while serving at events. As seen above, formal education has a significant influence on pupils' comprehension of food safety practices (Brannon et al., 2009). These businesses also maintained clean food contact surfaces, enough food visibility, covering and storage, as well as competent food handling and storage. Serving utensils were also employed during Carnival. The division issues food badges to firms that conform to food safety regulations. Surprisingly, this study relied only on eye-witness accounts and interviews. Hot or warm water is recommended for washing utensils, according to the Food Safety and Inspection Service (FSIS) of the United States Department of Agriculture (USDA). Only 32.0% of sellers cleaned their silverware with warm soapy water. It is possible that the island's festivities didn't have enough water to clean and sanitise flatware (Park et al., 2016). Sanitation is a major consideration for customers when choosing a restaurant. Consumers' emotional reactions to sanitary problems have been hardly studied. Food handling, dining experience, outside, washrooms, and workers were found to be significant to customers' sanitation responses. The findings revealed that customers utilise accessible sanitation circumstances (washrooms and personnel) in their perceptions of sanitation in full-service restaurants.

According to WHO (1984), most street food sellers are aware of sanitary norms, but do not follow them. While street sellers were assessed to have high personal cleanliness, they were lacking in hygiene at the preparation and selling areas. The lack of basic amenities at vending locations was largely blamed for non-compliance with basic hygiene rules. Benny-Ollivierra and Badrie (2007) noted that majority of the vending locations studied did not have pipe carried water, 97.5 percent did not have drain to channel waste water, or toilet facilities. The findings were similar in Kingston, the Philippines and Uganda (Muyanja *et al.*, 2011). Lack of toilet facilities drove most street food hawkers to seek out isolated spots nearby such bushes and unfinished structures to urinate.

According to Idowu and Rowland (2006), most street food sellers in Abeokuta, Nigeria, utilise dung hills and adjacent bushes as toilets and clean up with paper. Garbage was collected in open containers. The same study found that in Kampala, Uganda, 92.8% of merchants utilised gunny bags to collect rubbish. Overflowing garbage bins was recorded in many research. From the findings it can be construed that, a correct practice of food safety, hygiene and sanitation is a primary consideration of consumers when it comes to food choices and consumption.

3. Food safety Hazards and risk factors

Food safety is closely related to preventing biological, physical, chemical, and technical dangers. According to Yeung and Morris (2001), a hazard is a bad event or occurrence connected with an activity or process that poses a danger to the receiving environment or population. Griffith (2000) defined danger as a "substance" that may cause damage and has a chance of happening. There are several frequent contributing variables to food borne disease in food service. For example, poor heat treatment, improper food storage, diseased food handlers, and cross-contamination are all key contributing causes. Griffith's concerns about food safety have been highlighted by the FDA (The United States Food and Drug Administration) since 2004. In summary, food safety is a system of principles, practises, and implementation that ensures food is safe to consume throughout processing, preparation, transit, handling, and serving. The above risk factor categorization is based on operator's viewpoint. From the consumer's perspective, this categorization has two main flaws.

First, certain methods and processes are hidden from customers. Simply visiting a store does not allow customers to assess the suitability of food storage or the dependability of food sources. Second, customer concerns about safety in foodservice, stem from visible indications such as cleanliness procedures (Perlik, 2002). A clean glassware, tablecloth and restrooms may greatly affect customer trust. According to a 2002 poll for National Food Safety Education Month, patrons of quick service restaurants immediately associate cleanliness and sanitation to possible food safety concerns. Perlik (2004) found that customers trust restaurant cuisine because of clean dinnerware (81%) and clean table or table covering (77%) and lavatory (72%) cleanliness. Food safety is the state that can be seen, felt, and experienced by the customer to avoid food related illness, therefore food hygiene is critical. There is little research on how customers assess a restaurant's food safety issues. Leach *et al.* (2001) studied how customers perceive food safety in public dining establishments. Using a modified Delphi approach, the researchers proposed six factors:

- (1) the outside and administration of the premises,
- (2) the interior and management of the premises,
- (3) the employees,
- (4) the food and drink,
- (5) the immediate surroundings,
- (6) Recommendations, advertisements, and amenities.

With two deviations, this categorization resembles that of Amjadi and Hussain (2005). Food, people, facilities, and vermin are all aspects in food hygiene. While food and people factors are constant, environmental elements are classified differently (facilities and vermin in Amjadi and Hussain vs. exterior, interior, and near environment in Leach) remain ambivalent.

4. Consumer preferences and viewpoint on food service

Hong Kong customers chose an American theme restaurant based on food quality, waiters' attitude, value for money, environment, and word-of-mouth (Heung, 2002). The most important factors in selecting a Korean restaurant were flavour, friendliness, and cleanliness (Min, 2016). To attract students in the United States, quick-service restaurants must focus on delivering great quality and value (Kim et al., 2010). They found that past favourable experience, a clean production/service environment, and friendly treatment were the most important variables influencing restaurant choice. These studies show that customers consider things other than cuisine when choosing a restaurant. External evaluations and word-of-mouth recommendations are crucial decision-making factors for high-end restaurants (Harrington et al., 2013). According to Ha et al. (2016), restaurant crowdedness and review ratings influence consumer decision. Narine and Badrie (2007) also found that health/nutritional advantages (60.8%), safety/sanitation (60.0%), and menu pricing (60.0%) impact meal selections (55.8 percent). In fine dining establishments, customer service is paramount and money is secondary (Njite, et al., 2008). A restaurant's design and environment become decisive elements after a choice set suited to the occasion and segment is invoked, according to Auty (2006). Aspects such as age, wealth, education, and employment also influenced the relevance of qualities (Ali et al., 2013) The researches that study how customers assess the food safety level of restaurants are still few. Food and location, employees and handling, premise and procedures, and ambient fragrance were identified as four fundamental food service hygiene elements by Fatimah et al. (2011). According to Aksoydan (2007), sanitary aspects such as cleanliness of the restaurant, cuisine, porcelain and silverware, service staff, toilet and lavatory, and kitchen are the most essential variables influencing consumer choice. According to Worsfold (2006), cleanliness of the restrooms and the aesthetics of the food institution are the most essential variables when customers rate food hygiene/safety. Aspects such as gender, age, income, marital status, education, and employment also influenced the value of parameters used to assess food safety/hygiene. Several researches emphasised the necessity for consumer education on food safety.

5. Consumer attitude towards food safety

Consumers are the main victims of unsafe street food (A. Alimi et.al, 2016). Consumers' attitude towards street food safety varies depending on socio-economic characteristics (B.A. Alimi, et al., 2016). While some are careful about where and how they buy street meals due to the risks, others are driven by a desire to fulfil their gastronomic demand and appreciate the gustatory qualities (N. Benkerroum, 2013). Consumers' attitudes about street meals are typically influenced by their education, money, food safety awareness, age, and gender. These variables have been shown to have varying effects on customer attitudes about street food safety and perceived risks. In contrast Liu et al. (2014) and Samapundo et al. (2015)

found that education and wealth had no effect on customers' perception of street food dangers in China and Haiti. According to Alimi et al, customers with greater education were more aware of the health dangers associated with street food, whereas those with more income preferred to shop at regulated fast food outlets and supermarkets, despite the higher costs. In China, Haiti, and South Africa, Liu *et al.*, Samapundo *et al.* and Asiegbu *et al.* (2016) found that less educated customers were more aware of food dangers. These results suggest that increased education and money do not always reflect better food safety awareness and habits. However, young guys aged 20–35 were judged to be the most oblivious to the dangers of street meals. Their jobs and lifestyles were blamed for their carelessness.

6. Web-Based Applications Used in Accessing Food Safety Information

To increase food safety perceptions and KAP (Knowledge, Attitude and Perception) among college students, Yarrow et al. (2009) developed online classes that incorporated audio snippets and drag-and-drop exercises. A web-based programme with movies, games, exercises, quizzes, and lectures helped middle school pupils learn about food safety. Both studies employed a single channel to assess student food safety. Four more research employed both online and offline media to promote consumer food safety education. In one of the four studies, instructors utilised websites, videos, CD-ROMs, printed materials, and teaching packs to teach food hygiene in elementary schools. Teachers used resources from the British Nutrition Foundation (BNF), Food Standards Agency (FSA), Food and Drink Federation (FDF), British Meat Education Service, Milk Marketing Board, government websites, BBC website, and Expresso. Furthermore, secondary school science instructors utilised CD-ROMs, PowerPoint presentations, lab kits, and a website called Food Safety FIRST to construct and assess a food safety teaching programme. Kosa et al. (2011) evaluated the effects of utilising a purpose-built website and print materials such as a pamphlet to teach food safety practises among 272 older persons aged 70 to 75 years. The survey also indicated that fewer than half (40.0 percent) of seniors who visited the food safety website considered the application helpful, and 44.0% would return to the site for further food safety information. Next, 81.8 percent of participants accepted that the website aided them learn more about food safety, and 83.9 percent thought it might be a reputable source of food safety information. To learn about the food safety concerns of fresh veggies, Kuttschreuter et al. (2014) studied 1264 customers from eight countries. For information on food safety, participants used social media such as Twitter and online blogs to gather information, while others used online media such as news websites, search engines, and the official websites of food-related agencies. After television, the Internet was determined to be the second most popular source of food safety information. The survey also found that customers with less understanding utilised the apps less often than those with more knowledge. YouTube was regarded as the most successful tool utilised, while videos put on Facebook sites were also deemed effective. Manu et al. (2021) found that YouTube outperformed Facebook, Twitter, and Pinterest as a social media instructional tool.

7. Spread of Food Safety Perception among Consumers

Consumers in China generally rate food safety as excellent. Food treated with pesticides and rotting food was recognised as the third and fourth most prevalent food dangers by consumers. Surprisingly, GM foods and food additives were deemed the safest and most concerning. Consumers viewed physicians, research institutes, consumer groups, and the government as the most reputable providers of safety information. Consumers were also viewed as being most worried about their health, whilst food producers were connected with the country's food safety debate. Peng et al. (2015) also found that recent food safety difficulties in China impacted public faith in the food sector, despite the fact that the food industry denied the issue. The declaration did not restore consumer confidence in food. The advice on important food hygiene messaging, benefited both teachers and parents at a UK elementary school. According to Zhang et al. (2019), women and urban dwellers were more worried about food safety than males and rural dwellers. Participants from eastern, more developed parts of China, under 31 years old, and regular Internet users were similarly more worried about food safety. The unfavourable opinion of "very unsafe" and "unsafe" in food safety assessment grew from 2013 to 2015. Participants who used the Weibo search engine often had worse food safety ratings. Also, in an intervention trial, participants strongly agreed that risk of food borne disease rose with age.

8. Food Service: Demands and perceptions

Based on their research, Fontanillas *et al.* (2013) concluded that service is fundamental for survival and growth of any organisation. People establish service quality expectations independent of the product or service they desire. According to Santos *et al.* (2012), eating street food has a social as well as a biological purpose, since it is a time of meeting and

conversing. The study discovered that even if the individuals do not trust the quality of marketed food, numerous variables predominate in the danger of disease. According to Rossi *et al.* (2012), customers expect excellent service in return for good food. The vendors' cleanliness, conduct, friendliness, and concern exemplify this exceptional service. Trust in a well-known seller was highlighted as a critical factor in selecting a street food site by Rheinländer *et al.* (2008). Many customers said they purchase street food from the same trusted seller. Because of this widespread lack of confidence in street food safety, customers tend to struggle to build trust with recognised sellers. Loriato and Pelissari (2017) found in a Brazilian study that service is a decision factor for customers when choosing a street food vendor.

9. Retail and E-Retail in food sector

The word "retail" refers to any operations involving the direct selling of products or services to end users for non-commercial purposes. Any business that generates most of its revenue from selling is a retailer. Growing use of new technology and rising shop costs have prompted businesses to explore alternative sales channels (Kotler, 1999). It is also widely believed that new retail shop formats are emerging. Apart from information, the internet is a powerful marketing and commercial tool. Most businesses aim to take advantage of the internet's low-cost features. The use of new technologies in retail complements the integration of the value chain and consumer communication (McDonald, 2009). Customers' confidence in electronic transactions is critical in electronic selling. It necessitates a secure environment for both merchants and clients. As a result, every online merchant obtains customer identity (name, address, and other personal data) to execute user identification and access payment methods. Because each merchant follows this method, clients must repeat the process each time they wish to deal with a new company (Hill et.al., 2009).

The food choice drivers taste, cost effectiveness, safety, quality, accessibility, Co consumer reviews, location gender, age, social status etc. seem to have a noticeable effect on various e commerce modes as per a study conducted. Also the consumption preferences were found to vary based on the type of e commerce mode chosen (Wang, Somogyi and Charlebois, 2020). In the food industry, flawless time and data management is mandatory to develop a robust customer experience and a coherent purchase process. Buyers need to have access to track details from product availability and ordering to delivery. Hence the structure and growth of retail e-business is becoming more essential.

10. Impact of food safety on firms: Food scares and sustainability

E. coli incident related with Jack in the Box restaurant chain in 1993 was greatest and worst food catastrophe in recent US history. Four children died and 700 others became sick due to the food safety problem that year. Due to the crisis, Jack in the Box lost millions in sales (Braunlatour et al., 2006). In 2000, Chi-and Chi's Sizzler were linked to foodborne diseases that contributed to their demise. In 2002, ConAgra was linked to an E. coli epidemic that sickened 19 individuals after eating infected hamburgers. ConAgra had to recall almost 19 million pounds of beef, the third biggest in US history (Becker, 2002). Evidently, food safety incidents may harm a company's bottom line. However, the effect of food safety incidents on businesses has been under-reported. Consumption reductions and declines in food purchase intentions have been used to assess the effect of food safety incidents on company performance (Lobb et al., 2007). While many studies have focused on customer demand, less research has focused on the financial consequences of food safety incidents on business profitability. For example, Henson and Mazzocchi (2002) evaluated the influence of official disclosures about a suspected relationship between BSE and human health on UK farm economy. The analysis revealed that the government statement hurt processors of dairy products, animal feed, and pet foods as well as beef processors. The research concluded that anomalous stock returns reflect instantaneous market estimations of the firm's future worth. The authors also stressed the need of studying the impact of food safety information on market judgments over a longer time than a single day. Due to the constant process of information acquisition and assimilation in response to uncertainty, assessing longer-term cumulative abnormal returns is important. The importance of long-term knowledge on product markets was also highlighted by van Ravenswaay and Hoehn (1991). Thus, knowing the financial repercussions of food safety incidents is critical. The observations also recommend a need for collaboration between government, industry and consumer to develop and implement communication policy for a sustainable food production

11. Motivators of consumer food safety decisions

Consumers' perceptions and beliefs regarding food safety are influenced by socioeconomic features (e.g., age, gender, education level, income), cognitive aspects (e.g., knowledge, risk perception, food concerns, previous experience with food safety incidents) and other situational factors (e.g., price, place of purchase, traceability). Food safety motivators were

grouped into three categories: (1) sociodemographic characteristics, (2) cognitive aspects, and (3) other. In the "sociodemographic characteristics" category, the motivator with the highest number of corresponding results was education level (results = 22), followed by income (results = 22), both positive drivers for food safety perceptions. The "cognitive aspects" category comprised the majority of the identified motivators. Concern for food safety (results = 32) and risk perception (results = 30) were the motivators with the highest number of results among all categories and motivators. Finally, the main motivator in the "other" category was place of consumption/purchase (results = 8), focusing on consumers underestimating the risk of having a foodborne disease when eating away from home. (Zanetta *et al.*, 2022).

Liu and Jang (2009) Researchers at Chinese restaurants employed the Mehrabian and Russell model to investigate links between dining atmospheres, emotional reactions, perceived value, and behavioural intents in their research. According to the findings of these two research, physical settings have a significant impact on customers' emotional reactions, which subsequently influence their behavioural intent at restaurants.

Stoetzel (1990), in his research on the social and psychological aspects of eating habits, discovered that eating habits are highly essential in the daily lives of the majority of people. His research on the behaviour of Tunisian Jewish immigrants revealed that changes in their dietary practices happened rather late in the process of integration, as shown by examinations of their behaviour. Before they began to adjust their eating habits, they embraced the language and newspapers of their host nation, which took time. In other situations, a shift in religious beliefs came before a shift in dietary habits.

12. Consumer Life style and Sustainable development

Sustainability of any system is assessed taking into account the impact the system has on the environment, society and economy. Consumers are inclining towards sustainable practices and are paying an increased attention in augmenting food sustainability. Sánchez-Bravo et al., (2021). The food industry is currently more apprehensive about sustainability aspects related to its operations as its scope of impact on various dimensions is becoming apparent. Stringent statutes and coercion from stakeholders adds to the apprehension. A steep increase in consumer's call for adopting sustainable lifestyle can be seen from the increasing demand for further details about food manufacturing procedures, source and nature of ingredients and raw materials used, and the ecological footprint of the products they are buying. (Garcia-Garcia, Azanedo and Rahimifard, 2020).

The concept of sustainable development can be analysed in three interrelated dimensions, economic, social, and ecological. In economic terms, it relates to GDP growth, which will provide an appropriate amount of goods and services; in social terms, it relates to the improvement of the quality of life, and in particular to meeting social needs, in ecological terms, it relates to the improvement of the condition of the natural environment, preservation of natural capital, and protection of biodiversity. Sustainable development is nurtured by environmental space, and a presumed synergy between economic, environmental and social aspects. Sustainable development is a process of redesigning the consumer thought process by allowing choice from the various options of consumption available. The sustainability thought process induces a tendency, to think about aspects of environmental and self-health.

A better quality of life, efficient and effective use of natural resources, a greener process of manufacture and thoughtful use of material and services to cater the basic needs of life can be considered a sustainable system. (Maciejewski *et al.*, 2021)

Change in consumption pattern or behaviour is a driving tool for sustainable development. However, the change from unsustainable to sustainable consumption behaviour is complicated. The behavioural patterns are governed by societal and conventional milieu. The consumer habits and routines greatly influence sustainable consumption choices. Consumption is a holistic process, part of a broader consumer lifestyle, strongly influenced by the social context in which it takes place. Individual changes in purchasing behaviour can contribute to progress toward sustainability, but progress also depends on supports from deeper changes occurring within consumer lifestyle and throughout society (Belz and Peattie, 2009).

Hence there clearly is seen a need to conceptualize sustainable consumption behaviour. consumer-oriented environmental politics, experiments need to be developed to achieve sustainable consumption and support consumers in making their lifestyles more sustainable.

13. Major Findings from review

The most significant contributions of this review are (1) the expansion of information about the elements that influence consumer perception of food safety and (2) the provision of practical implications for practitioners in order to design successful crisis management techniques. The specifics of this study are that it is the attempt to not only examine the impacts of food safety on consumer decision-making and firm value, but also to investigate how the impact varies depending on a variety of factors, such as risk severity, recalls, previous history, firm size and media attention. As it is the first study to look at the relationship between food safety and customer perception assessments of food businesses, this study opens the door for future studies to employ additional measures, such as consumer surveys, to gather information. Second, the findings of this research have substantial implications for practitioners in various areas.

Ruling factors in food consumption are price, economic status, social backgrounds, desires, preferences, and food safety. An exponential change in the consumption behaviour of consumers is seen in recent years, attributed to a number of factors like raise in the standard of living, the desire to live healthier and better, has led to increase in demand for healthy food. Subsequent food scares and health crisis in recent times however have decreased consumer confidence. To rebuild consumer confidence significant improvements in standards of food safety is called for. The government's role in this aspect is significant in terms of defining improvised safety standards, consumer protection acts, and in creating awareness through educational programs and trainings. Large societal costs through medications, hospitalization and other public costs are triggered as consequences of food borne diseases directly impacting economical sustainability.

It is critical to have pre-crisis management plans in place, as well as post-crisis communication strategies, in order to handle crisis circumstances in a manner that preserves a company's image while in crisis. The findings relating a company's previous history of food safety incidents highlight the need of having pre-crisis management methods in place. The training and education of staff on food safety is crucial in the development of an effective management plan for avoiding or handling a catastrophic situation.

Systems to encourage eco-friendly and pro-social consumer behaviours can be cultured by understanding the dimensions and possibilities as behavioural changes are inevitable to induce societal sustainability. Radical breakthroughs in this area of the economy are very rare, and in many cases, corporations do not even attempt to introduce such innovations. Nonetheless, they have the potential to contribute to a significant increase in safety.

14. Conclusion

Consumers' decision-making attitude is positively related to their perception and knowledge about food safety. Food safety knowledge varies with economic levels and levels of education and background. According to the findings, raising consumer knowledge on food safety might result in a greater likelihood of making more informed purchasing choices. Greater the awareness less is the impact of co consumers. Consequently, rely more on the safety information provided by government organizations. In tandem a strong perception of food safety risks result in increased concerns about food safety issues and a higher tendency to choose safe foods, like organic or natural foods.

Consumers are increasingly concerned about the safety issues of food quality, this may be attributed to the recurring food safety incidents and scares. Thus, the government and stakeholders should take measures to reinstate consumer confidence.

Consumers are increasingly concerned about topics such as "naturalness" and "authenticity" in food goods, as well as the country of origin of the product and the manner in which it is made. In such a scenario to maintain a sustainable domestic or local market and face the competition posed by foreign manufacturers, local manufacturers need to communicate better by understanding consumer opinions, desires, and needs.

In light of the particularities of food consumption, we demonstrated that the ability to buy food with confidence is a "non-negotiable" trait. This analysis of the literature reveals that consumers in industrialised nations have grown increasingly demanding when it comes to food safety, which might result in a boycott, in the event of a suspected or proved presumed contamination of food. Various factors, such as social amplification of the risk and media attention, may have a significant impact on the purchasing of food. It is apparent that consumers are more likely to reject a product if the danger is imminent rather than if the risk is spread out over time. However, it is not at all obvious that uncertainty (including health) is a factor in making a non-purchase choice. In this case, the customer may choose to ignore the uncertainty (believe it does not exist) or lower his or her willingness to pay (as if he considered that his health has a price).

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A sustainable food system is a dynamic process. The review demonstrates the need for achieving sustainability in three dimensions — environmental, economic and social. Though there is a radical growth in food system awareness among consumers, the measure of extent of change needed for food systems to be sustainable is yet to be established. Food security can be achieved only through sustainability.

References

- 1. Symmank, C. (2018). Extrinsic and intrinsic food product attributes in consumer and sensory research: literature review and quantification of the findings. Management Review Quarterly, 69(1), pp.39–74.
- 2. Mascarello, G., Pinto, A., Parise, N., Crovato, S. and Ravarotto, L. (2015). The perception of food quality. Profiling Italian consumers. Appetite, 89, pp.175–182.
- 3. Sadilek, T. (2019). Perception of food quality by consumers: literature review. www.um.edu.mt. [online] Available at: https://www.um.edu.mt/library/oar/handle/123456789/40398 [Accessed 16 Mar. 2022].
- 4. Caribbean Industrial Research Institute (CARIRI) Food Safety Centre (2013) Be careful when buying food. Trinidad and Tobago Newsday, 23 January
- 5. Ministry of Health (2011) Public Health Inspectorate Advisory. Ministry of Health, Port-of-Spain. URLhttp://www,health.gov.tt/news/newsitem.aspx?id=208 (accessed on 10 August 2013)
- 6. Benny-Ollivierra, C. & Badrie, N. (2007) Hygienic practices by vendors of the street food 'Doubles' and public perception of vending practices in Trinidad, West Indies. Journal of Food Safety, 27, 66–8
- 7. Brannon, L.A., York, V.K., Roberts, K.R., Shanklin, C.W. & Howells, A.D. (2009) Appreciation of food safety practices based on level of experience. Journal of Foodservice Business Research, 12, 134–154.
- Park et al. (2016) Consumer perceptions and emotions about sanitation conditions in full-service restaurants, JOURNAL OF FOOD SERVICE BUSINESS RESEARCH 2016, VOL. 19, NO. 5, 474–487 http://dx.doi.org/10.1080/15378020.2016.1189740
- 9. WHO, (1984) WHO Technical Report Series, No. 705(The Role of Food Safety in Health and Development): Report of a Joint FAO/WHO Expert Committee on Food Safety, 1984.
- 10. C. Benny-Ollivierra, N. Badrie (2007) Hygienic practices by vendors of the street food doubles and public perception of vending practices in Trinidad, West Indies, J. Food Saf. 27, 66–81.
- 11. C. Muyanja, L. Nayiga, N. Brenda, G. Nasinyama (2011), Practices, knowledge and risk factors of street food vendors in Uganda, Food Control 22, 1551–1558
- 12. O.A. Idowu, S.A. Rowland (2006), Oral fecal parasites and personal hygiene of food handlers in Abeokuta, Nigeria, Afr. Health Sci. 6, 160–164.
- 13. Yeung, R.M.W., Morris, J., (2001). Food safety risk: consumer perception and purchase behavior. British Food Journal 103 (3), 170–186.
- 14. Griffith, C.J., (2000). Food safety in catering establishment. In: Farber, J.M., Todd, E.C.D. (Eds.), Safe Handling of Foods. Marcel Dekker, New York, pp. 235–256.
- 15. Perlik, A., (2002). Feeding the faith. Restaurants and Institutions 12 (13), 40–48.
- 16. Perlik, A., (2004). To protect and serve. Restaurants and Institutions 114 (5), 42–44.
- 17. Leach, J., Mercer, H., Stew, G., Denver, S., (2001). Improving food hygiene standard—a customer focused approach. British Food Journal 103 (4), 238–252.
- 18. Amjadi, K., Hussain, K., (2005). Integrating food hygiene into quantity food production systems. Nutrition and Food Science 35 (3), 169–183.
- 19. Heung, V.C.S., (2002). American theme restaurants: a study of consumer's perceptions of the important attributes in restaurant selection. Asia Pac. J. Tour. Res. 7 (1), 19–28.
- 20. Min, K.H., (2016). Selection attributes and satisfaction of ethnic restaurant customers: a case of Korean restaurants in Australia. Int. J. Tour. Sci. 16 (4), 151–169

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- 21. Kim, Y.S., Hertzman, J., Hwang, J.J., (2010). College students and quick-service restaurants: how students perceive restaurant food and services. J. Foodserv. Bus. Res. 13 (4), 346–359.
- 22. Harrington, R.J., Fauser, S.G., Ottenbacher, M.C., Kruse, A., (2013). Key information sources impacting Michelin restaurant choice. J. Foodserv. Bus. Res. 16 (3), 219–234.
- 23. Ha, J., Park, K., Park, J., (2016). Which restaurant should I choose? Herd behavior in the restaurant industry. J. Foodserv. Bus. Res. 19 (4), 396–412.
- 24. Narine, T., Badrie, N., (2007). Influential factors affecting food choices of consumers when eating outside the household in Trinidad, West indies. J. Food Prod. Market. 13 (1), 19–29.
- 25. Njite, D., Dunn, G., Kim, L.H., (2008). Beyond good food: what other attributes influence consumer preference and selection of fine dining restaurants? J. Foodserv. Bus. Res. 11 (2), 237–266.
- 26. Auty, S., (2006). Consumer choice and segmentation in the restaurant industry. Serv. Ind. J. 12 (3), 324–339.
- 27. Ali, J., Nath, T., (2013). Factors affecting consumers' eating-out choices in India: implications for the restaurant industry. J. Foodserv. Bus. Res. 16 (2), 197–209
- 28. Fatimah, U.Z.A.U., Boo, H.C., Sambasivan, M., Salleh, R., (2011). Foodservice hygiene factors the consumer perspective. Int. J. Hosp. Manag. 30 (1), 38–45.
- 29. Aksoydan, E., (2007). Hygiene factors influencing customers' choice of dining-out units: findings from a study of university academic staff. J. Food Saf. 27 (3), 300–316.
- 30. Worsfold, D., (2006). Eating out: consumer perceptions of food safety. Int. J. Environ. Health Res. 16 (3), 219–229.
- 31. B.A. Alimi, T.S. Workneh, (2016) Consumer awareness and willingness to pay for safety of street foods in developing countries: a review, Int. J. Consum. Stud. 40 (2016) 242–248
- 32. B.A. Alimi, A.T. Oyeyinka, L.O. Olohungbebe, (2016) Socio-economic characteristics and willingness of consumers to pay for the safety of fura de nunu in Ilorin, Nigeria, Qual. Assur. Saf. Crops Foods 8, 81–86.
- 33. N. Benkerroum, (2013) Traditional fermented foods of North African countries: technology and food safety challenges with regard to microbiological risks, Compr. Rev. Food Sci. Food Saf. 12, 54–89
- 34. Z. Liu, G. Zhang, X. Zhang, (2014) Urban street foods in Shijiazhuang city, China: current status, safety practices and risk mitigating strategies, Food Control 41 (2014) 212–218
- 35. S. Samapundo, R. Climat, R. Xhaferi, F. Devlieghere, (2015) Food safety knowledge, attitudes and practices of street food vendors and consumers in Port-au-Prince, Haiti, Food Control 50 (2015) 457–466.
- 36. C.V. Asiegbu, S.L. Lebelo, F.T. Tabit, (2016) The food safety knowledge and microbial hazards awareness of consumers of ready-to-eat street-vended food, Food Control 60 (2016) 422–429
- 37. Yarrow, L.; Remig, V.M.; Higgins, M.M. (2009) Food safety educational intervention positively influences college students' food safety attitudes, beliefs, knowledge, and self-reported practices. J. Environ. Health 2009, 71, 30–35.
- 38. Kosa, K.M.; Cates, S.C.; Godwin, S.L.; Ball, M.; Harrison, (2010) R.E. Effectiveness of educational interventions to improve food safety practices among older adults. J. Nutr. Gerontol. Geriatr. 2010, 30, 369–383.
- 39. Kuttschreuter, M.Ô.; Rutsaert, P.; Hilverda, F.; Regan, Á.; Barnett, J.; Verbeke, W. (2014) Seeking information about food-related risks: The contribution of social media. Food Qual. Prefer. 2014, 37, 10–18.
- 40. Manu, B.D.; Ying, F.; Oduro, D.; Boateng, S.A. (2021) Student engagement and social media in tertiary education: The perception and experience from the Ghanaian public university. Soc. Sci. Humanit. Open 2021, 3, 100100.
- 41. Peng, Y.L.; Li, J.J.; Xia, H.; Qi, S.Y.; Li, J.H. (2015) the effects of food safety issues released by we media on consumers' awareness and purchasing behavior: A case study in China. Food Policy 2015, 51, 44–52.
- 42. Zhang, J.; Cai, Z.; Cheng, M.; Zhang, H.; Zhang, H.; Zhu, Z. (2019) Association of internet use with attitudes toward food safety in China: A cross-sectional study. Int. J. Environ. Res. Public Health 2019, 16, 4162
- 43. Fonseca, M.T., Kulcsar, J., Pregnolato, J. and Leme, M.B. (2013), "Comida de Rua na Cidade de São Paulo, SP: Uma Breve Descrição", Revista Rosa Dos Ventos, Vol. 5 No. 2, pp. 311-318

Journal of Informatics Education and Research

ISSN: 1526-4726 Vol 5 Issue 4 (2025)

- 44. Santos, V.A., Santos, M.P., Matos, V.D., Lôbo, L.N., Freitas, F. and Silva, I.D. (2012), "Perfil dos consumidores de alimnetos de rua", Revista Baiana de Saúde Pública, Vol. 36 No. 3, pp. 777-791.
- 45. Rossi, G.B., Silva, D., Debessa, F.N. and Garcia, M.N. (2012), "Percepção de valor dos consumidores de serviços de restaurantes: um estudo com modelagem de equações estruturais", Revista Brasileira de Marketing, Vol. 11 No. 3, pp. 27-53.
- 46. Rheinländer, T., Olsen, M., Bakang, J.A., Takyi, H., Konradsen, F. and Samuelsen, H. (2008), "Keeping up appearances: perceptions of street food safety in urban Kumasi, Ghana", Journal of Urban Health, Vol. 85 No. 6, pp. 952-964
- 47. Loriato, H.N. and Pelissari, A.S. (2017), "Atributos determinantes na decisão de compra e satisfação dos clientes: um estudo em estabelecimentos que comercializam comida de rua", Revista Brasileira de Pesquisa em Turismo, Vol. 11 No. 1, pp. 109-132.
- 48. Kotler P., (1999), "Marketing management: analysis, planning, implementation and control", 9th edition, Prentice Hall.
- 49. McDonald L.,(2009), esp@cenet®: Survey reveals new information about users, World Patent Information, Volume 31, Issue 2, June 2009, pp.142-143
- 50. Hill J., Eckerd S., Wilson D., Greer B., (2009), "The effect of unethical behavior on trust in a buyer–supplier relationship: The mediating role of psychological contract violation", Journal of Operations Management, Volume 27, Issue 4, August 2008, pp. 281-293.
- 51. Wang, O., Somogyi, S. and Charlebois, S. (2020). Food choice in the e-commerce era. British Food Journal, ahead-of-print (ahead-of-print)...
- 52. Braun-latour, K.A., Latour, M.S., Loftus, E.F., (2006). Is that a finger in my chili? Using affective advertising for postcrisis brand repair. Cornell Hospitality Quarterly 47 (2), 106–120
- 53. Becker, E., (2002). 19 million pounds of meat recalled after 19 fall ill. The New York Times. Retrieved May 8, 2010.
- 54. Lobb, A.E., Mazzocchi, M., Traill, W.B., (2007). Modelling risk perception and trust in food safety information within the theory of planned behavior. Food Quality and Preference 18 (2), 384–395.
- 55. Henson, S., Mazzocchi, M., (2002). Impact of bovine spongiform encephalopathy on agribusiness in the United Kingdom: results of an event study of equity prices. American Journal of Agricultural Economics 84 (2), 370–386.
- 56. van Ravenswaay, E.O., Hoehn, J.P., (1991). The impact of health risk information on food demand: a case study of alar and apples. In: Caswell, J.A. (Ed.), Economics of Food Safety. Elsevier, New York.
- 57. Zanetta, L.D., Mucinhato, R.M.D., Hakim, M.P., Stedefeldt, E. and da Cunha, D.T. (2022). What Motivates Consumer Food Safety Perceptions and Beliefs? A Scoping Review in BRICS Countries. Foods, 11(3), p.432.
- 58. Liu, Y., & Jang, S. C. S. (2009). The effects of dining atmospherics: An extended Mehrabian—Russell model. International Journal of Hospitality Management, 28(4), 494–503. doi:10.1016/j.ijhm.2009.01.002
- 59. Stoetzel J (1990) Topics in Social and Cultural Anthropology: Seven Habits of Highly Effective Graduate Students. Ecology of Food in Changing World.
- 60. Sánchez-Bravo, P., Chambers V, E., Noguera-Artiaga, L., Sendra, E., Chambers IV, E. and Carbonell-Barrachina, Á.A. (2021). Consumer understanding of sustainability concept in agricultural products. Food Quality and Preference, 89, p.104136.
- 61. Garcia-Garcia, G., Azanedo, L. and Rahimifard, S. (2020). Embedding sustainability analysis in new food product development. Trends in Food Science & Technology.
- 62. Maciejewski, G., Malinowska, M., Kucharska, B., Kucia, M. and Kolny, B. (2021). Sustainable Development as a Factor Differentiating Consumer Behavior: The Case of Poland. EUROPEAN RESEARCH STUDIES JOURNAL, XXIV (Issue 3), pp.934–948.
- 63. Belz, F.-M. and Peattie, K. (2009). Sustainability marketing: a global perspective. Chichester, West Sussex (Gb): J. Wiley, Dl